Aalto-yliopisto
Aalto-universitetet
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Master’s Programme in Industrial Engineering and Management

Culture’s Captive – The Role of Organizational Culture in Large-Scale Agile Transformations

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Teemu Lampela

Master’s Thesis
2022

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Author Teemu Lampela

Title of thesis Culture's Captive – The Role of Organizational Culture in Large-Scale Agile Transformations

Programme Industrial Engineering and Management

Major Organisation Design and Leadership

Thesis supervisor Assistant Professor Niina Nurmi

Thesis advisor(s) Hanne Lehtovuori, Master of Laws (LL. M.)

Collaborative partner Suomen Osuuskauppojen Keskuskunta

Date 21.12.2022 **Number of pages** 148 + 5 **Language** English

Abstract

Organizational culture has been cited as one of the most common issues in agile transformations. Yet little is understood about the topic of agile culture or its direct effects on agile transformational efforts. In this thesis, I have studied and expanded the concept of agile culture associated with the broader self-management literature. Moreover, this study discusses the individual inhibitors and enablers of agile culture.

The study was conducted as a qualitative case study using a grounded theory-building methodology utilizing ethnographic observations and semi-structured interviews in theory building.

Large hierarchical organizations can espouse outdated beliefs and practices that inhibit change and be bound by their overly complex structure. Moreover, the culture of hierarchy can unconsciously bind organizations to the previous hierarchical practices. Organizations can paradoxically increase their control over the change process to alleviate the uncertainty of organizational change, further entrenching and legitimizing the previous culture.

The findings illustrate the need for organizations to take a more holistic and integrated view of organizational culture, leadership, and strategy. Integrating shared leadership practices and iterative strategy help the organization align practices and decision-making around agile culture, allowing for a smoother stepwise transition. Psychological safety, transparency, and vertical and horizontal communications were found to be important in facilitating agile teamwork and customer value co-creation. The findings emphasize the need for a gradual deconstruction of physical hierarchies and control systems early on by allocating more low-level resources and bottom-up initiatives in agile transformations.

Keywords Agile Development, Organizational culture, Self-management, Iterative development, Organizational change

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Tekijä Teemu Lampela

Työn nimi Kulttuurin Kahleissa – Organisaatiokulttuurin Rooli Laajamittaisissa Ketterissä Toimintamallimuutoksissa

Koulutusohjelma Tuotantotalous

Pääaine Organisation Design and Leadership

Vastuuopettaja/valvoja Apulaisprofessori Niina Nurmi

Työn ohjaaja(t) Hanne Lehtovuori, Oikeustieteiden Maisteri (OTM)

Yhteistyötaho Suomen Osuuskauppojen Keskuskunta

Päivämäärä 21.12.2022 **Sivumäärä** 148 + 5 **Kieli** englanti

Tiivistelmä

Organisaatiokulttuuri on yksi useimmin viitatuista ongelmista ketterissä organisaatiomuutoksissa. Ketterästä kulttuurista ja sen yksityiskohtaisimmista vaikutuksista ketteriin muutosmalleihin ymmärretään hyvin vähän. Tässä opinnäytetyössä luodaan tarkempaa kuvaa ketterästä kulttuurista suhteessa itseohjautuvuuden kirjallisuuteen. Lisäksi työssä tarkastellaan ketterän kulttuurimuutoksen mahdollistavia ja estäviä tekijöitä.

Työ toteutettiin laadullisena tapaustutkimuksena käyttäen ankkuroitu teoria -tutkimusmenetelmää, hyödyntäen etnografista havainnointia ja puolistrukturoituja haastatteluita osana teorian rakentamista.

Suuret hierarkkiset organisaatiot voivat sitoutua monimutkaisiin rakenteisiinsa sekä vanhentuneisiin uskomuksiin ja käytäntöihin heikentäen muutoskyvykkyyttä. Epävarmuuden vähentämiseksi muutoksena aikana hierarkkiset organisaatiot voivat paradoksaalisesti lisätä kontrolliaan muutosprosessissa sitouttaen ja vahvistaen aiempaa hierarkkista kulttuuria.

Löydökset havainnollistavat organisaatioiden tarpeen kokonaisvaltaisemmalle organisaatukulttuurin, johtamisen ja strategian tarkastelulle. Jaettujen johtamiskäytäntöjen ja iteratiivisen strategian integrointi mahdollistavat ketterien toimintamallien ja päätöksenteon yhteensovittamisen ketterän kulttuurin kanssa. Psykologisen turvallisuudentunteen, organisaation läpinäkyvyyden, vertikaalisen- ja horisontaalisen viestinnän tärkeys läpi organisaation korostuvat löydöksissä tukien ketteriä toimintamalleja ja asiakasarvon yhteisluontia. Lisäksi vaiheittaisten organisaatiohierarkioiden ja kontrollimekanismien purkamista tulisi korostaa muutoksen alkuvaiheissa lisäämällä työntekijätason resursseja ja alhaalta ylöspäin suuntautuvien aloitteiden korostamista ketterissä toimintatapamuutoksissa.

Avainsanat Ketterä kehittäminen, Organisaatiokulttuuri, Itseohjautuvuus, Iteratiivinen kehitys, Organisaatiomuutos

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Preface

Kiitos professori Niina Nurmelle yksityiskohtaisesta avusta, jatkuvasta tuesta ja palautteesta työn aikana. Avasit minulle uuden maailman laadullisessa tutkimuksessa, joka on ollut keskeinen työn toteutuksen ja onnistumisen suhteen.

Haluan kiittää Hanne Lehtovuorta avusta ja ohjauksesta. Kiitos yksityiskohtaisesta palautteesta, lisämateriaalista ja tarkennuksista, jotka mahdollistivat työn sisällöllisen laadun. Kiitos myös jokaiselle työhön ja haastatteluihin osallistuneelle. Iso kiitos SOK:n HR tiimille jatkuvasta avoimuudesta, luottamuksestanne ja mahtavasta yhteistyöstä!

Kiitos Nalle-koiralle kaikesta tuesta pitkien korona- ja opintovuosien aikana. Olit keskeinen osa opintomenestystäni, vaikket sitä itse koskaan tietäisikään. Olet ikuinen valonpilkkeeni synkimpinäkin hetkinä. Hyvä poika!

Haluan kiittää vanhempiani ehdottomasta tuesta läpi opintopolkuni. Opiskelin missä tahansa tai mitä tahansa, olitte aina tukenani 100 %:sti. Vaikka motiiviini eivät olleetkaan teille aina täysin selkeitä ja yliopistomaailma tuntui kovin kaukaiselta, seisoitte aina päätösteni takana. En olisi tässä ilman teidän loputonta kärsivällisyyttänne ja ymmärrystänne. Tämä työ on omistettu teille.

Espoo, 21. Joulukuuta 2022
Teemu Lampela

Symbols and abbreviations

Abbreviations

DT	Design Thinking
HCD	Human-centered design
HR	Human Resources
IT	Information Technology
IID	Iterative and Incremental Development
JIT	Just-in-Time
MBO	Management by Objectives
OKR	Objectives and Key Results
PDSA	Plan-Do-Study-Act
SAFe	Scaled Agile Framework
SOK	Suomen Osuuskauppojen Keskuskunta
STSD	Sociotechnical System Design
TPS	Toyota Production System
XP	Extreme Programming

1 Introduction

Rapid technological change is becoming increasingly relevant for incumbent organizations, even when they are not directly involved in the technology industry. Accelerating innovation, product life cycles, and technology transfer have led to a significant decrease in the longevity of large-scale organizations in recent decades (Anthony et al., 2018). As both the theoretical models (e.g., Kane and Alavi, 2007; March, 1991; Teece, 2007) and empirical findings (He & Wong, 2004; Uotila et al., 2009) suggest, there is a need for more preemptive sensing of customer needs as well as flexible and adaptive approaches to increasing environmental dynamism and customer needs for organizations. This increased environmental dynamism has subsequently increased interest in agile practices (Digital.ai, 2021).

Adopting agile in a large-scale organization presents a unique challenge. Agile development models were meant for smaller development teams (Schwaber & Sutherland, 2020), forcing large-scale agile organizations to modify the existing frameworks for successful adoption (Jalali & Wohlin, 2012; Gustavsson, 2021). Large organizations become entrenched in previously learned behaviors, quickly lose their agility, and become bureaucratic as their size and age increase (Levinthal & March, 1993). Large incumbent organizations become anchored in their previous organizational culture through historical narratives and storytelling (Dailey & Browning, 2014; Sonenshein, 2010; Wilkins, 1984), strategy (Levinthal & March, 1993; Raffaelli et al., 2019, Vuori & Huy, 2015), structure (de Sitter, 1999; Lindvall et al., 2004; van Amelsvoort & Hootegem, 2017), organizational identity (Dikert et al., 2016; Rafaelli et al., 2019; Vuori & Huy, 2015) and hierarchical leadership practices (Dikert et al., 2016; Gandomani et al., 2014; Iivari & Iivari, 2011; O'Connor, 2010) rooted in positivist epistemology and scientific management frameworks (Bennis & O'Toole, 2005; Ghoshal, 2005; Gioia & Pitre, 1990). Cultural challenges are one of the most common issues in agile adoption, often accounting for up to 40-50% of transformation failures (Digital.ai, 2021). To assess the issue of organizational culture in agile development, I seek to find answers to the following research question in this study:

1) How does organizational culture influence the adoption of large-scale agile practices in a non-software intensive organization?

The study was performed at Suomen Osuuskauppojen Keskuskunta (SOK) during the start of an agile transformation, in January 2022, simultaneously with this study. The study was performed as qualitative constructivist grounded theory research using interviews, observations, and access to the secondary data in the form of internal and external documentation. The interviewing process was performed as semi-structured interviews, focusing on a multidisciplinary human resources (HR) team and the cross-functional agile teams that work across different units. The goal of the study was to understand the early opportunities and challenges in large-scale agile transformations from the perspective of the SOK in a novel non-software intensive organizational culture. During the study, I sought to understand the sensemaking processes, the underlying beliefs and expectations, and the informants understanding of agile culture and processes to estimate SOK's success and preparedness for the change. In addition, as agile HR represents a very novel environment, the goal was to create a greater understanding of the unique factors that large-scale agile in non-software intensive organizations represent.

From a theoretical perspective, this thesis aims to provide unique insight into the early challenges and opportunities of agile adoption in non-software intensive organizations from the perspective of organizational culture, which has been studied little (Hoda et al., 2012). Moreover, as a lot of the agile literature has been developed by software engineers for software engineers (Hoda et al., 2018), I seek to promote a more holistic literary review and discussion on the topic of agile development from a broader scope of academic literature. I strive to adopt a more interdisciplinary perspective by breaking boundaries between contemporary software engineering, management, organizational psychology, and sociology literature related to the topic.

From the practitioner's point of view, this study aims to provide a holistic look into adopting agile and building preparedness in an organization to make the transformation into an agile organization easier. The theory and concepts of agile organizations and culture have been studied particularly little outside the IT and software development, with few exceptions, such as project management and product development (Digital.ai, 2021; Hoda et al., 2018). This thesis aims to provide a more generalizable approach from theoretical and practical perspectives and create a more cohesive understanding of agile practices that practitioners can apply across occupational boundaries. Moreover, this work seeks to provide more concrete solutions toward establishing and understanding agile culture. Too often, cultural issues in theory and practice are treated as individual issues, failing to capture the full extent of organizational culture.

2 Literature review

2.1 Agile software development

2.1.1 A brief history of agile

The agile methods have their roots in iterative and incremental development (IID) methods. This terminology is a blanket term for all the techniques that support incremental and iterative evolutionary development of a process, product, or piece of software (Larman & Basili, 2003). While the word "iteration" or "iterative development" is often used to describe a complete rework of a process or product, in an agile context, the word iteration means both the frequent revisit and advancement of a product, thus referring to an evolutionary process. The word "increment" or "incremental development" in this context means a time-boxed form of development where within a set amount of time, an "increment" or a functional piece of the product, software, or service is delivered to the customer.

IID is a blanket term for any form of development where the product is delivered in several parts and iterated upon by collecting customer feedback (Sommerville, 2016). In IID, each iteration builds upon the previous iteration by adding functionality to the product or service in a way that delivers early value to the customer. According to Sommerville, the different increments can be prioritized depending on the customer needs to maximize the early customer value. He explains that it enables increments to be developed in parallel, but each increment will go through the software lifecycle process.

The Agile Manifesto is historically relatively recent, but its roots go significantly further. The first mentions of incremental development can be traced to the 1920s in Cicero, Illinois. In a factory, as part of the statistical control management system, Walter Shewhart started developing and describing the Plan-Do-Study-Act (PDSA) process (Best & Neuhauser, 2006). It became known as the Deming cycle due to Edwards Deming's successful marketing campaigns (Best & Neuhauser, 2006). Deming described the PDSA cycle to be implemented in "short cycles" for quality improvement (Larman & Basili, 2003).

The first documented deployment of IID methods in a project can be traced back to the 1950s and 1960s at NASA to the X-15 project and the Project Mercury (Dana, 1993; Warren-Findley, 2001). While the X-15 project was not purely software-based, the developmental experience was built during this project, and some of the personnel later moved on to work on Project Mercury, which ran with as short as a half-day iteration which was unheard of at that time (Larman & Basili, 2003).

Though the IID methods started gaining public notoriety in the nineties, these developments can be traced back to post-war Japan. Takeuchi &

Nonaka (1986) describe a new iterative product development method that, instead of being sequential, has teams working on parts of the project in overlapping phases of development, as the authors had observed in Japanese technological companies like Honda and Canon. It would shape what would later become the Scrum method, a vital part of modern-day agile practices (Beedle et al., 1999). Similar techniques were also standard and observed at the time in the now-famous Toyota Production System (TPS) in the form of Kaizen – a word that translates into "continuous improvement" in Japanese (Manos, 2007). Though developed in 1950s post-war Japan, Kaizen would only make its way into western quality management systems later in the 1980s and is utilized to date in Lean Six Sigma and contemporary agile practices (Manos, 2007; Schwaber & Sutherland, 2020).

In the 1990s, the frustrations and failures of "waterfall-based thinking" and the increasingly competitive markets forced business practitioners to reconsider their methodologies (Larman & Basili, 2003). At that time, larger software development houses were deploying their own forms of incremental development. In the mid-1990s, Microsoft was deploying its form of incremental development with 30-day timeboxing and a smaller 1-day "micro-increments" called the "synchronize-and-stabilize method" (Cusumano & Yoffie, 1999). This method would resemble modern-day agile in many ways. The development was flexible, with development done in parallel, based on significantly lower specifications and documentation with only a vision statement as guidance, seeking continuous improvement and customer feedback (Cusumano & Yoffie, 1999). Similarly, in 1996 at the Chrysler C3 payroll project, Beck (2000) was developing the Extreme Programming (XP) project. In 1999, influenced by Takeuchi & Nonaka (1986), Beedle et al. (1999) finalized their version of iterative development that would later become Scrum.

In February 2001, at a cabin in Utah, seventeen experts representing the different IID methods got together to discuss and promote the future of IID methods and principles. As a result of this meeting, the Agile Alliance was created alongside what is now known as the Agile Manifesto and the twelve agile principles. The four core values of agile developed by Beck et al. (2001) go as follows:

> "Individuals and interactions over processes and tools
> Working software over comprehensive documentation
> Customer collaboration over contract negotiation
> Responding to change over following a plan"

In this brief manifesto culminates the decades of frustration experienced by academics and practitioners alike. The previously followed plan-driven waterfall-based models relied on heavy documentation, contracting, and extensive planning. The agile methods counterbalance the bureaucratic practices that had become overwhelming during the age of the internet and faster-changing customer needs (Cusumano & Yoffie, 1999).

While the benefits of incremental development were known as early as the 1950s and rose to prominence in the 1980s, these practices have not been adopted in industries outside software development and IT. Most recent reports from Digital.ai (2021) estimate that while 86% of software development and 63% of IT firms have adopted agile, the adoption outside these areas varies between 10-17%, except for operations management, with a 29% adoption rate. However, the article states that the recent events of COVID-19 forcing substantial portions of the workforce remote has accelerated the adoption of agile practices even outside software development and IT. Similarly, a recent report from Hoda et al. (2018) states that in academia, the main interested parties in agile practices are centered around software engineering and IT

2.2 The core practices of contemporary agile

2.2.1 Background

Though agile as a term could be described through the original Agile Manifesto and the twelve principles of agile (Beck et al., 2001), this would not accurately reflect the modern-day usage of the word. Both academics and practitioners have taken significant liberties in redefining and reinterpreting the original work's meaning (Gustavsson, 2021; Jalali & Wohlin, 2012).

While Lindvall et al. (2002) reported that organizations were using several different methods such as XP, Scrum, Feature Driven Development, Crystal, Dynamic Systems Development, and Agile Modeling for agile development, it is most important to look at what is being done in practice today. In its infancy, methods such as XP were popular from academic and practitioners' perspectives (Dybå & Dingsøyr, 2009). Recent surveys indicate that less than 1% of organizations surveyed utilize XP exclusively (Digital.ai, 2021). Instead, the most common agile approach is Scrum, with over 66% using it as their primary approach and 81% using a form of a hybrid approach that includes Scrum (Digital.ai, 2021). According to the article, the other standard methods used were DevOps, with a 56% use rate, and Kanban boards (77%) or its combination of ScrumBan. It is also common for organizations to utilize lean-thinking that is built into the Scrum framework (Schwaber & Sutherland, 2020) and Design Thinking or Human-Centered Design approaches (Hoda et al., 2018).

2.2.2 Scrum

Scrum is an approach that has its roots in the late 70s and 80s Japanese product development (Larman & Basili, 2003). The inspiration for the Scrum method came from Takeuchi & Nonaka (1986), where the two authors described their experiences of multidisciplinary teams working with overlapping approaches in Japan in companies such as Canon, Honda, and Fujitsu. The first published inception of Scrum was released by Beck et al. (2001). The current definitive guideline for Scrum is “The Scrum Guide” by Schwaber and Sutherland (2020), who were also part of the first iteration of Scrum. Many agile practitioners use the existing Scrum practices in their work with a flexible interpretation of the guide (Gustavsson, 2021; Jalali & Wohlin, 2012).

The Scrum Guide is a short and lightweight document, which according to Schwaber and Sutherland (2020), the guide is built that way on purpose as it is in the spirit of agile to avoid overly detailed instructions. They suggest that the Scrum Guide builds on its readers' collective intelligence and interpretations to make the most out of it. It merely describes the basic theory, philosophy, and structure and allows the reader to make the most of it. However, despite its short length, the authors are firm in assessing that the guide should be strictly followed: “While implementing only parts of Scrum is possible, the result is not Scrum. Scrum exists only in its entirety and functions well as a container for other techniques, methodologies, and practices” (Schwaber and Sutherland, 2020, p. 13).

Scrum operates on a Sprint basis. Schwaber and Sutherland (2020, p. 7) state: “Sprints are fixed-length events of one month or less,” after which the next sprint begins immediately. According to them, all the necessary activities from Sprint planning, Sprint reviews, and Sprint retrospectives happen within a single Sprint. They add that during Sprints, there are “Daily Scrums,” a 15-minute daily event used to evaluate and inspect the progress and update the Product Backlog. During these brief meetings, the developers aim to answer three questions: “What did you do the previous working day? What will you do today? Any impediments?” (Meyer, 2014, p. 149).

The Product Backlog that can be used for iteration planning as a prioritized list of activities that the Scrum Team can use to prioritize their work based on customer requirements (Schwaber and Sutherland, 2020). Product Backlog is used to understand and reflect the customer requirements as closely as possible (Beck, 2000). According to Beck, this can be achieved through customer-centric means involving the relevant stakeholders in the product-building process as closely as possible. The Developers can question the Product Backlog's content and prioritization, but the ultimate decision falls upon the Product Owner (Schwaber & Sutherland, 2020).

The Sprint Planning utilizes qualitative effort estimation in the form of Planning Poker, which has been influenced by the US government’s “Delphi” method (Meyer, 2014) and findings in “wisdom of the crowds” (Surowiecki, 2004). Surowiecki argues that through the collective intelligence of experts, significantly more accurate results can be harnessed than from a single expert alone. The averages of collective estimates tend to lead to more accurate results, especially when individuals are forced to justify and explain their estimates (Brenner et al., 1996; Jørgensen & Moløkken, 2002). This way, the

Planning Poker relies on the collective judgment of the developers for the effort estimation of product features (Meyer, 2014). The Product Owner can be the moderator but not participate in the estimation (Cohn, 2005). As he explains, in Planning Poker, a set of cards is used in non-linear sequences such as the Fibonacci sequence to estimate the effort in number format as the effort for any project rarely scales perfectly multiplicatively. According to Cohn, each developer reveals their cards simultaneously, the highest and lowest scores justify their stance, and another round starts until a resolution is met.

Retrospective happens at the end of Sprint. The retrospective enables the Scrum team to evaluate the results of the Sprint and adjust future Sprints, present the outcomes of the said Sprint to the stakeholders, and progress towards the product goal (Schwaber and Sutherland, 2020). The retrospective meetings can also be used to revise the Scrum project practices and the development process to make it more efficient as it serves as a platform for discussion (Schwaber, 2004).

The team size in Scrum is described as “typically ten or fewer people,” as the teams are designed to be cross-functional and self-managing (Schwaber and Sutherland 2020). They explain that the teams have only three designated roles: Scrum Master, Product Owner, and Developers. According to the authors, the Scrum Master holds responsibility for managing Scrum and teaching it to the team. Moreover, the authors explain the Product Owner alone is liable for the Product Backlog and maintaining the content and prioritization and is responsible for the stakeholder needs. According to the guidelines, Developers are the people who are responsible for both the planning and deployment of each Sprint, who are made up of cross-functional team members capable of bringing each Sprint from start to finish.

In Scrum the small development teams are self-organizing and work autonomously to find the right solutions to the problem (Schwaber 2004; Schwaber and Sutherland 2020). However, this does not mean the team is free to do as they please. Control over the team and the product is asserted through what Schwaber (2004, p. 24) calls “empirical process control.” The complex system and work outcomes are controlled through transparency, inspection, and adaption (Schwaber 2004; Schwaber and Sutherland 2020). Schwaber (2004) reasons that when the system is too complicated to control through defined approaches, the empirical approach is the next best option.

Scrum forms the baseline for most modern agile practices (Digital.ai, 2021; Gustavsson, 2021). Many of the practices such as the small team-based organization, tools, and processes such as the backlog, strong customer involvement, retrospectives, and short iterations along with autonomous leadership are commonly shared across different agile practices with varying applications and interpretations while often bolstered with additional tools and processes (Digital.ai, 2021; Gustavsson, 2021; Jalali and Wohlin, 2012).

2.2.3 Lean

Like Scrum, lean originate from Japanese product manufacturers as both methods originate from TPS (Holweg, 2007; Spear & Bowen, 1999). In agile, lean is applied at a high level of inception, so it is widely applicable across different industries (Poppendieck & Cusumano, 2012). A core principle in lean is eliminating waste (Muda), which is explained to be "anything that does not add customer value directly or add knowledge about how to deliver that value more effectively" (Poppendieck & Cusumano, 2012, p. 26). In the same vein, eliminating unnecessary planning, contracting, and excessive processes that do not directly produce customer value is at the core of agile (Beck et al., 2001).

Along with reducing waste is faster delivery, tied to the Just-in-Time (JIT) system. The idea is derived from the pull system of lean. The pull system creates products based on customer demand to minimize excess stock (Medinilla, 2012). He claims that in this way, the customers' needs predicate and pull the value stream forwards instead of scheduled events pushing people to work. Faster delivery presents two-sided benefits for both the customer and the service provider. The faster one can deliver a product, the happier the customer, and at the same time, the organization will also have less work-in-progress, representing excess stock, inventory, and production (Medinilla, 2012; Poppendieck & Poppendieck, 2003). Moreover, several overlapping projects or works in progress significantly lower the productivity of an individual due to unnecessary context switching (Weinberg, 1992). Furthermore, in product and software development, fast delivery means faster customer input and feedback, which can be turned into additional features, meaning the end product will better match the customers' needs (Poppendieck & Poppendieck, 2003).

Lean principles in agile emphasize continuous learning by combining two different key ideas from TPS and agile. First, borrowing the concept of the "Five Why's" model from TPS by building a culture of inquiry and continuous learning in the organization (Alukal, 2007). Second, continuous learning could also be expressed as "decide late as possible" (Poppendieck & Poppendieck, 2003). Delaying critical decisions in lean exists to leverage the model's flexibility to have the best available knowledge to make the best possible decisions (Poppendieck & Cusumano, 2012). They argue the amount of information one has at the start of a project regarding customer needs is likely to be significantly lower than toward the later parts of the project and several iterations with customer feedback.

Part of lean is the principle of employee engagement that operates under the belief that employees know best the right decision for their jobs and are most motivated to do so when they are allowed to autonomously figure out the problems (Poppendieck & Poppendieck, 2003). In addition to engagement, trust and mutual respect are also highlighted, which are strongly linked to employee psychological safety and team-level performance, both of which are critical for agile teams (Adler, 1993; Edmondson & Lei, 2014; Gren et al., 2017; McHugh et al., 2011).

Lean promotes continuous improvement (Kaizen) (Manos, 2007). Continuous improvement means minor gradual improvements intended to be made over time. In some cases, companies can also talk about “Kaizen events” or “Kaizen blitzes,” referring to forms of rapid improvement projects, which are more extensive improvements done quickly (Manos, 2007). However, the original idea opposes the traditional view of large organizational transformations and dramatic events as these run a higher risk of failure and do not produce the expected results (Probst, 2003). Instead, the changes are made at the lowest possible level of the organization to ensure flexibility and that the person directly affected by the change is always involved (Spear & Bowen, 1999).

Lean development shares many parallels with agile principles. The practices of continuous learning, fast delivery, and reduction of parallel work all share similarities or have inspired the existing agile practice (Poppendieck & Poppendieck, 2003; Poppendieck & Cusumano, 2012). However, rather than seeing the two as competing frameworks, they should be seen as complementary, aiding in the continuous improvement of processes and creation of customer value (Poppendieck & Poppendieck, 2003; Poppendieck & Cusumano, 2012)

2.2.4 Kanban

Kanban is a visualization tool popularized by TPS to support the continuous delivery required in lean and JIT systems (Manila, 2012). Kanban is used to visualize the value stream and limit the amount of work in progress (Manila, 2012). In agile, Kanban is similarly used to limit work in progress, as those propose unnecessary risks and lower efficiency (Poppendieck & Poppendieck, 2003; Weinberg, 1992). The Kanban process is predicated on three rules: (1) visualizing the workflow, (2) limiting work in progress, and (3) measuring lead times.

Visualizing the workflow happens by dividing the work into smaller manageable units, writing them down on cards or post-it notes, and placing them on a Kanban board. The board will be filled with several named columns to visualize the location of the item within the workflow (Kniberg & Skarin, 2010).

Limiting work in progress is seen as beneficial as large amount of work in progress is harmful due to increases in the required inventory and slowing down the speed of the work, thus disrupting the workflow (Kniberg & Skarin, 2010; Poppendieck and Poppendieck, 2003; Weinberg, 1992). While seemingly counterintuitive as employees are often used to the processes of multitasking, it has been demonstrated through several different means of theoretical and empirical evidence and simulations that working on several projects at once slows down the production of work (Medinilla, 2012; Weinberg, 1992). In his study, Weinberg (1992) illustrated that employees lose 20% of their productivity for each additional project they are working on.

Lastly, measuring lead times refers to measuring the average time to complete one item within the Kanban board (Kniberg & Skarin, 2010). They argue that by measuring the lead times, employees can further optimize their workflows and measure their work output, making the lead times more predictable.

Kanban offers a visualized tool to track the workflow through the various stages in the value stream. It supports the principle of transparency in Scrum, which contributes to the cultural changes in the organization (Kniberg & Skarin, 2010). The authors argue that visualizing and measuring the work makes it easier to expose the underlying issues within the workflow, such as bottlenecks, queues, variability, and unnecessary waste in the overall system. Furthermore, the authors claim that the visibility of the Kanban boards creates transparency within the organization which provides both the internal team members and the external stakeholders with visibility into the day-to-day actions and workflows, which can directly affect workplace behavior and encourage collaboration. Manila (2012) adds that including a Kanban board can also help see the greater system when all the Kanban cards are gathered within the board, creating a visual map of the production process and layout.

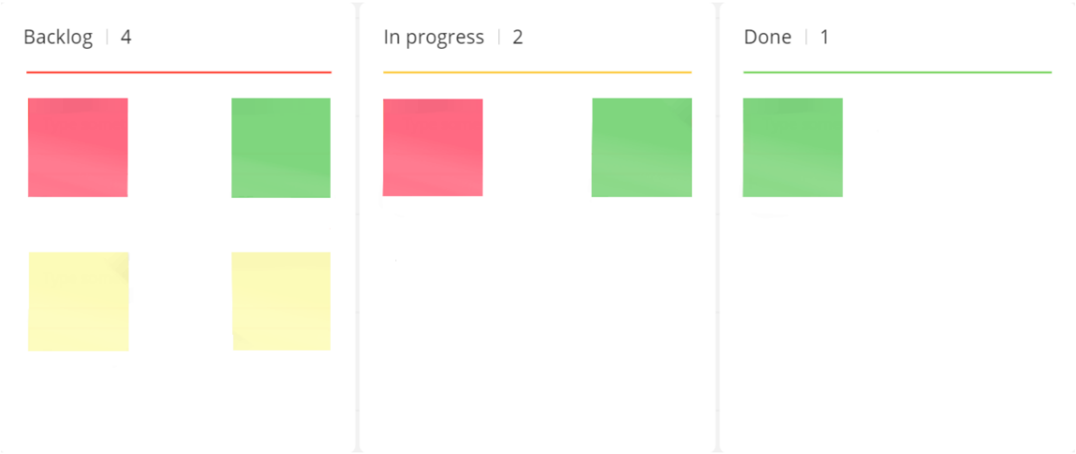

Figure 1: An example of a Kanban board

The figure above represents a basic visualization of Kanban. For co-located teams, the Kanban board is a physical board with post-it notes filling the wall. However, there are many different online tools for distributed teams or teams that might be working remotely. Any Kanban board will have several stages where the progress of an item is tracked through the workflow. The number of states can depend on the developer and can include more states depending on what is being produced (Kniberg & Skarin, 2010). They explain that different states are marked with separate columns while the items are tracked through post-it notes. The number in each column represents the number of items that can exist within that state at any given time to limit work in progress (Kniberg & Skarin, 2010; Manila, 2012).

2.2.5 Design Thinking

Human-centered design (HCD), or as it is better known in the business and management sciences, Design Thinking (DT), has had a long history in the field of computer sciences and software development originating from the intersection of various fields in humanities and engineering often traced back to the Stanford Joint Program in Design in 1958 (Ritter et al., 2014). The goal of DT is to create more customer-centric products and services that better match the customer’s or user's needs by creating a deep understanding of the customer and empathizing with their perspective (Gruber et al., 2015).

While Scrum and agile methods often include customer-centricity and user participation from the stakeholders, this does not always result in a product desired by the customer (Piccoli & Ives, 2005). Modern applications of DT have been applied broadly in many organizations outside design and usability studies. Cohn (2004) and Beyer et al. (2004) were few of the first to suggest the integration of DT and agile. Some authors see the application of DT and agile simultaneously as incompatible, as traditional HCD spends a significant amount of time on field studies while the primary goal of agile is to be quick and iterative (da Silva et al., 2011). However, the same practitioners have preferred the DT approach instead of not using it after extensive testing (da Silva et al., 2011). Integrating the two models often leads to a better approximation of the end-user needs, improved quality, and product usability (Pereira & Russo, 2018).

The role of DT is to provide better products and services, productivity, and operational outcomes (Gruber et al., 2015). DT aims to deliver technically feasible, aesthetically pleasing, easy to use, and viable solutions from a business perspective that captures consumer benefits and business value (Brown, 2008; Memmel et al., 2007). Organizations can use several methods to empathize with or better understand their customers' perspectives through participatory design methods (Steen, 2012). For example, the design team can use ethnographic techniques such as contextual inquiry, where designers interview and observe the people during real tasks in their work (Holtzblatt & Beyer, 1993). The designers can utilize different tools such as personas that are mock creations representing their potential customer or user bases to understand their customers better (Pruitt & Grudin, 2003). In designing a service, designers can look at customer journeys where all stages of the service are analyzed to understand the different emotional triggers throughout the customer journey to better understand the customer experience (Segelström & Holmlid, 2011).

Low-fidelity sketches, wireframes, and prototypes are standard in testing a product, allowing users to try out mock set-ups of proposed finished products and offering feedback in a natural use-case environment (Memmel et al., 2007). Alternatively, the users' performance can be measured in a formal lab setting by measuring cognitive loads to estimate the ease of use (Oviatt, 2006). User stories are used to explain the product's end-use or, in agile, to evaluate the new features developed during Sprint from the end-user perspective (Dimitrijević et al., 2015)

In brief, DT helps in the creation of new products, processes, and services and can be used to innovate new solutions through human-centric approaches (Gruber et al., 2015). It goes beyond the socio-technical systems and frames issues from the perspective of the socio-cultural lens, delivering feasible, desirable, and viable solutions as a bottom-up user-centered process (Brown, 2008).

2.2.6 Objectives and Key Results

Objectives and Key Results (OKR) is a bottom-up iterative (strategic) management model based on quarterly objectives that are measured through respective key results (Doerr, 2018). As he explains, OKRs were first employed at Intel, from where they have spread to many other technology-related companies in Silicon Valley, such as Google, LinkedIn, Spotify, and Twitter. The goal of the OKR framework is to clarify the organization's overarching objectives by creating a structured approach to day-to-day management that is connected to the broader goals and strategy of the organization (Niven & Lamorte, 2016).

The OKR framework draws its influence from Drucker's (1954) Management by Objectives (MBO) strategic management model. As Drucker explains, MBO relies on mutually agreed-upon goals set by the management and different business units derived from the organization's broader business objectives. However, in practice, the objectives of the MBO were primarily done top-down by the management as opposed to mutually implemented by the organization as initially envisioned by Drucker (Doerr, 2018; Niven & Lamorte, 2016). The first OKRs bore the name "Intel Management by Objectives" (Doerr, 2018). Although OKR bears a significant resemblance to the MBO, OKR operates on an iterative quarterly or monthly basis where new Objectives are set within each iteration (Doerr, 2018). Moreover, unlike MBOs, OKRs tend to be publicly presented for greater organizational transparency and accountability and are not tied to any form of compensation to encourage ambitious stretch goals where people are allowed to fail (Doerr, 2018; Hämäläinen & Sora, 2020).

In practice, the OKR functions as follows: the organization sets three to five objectives for each iteration, forcing the organization to evaluate its most pressing issues (Doerr, 2018). The objectives are qualitative, and whether they are reached can be answered with a yes or no question (Hämäläinen & Sora, 2020). Key results, in turn, are quantitative but can also be bolstered with additional qualitative values or “quality goals” (Doerr, 2018). Each objective can be measured with 3-5 key results, which, when reached, will always lead to the attainment of the objective (Doerr, 2018). In an ideal setting, there will be a mix of top-down and bottom-up initiatives, and the teams can set their own key results that are aligned with the higher-level organizational objectives (Doerr, 2018; Niven & Lamorte, 2016) As Doerr (2018) explains, the purpose of key results is to guide the daily activities and align the activities with the broader organizational goals with more concrete terms. Similarly to Scrum, alongside the OKRs are weekly or biweekly check-ins or team-level meetings, reflections, and retrospectives at the end of the iteration (Doerr, 2018, Hämäläinen & Sora, 2020).

OKR is as much a cultural framework as it is a practical one. Many practices are directly tied to cultural outcomes encouraged as part of the framework. For instance, the transparency of the OKRs plays a significant role in building organizational accountability across teams (Doerr, 2018; Hämäläinen & Sora, 2020). As Doerr (2018) explains, transparency allows the person/team to say no to additional work, which helps maintain focus and enhances accountability by making all work and progress visible. Hämäläinen and Sora (2020) add that the transparency of goals can also motivate employees by making their work and progress towards goals more evident.

Transparency is significant in building organizational agility and strategic alignment (Doerr, 2018). He explains that when OKRs are visible across the organization, there is no need to cascade the OKRs across organizational levels slowly as different levels of the organization can quickly adjust and align their work to the common organizational goals. This type of transparency can also mean a form of honesty and building psychological safety across teams. To be radically transparent, teams need to be able to fully air criticisms, be willing to fail, and ask for help when they are struggling to reach their stretch goals (Doerr, 2018; Hämäläinen & Sora, 2020).

The lack of compensation for reaching the objectives encourage intrinsic motivations and prevents failure avoidance, preventing situations where employees become risk-averse or set too easy goals that they cannot fail (Doerr, 2018; Hämäläinen & Sora, 2020). As personal key results are often bottom-up and meant to motivate teams and individuals, using compensative goals that control behaviors can undermine intrinsic motivations defeating the purpose of personal goal setting (Deci et al., 1999; Deci & Ryan, 2017).

The OKR model should be seen as a complete organizational transformation effort rather than a new framework. Like Scrum and other agile frameworks, the change requires more than the mere adoption of surface-level tools and artifacts – it is a fundamental shift in how the organization approaches new issues from a structural and cultural perspective. As Doerr (2018) argues, the relationship between structure and culture is mutually reinforcing in OKR. He claims that without an appropriate culture, the organization will resist many necessary changes, such as radical transparency, accountability, and stretch goals, and the change will only be adopted superficially.

2.3 Organizational Culture

2.3.1 Defining organizational culture – generating a conceptual understanding

Authors and researchers alike have attempted to define organizational culture through the decades, but even in recent years, no clear consensus has been established (Chatman & O'Reilly, 2016). The lack of clear definition has led many leaders to dismiss the whole concept of culture as either a management fad or, due to overwhelming and conflicting information, misunderstanding or misjudging the concept entirely (Warrick, 2017). Despite this, recent surveys show that 91% of executives consider organizational culture important, 78% going as far as saying it lies in their top three or top five factors (Graham et al., 2017).

The most popular definition of organizational culture can be attributed to Edgar H. Schein. The definition is still generating significant interest as his three-layer culture model is still being studied and empirically evaluated (Hogan & Coote, 2014). His first definition of organizational culture is defined as follows (Schein, 1985, p. 17):

> "A pattern of shared basic assumptions that the group learned as it solved its problems of external adaptation and internal integration, that has worked well enough to be considered valid and, therefore, to be taught to new members as the correct way you perceive, think, and feel in relation to those problems."

A more recent definition of culture comes from the fifth edition of Schein's book, which provides "a dynamic definition of culture" (Schein & Schein, 2016, p. 21):

> "The culture of a group can be defined as the accumulated shared learning of that group as it solves its problems of external adaptation and internal integration; which has worked well enough to be considered valid and, therefore, to be taught to new members as the correct way to perceive, think, feel, and behave in relation to those problems. This accumulated learning is a pattern or system of beliefs, values, and behavioral norms that come to be taken for granted as basic assumptions and eventually drop out of awareness."

To understand culture, as Schein and Schein (2016) explain it, one must consider the group's history and actions that have worked as a solution toward the group's purpose. According to them, it is not enough that this solution has just occasionally worked, but that it continues to succeed in a way where it becomes a taken for granted belief and part of the core identity of "who we are and what we do" as an organization, constituting the most profound form of culture. He elaborates that culture can be understood with different depths and breadth as certain cultural factors are more visible to the outside observers than others. While Schein and Schein (2016) are hesitant to claim occupations can share culture, other authors argue that these rules, norms, values, and the more visible aspects of culture can take on a broader quality within specific fields or industries. For example, institutional theorists (e.g., DiMaggio & Powell, 1983; North, 1990; Scott, 2013) argue that the institutions provide continuation and stability of social forms across certain industries and history. Scott (2013) suggests that these institutions can constitute a set of values, traditions, norms, schemas, and identities for the organizations in the form of "the way things are done here."

Schein and Schein (2016) provide a three-level structure of culture: artifacts, espoused values and beliefs, and taken-for-granted underlying assumptions. At the top of the organizational culture are the cultural artifacts. The artifacts represent the most visible and tangible structures and processes to an outside observer; they are the behaviors that an outside observer might at first encounter without necessarily understanding the underlying reasons for the characterizations of these phenomena (Schein & Schein, 2016). For instance, culture can be observed in the basic behavioral interactions between people (Van Maanen & Schein, 1977). They claim that the language and behaviors that people use to assert themselves between one another and the rules that make up these social etiquettes within the organization and demeanor constitute a part of organizational culture. They explain these behaviors account for differences in behavioral responses one takes to recurring situations when one is socialized within a group. Thus, much can be learned about the culture when one is introduced to the ingroup of the organization. Often the first introduction happens when the new employee is shown the ropes of the organization so that they understand "how things are done here" (Van Maanen & Schein, 1977).

As part of the cultural artifacts, culture can be embodied in the shared practices and meanings by the group who can build their terminology or jargon to express concepts and ideas through the usage of tacit knowledge where knowledge is passed on from one generation to another without explicit written guidance in what Van Maanen and Schein (1977) call the "organizational socialization progress." At the surface level, language can provide an understanding of some of the cultural artifacts, but once understood, the tacit implications can offer a significant understanding of the underlying beliefs and history of the organization (Schein & Schein, 2016).

Cultural artifacts can also be more implicitly visualized through different symbols and aesthetical qualities, such as the buildings, layouts, design, and material artifacts the organization embodies (Buch & Wetzel, 2001). Organizational culture can also be attached to the rituals or celebrations that the organization takes on. It can come in the form of rites of "passage" by other members within the organization in celebratory events when certain milestones or important projects are reached (Deal & Kennedy, 1982). However, as artifacts only give a surface-level understanding of the organization, it is essential not to decipher or make assumptions about their meanings without understanding why things are the way they are (Schein & Schein, 2016).

At the second level of organizational culture exists the espoused values and beliefs of the organization (Schein & Schein, 2016). They explain that espoused values and beliefs are the historical artifacts of former leaders that still live on in the organization's approaches. They claim that when an organization faces an issue, espoused values are the initial responses to it. As they recognize, these responses have often been empirically validated and have stood the test of time by continuing to be a successful approach in different scenarios, turning them from a shared belief to a shared assumption.

The organization's espoused values and beliefs can be seen in its vision statements of what they value or ideally want to be (Deal & Kennedy, 1982). Many organizations articulate their core values built upon a shared agreement of beliefs. This can become a formal philosophy inside an organization where outlines are set through broader policies and ideological practices (Schein & Schein, 2016). Examples of such espoused values in agile organizations are the Netflix Culture Slides (Hastings, 2009), the Valve handbook for new employees (Valve, 2012), or even the Scrum Guide (Schwaber & Sutherland, 2020). Often, these types of statements indicate the "ideal state" of the organization and its formal philosophy (Schein & Schein, 2016). In other words, espoused values and beliefs show what the organizations would ideally want to be and what they would want others to think of them but may or may not be enacted in practice. These beliefs are also still consciously held as they form the guidelines for both normative action and the socialization of new group members (Schein & Schein, 2016; Van Maanen & Schein, 1977)

Sometimes the espoused values and beliefs coincide with what the organization is doing as it can reduce uncertainty, or the beliefs are untestable performance-wise (Schein & Schein, 2016). For instance, in a recent greenwashing scandal, Volkswagen claimed significantly lower emissions from its diesel engines and espoused values of being environmentally friendly, without enacting any actual change on a technical level apart from detection of when the engines are being tested to make it seem as if the emissions were lowered (Hotten, 2015; Siano et al., 2017). Bhakoo and Choi (2013) highlight that the decoupling between espoused values and beliefs and concrete actions can arise in technological organizations when organizations feel institutional pressures to adopt certain technologies but have no meaningful technical knowledge to address the change. As they argue, this can lead to decoupling administrative-level communications and technical core capabilities.

There are also cultural, moral, and aesthetic issues that cannot be empirically validated and are part of espoused values and beliefs (Schein & Schein, 2016). They highlight that these values come to fruition when the organization members start mutually reinforcing them. Anyone who does not follow these values or beliefs risks being kicked out of the group or ostracized. As they explain, these values are generated by leaders of the organization, and their functionality is measured by how much comfort they bring to the organizational members instead of measurable performance.

Once something that was first a solution keeps succeeding, and the original manifestations are entirely disjointed from their roots as generations pass, the solution becomes a taken-for-granted belief, which is the deepest level of culture (Schein & Schein, 2016). They argue that while the espoused values can still be questioned, the taken-for-granted beliefs represent a form of structure and stability in one's life that can become so foundational that simply questioning these beliefs becomes inconceivable. These beliefs become so foundational that people might start to act as if they were objectively true. These implicit and unspoken rules, norms, values, and taken-for-granted beliefs constitute part of the organizational culture and are much harder to notice at first (Groysberg et al., 2018; Rousseau, 1990; Schein & Schein, 2016). At this level, culture provides a basic sense of identity for those working within the organization and basic guidelines for behavior (Schein & Schein, 2016). They describe that these beliefs are often so deeply ingrained that if someone does not behave according to the same logic or beliefs, the result can be disorienting and confusing as there is a substantial risk of misinterpreting others' actions. For instance, significant differences can arise between macro-cultures where the basic assumptions differ widely (Hofstede, 2001).

Taken-for-granted basic assumptions can be differentiated from the espoused values and beliefs by the fact that they become all but invisible while actively guiding organizational behaviors (Schein & Schein, 2016). As they elaborate, taken-for-granted assumptions are generally shared by everyone within the organization or group, and there is little variation in their interpretation or application. While espoused values and beliefs are visible and can still be actively questioned, taken-for-granted beliefs become invisible, schema-like behaviors that can be effortlessly followed and represent a form of everyday sensemaking processes operating below conscious behaviors (Levy et al., 2006; Schein & Schein, 2016). For instance, when faced with novel situations, taken-for-granted assumptions help individuals and organizational actors reorient themselves quickly through automatic, top-down behavioral responses or make apriori predictions based on underlying belief structures (Detert & Edmondson, 2011; Levy et al., 2006)

Changing such beliefs within an organization can therefore become incredibly complex. Argyris (1995) describes this as the distinguishing factor between the “espoused beliefs” and the “theory-in-use.” They claim that as people are unaware that they are espousing and using different theories in action, it can lead to very defensive routines that become strongest, especially when specific issues are considered embarrassing or threatening to core beliefs. Changing these beliefs would require what Argyris (1995) describes as double-loop learning of questioning the operating norms instead of following the existing ones (single-loop learning) to take appropriate action. He argues that it requires the individual members and the whole organization to take an active questioning stance that encourages inquiry and avoids defensive postures.

As organizational culture is pervasive and cuts through the whole organization, taken-for-granted cultural beliefs function as an integrative element that helps people make sense of their organization and its surroundings (Schein & Schein, 2016). They claim that culture binds the distinct cultural artifacts, rituals, and behaviors into clearer patterns to make our surroundings more sensible. Culture affects all parts of the organization, it cannot be separated from certain organizational actions or goals such as strategy or structure, and it is more likely that if culture is ignored, it will start controlling the organization itself (Schein & Schein, 2016; Warrick, 2017). The proposed functioning of the culture is therefore dialectical. Culture is affected by both the employees and especially the leaders of the organization, but it also sets the acceptable boundaries for action and shapes how the organization can and should be led (Endrissat & von Arx, 2013; Schein & Schein, 2016)

2.3.2 Defining agile culture

Agile culture can be seen as an amalgamation of many practices that have inspired it. Inspirations can be found from the early adhocracy-based organizations, Japanese production processes and the practices they inspired, and the software development-based macro-culture where it was formed (Larman & Basili, 2003; Moran, 2016; Maximini, 2018; Tolfo et al., 2009). From the descriptions of the various agile methodologies and principles, one can start to get a feeling of what an agile culture might look like. Many agile frameworks have built-in cultural principles, such as a strong emphasis on self-managing teams and autonomy (Schwaber & Sutherland, 2020) and lean’s emphasis on continuous improvement and learning (Manos, 2007).

Maximini (2018) elaborates on the surface-level artifacts of the agile culture. He describes what you are likely to encounter as you walk into an “agile office” or workspace; there is a significantly more relaxed atmosphere as most people are dressed casually instead of formalwear like ties and suits, which are ignored. He depicts a working environment where every space is individual rather than uniform and how people might sit on special chairs or inflatable balls. Moreover, he explains how the office lounge might often house coffee machines or even table soccer or video games. The spaces are highly rearrangeable, allowing for the formation of teams and teamwork on the fly, along with smaller quiet areas for individual work (Mishra et al., 2012). The walls are covered with information, sticky notes, flipcharts, and whiteboards, as the space is built to support creativity and teamwork (Cockburn, 2006). Though agile and Scrum favor face-to-face communications, Maximini (2018) explains that these spaces are often supported by large video-conferencing monitors and capabilities with cameras and headphones for open communication.

The structures of the organization will reflect the culture of the organization. Thus, decision-making is done at the lowest possible level within the teams or at most at the managerial level of the broader product line (Maximini, 2018). Other aspects that directly reflect this are the core policies of Scrum, such as the daily stand-ups, Sprint Planning events, and Product Backlogs (Moran, 2016). While this does not yet explain agile culture, the description is reminiscent of smaller trendy start-up companies. In this way, the environment, space, and artifacts reflect those values of agile. Being nimble and agile like a start-up company where one has the autonomy and the freedom to work as if they were working within a smaller company. Similarly, the work and the projects placed on the walls are part of the value of transparency crucial for agile (Cohn, 2004; Kniberg & Skarin, 2010).

According to Moran (2016), at the level of espoused values and beliefs, agile culture is reflected by many of the agile principles such as self-organization, continuous improvement, feedback, trust, openness and collaboration, and continuous learning. Maximini (2018) elaborates that in a truly agile organization that follows agile culture, structures exist to reward people for their openness and honesty. For example, he suggests that if someone disagrees with another person, they must be able to do so openly and immediately, even in front of a broader audience, respectfully to all parties, which promotes both direct feedback and transparency of agile. These are reflective of the broader values of psychological safety and open discourse that are critical to agile (Maximini, 2018; Moran, 2016)

At the deepest level of agile, the most invisible basic assumptions come to life. These principles and practices of agile have become tried and true over time throughout the organization's history or simply built-in from the company's inception (Schein & Schein, 2016). Tolfo et al. (2009) elaborate on this cultural level, noting how the basic assumptions of shared ownership, personal responsibility, cooperation, continuous learning, and proactivity come to life. Moreover, basic unspoken and deeply embedded ideas that agile is historically built upon become prevalent at the level of basic assumptions. Concepts such as social complexity, poorly definable “wicked problems,” and social construction of reality that are embedded in the utilization of concepts such as “wisdom of the crowds” are often unspoken or unrecognized but vital for the functionality of agile (Conklin, 2006; Moran, 2016; Surowiecki, 2004). Whereas previous waterfall-based models were built upon the assumptions of stable reality, positivism, and strict planning and control, agile assumes a more significant emergence of possibilities and continuous change (Sommerville, 2016). Moreover, as Schein and Schein (2016) note, at this level, many contextual and cultural factors such as the organization's geographical location might affect the basic assumption as different countries have vastly different cultures that people are embedded in.

Table 1: Agile culture at different levels. Adopted from (Conklin, 2006; Kniberg & Skarin, 2010; Maximini, 2018; Mintzberg et al., 1998; Moran, 2016; Nerur & Balijepally, 2007; Schein & Schein, 2016; Tolfo et al., 2009)

Level	Description	Agile Example
Artifacts	All visible and tangible structures and processes to an outside observer (Clothing, style), documents, observable rituals, and ceremonies	Casual clothing, work embedded on the walls (Kanban), low hierarchy, diverse teams, continuous integration, iterative development, incremental development, daily scrum, scrum of
Espoused Values and Beliefs	A shared understanding of previously successful practices as well as cultural, moral, and aesthetic issues that cannot be empirically validated	Twelve Principles of the Agile Manifesto, open feedback, self-organization, trust, openness, communication, and collaboration
Basic Assumptions	Those values and beliefs that have been reliably validated over time and have thus become so deeply embedded into the core beliefs that they have become taken for granted	Taking personal responsibility, openly embracing change and continuous learning, the importance of communication and collaboration, social complexity and wicked problems, social emergence

More broadly, organizational agility can be viewed through Cameron and Quinn's (2006) competing values framework. In their framework, organizations are divided into four quadrants in the framework based on two dimensions. The flexibility and discretion vs. stability and control dimensions on the horizontal axis describe organizational dynamism and dynamic capabilities through which organizations can react to the external environment vs. the optimization and control of production, creating value. Internal vs. external focus on the vertical axis looks at organizations' focus internally (for example, maintenance, and HR) vs. external market dynamics through competition, differentiation, and rivalry.

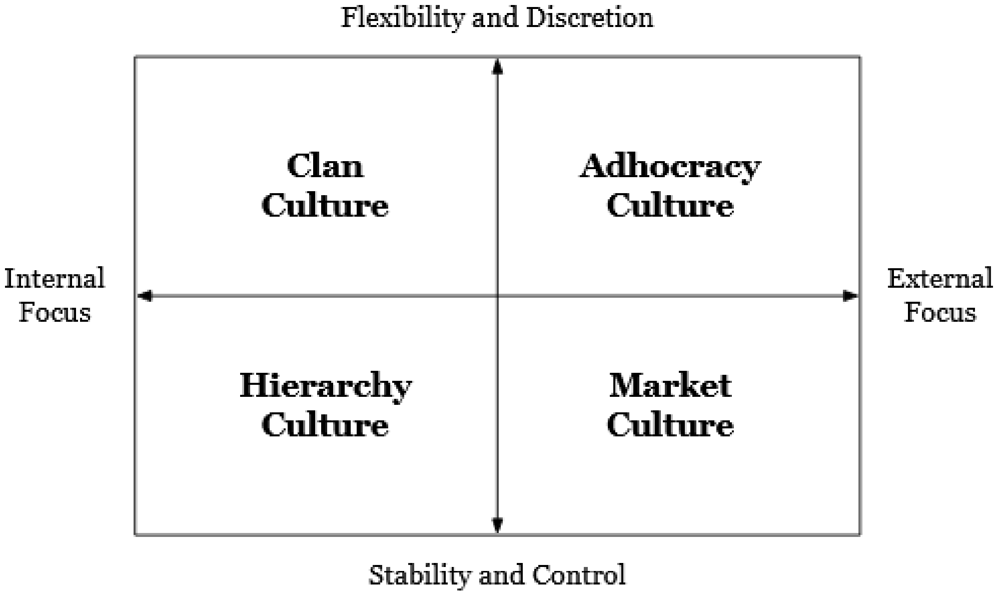

Figure 2: Competing Values Framework (Cameron & Quinn, 2006).

In their study, Felipe et al. (2017) found that the organizations that could be classified under the “adhocracy culture” are most positively correlated with organizational agility. As they explain, due to cultural values, organizations with an adhocracy culture often operate in highly dynamic environments, continuously scouting for new opportunities. These organizations are often associated with innovativeness, continuous change, and the capability to reconfigure existing capabilities, making them effective in organizational agility (Felipe et al., 2017; Iivari & Iivari, 2011).

The origins of organizational adhocracy are often associated with structural adhocracy, popularized by Mintzberg (1979). As he explains, structural adhocracy consists of a highly organic organizational structure of small multidisciplinary ad hoc teams with highly skilled individuals. Mintzberg (1979) elaborates that these organizations have selectively decentralized power structures based on one’s available knowledge and information to bolster flexibility, creativity, and innovation. They provide examples of organizations such as NASA, electronics production, and movie production. In many ways, the structural adhocracy described by the authors is an early precedent to modern agile, although the team structures tend to be more stable (Gren et al., 2017; Mintzberg et al., 1998).

Agile principles are not just a methodology separate from the culture (Sahota, 2012). Agile principles give direct outlines or guidance about core beliefs and principles of agile, making agile practices profoundly embedded within the culture (Sahota, 2012). If the previous organizational culture is vastly different from an agile culture, it can make the adoption of agile difficult, if not impossible, as the basic assumptions about organizational culture are exceedingly difficult to change (Sahota, 2012; Schein & Schein, 2016).

2.4 Aligning artifacts in agile culture

Organizational artifacts refer to observable behaviors, tools, structures, and processes representing organizational culture's most visible and tangential aspects (Schein & Schein, 2016). In agile culture, artifacts that support organizational operations include agile’s cell-based structures built upon small independent cross-collaborative teams (de Sitter et al., 1997; Kniberg & Ivarsson, 2012; van Amelsvoort & Hootegem, 2017). The use of physical and digital artifacts and physical co-location to bolster efficient communications and minimize extensive documentation (Cockburn 2002, 2006; Cohn, 2002; Sharp, 2007, 2009; Deshpande et al., 2016). Common yet flexible routines, processes, and leadership practices that strengthen core values and principles of agile (Aghina et al., 2015; Cadieux & Heyn, 2018; Dikert et al., 2016; Holtzhausen and de Klerk, 2018; Paasivaara et al., 2018; Schwaber & Sutherland, 2020) and a strategy that is aligned with the organizational culture based on organizational ambidexterity and iterative strategy creation such as OKRs (Aghina et al., 2015; Comella-Dorda, 2020; Doerr, 2018; O’Reilly & Tushman, 2008)

2.4.1 Agile organizational structure

Complex large-scale organizational environments have been traditionally controlled through hierarchical management and strong standardization (Barlow et al., 2011). However, agile practices require a new type of modified cell structure that allows teams and units to solve problems independently without being tied to the rest of the organization or other projects while retaining open channels of communication (Bernstein et al., 2016; de Sitter et al., 1997; Kniberg & Ivarsson, 2012; van Amelsvoort & Hootegem, 2017).

The hierarchical management style dates back to the initial conceptions of scientific management (Taylor, 1911), common in Western and Northern Europe due to the significant post-war industrial growth (den Hertog, 1977). The same period saw an improvement in education, leading to a growing gap between employee skills and ambitions and the highly repetitive tasks that significantly lowered the quality of work and increased absenteeism (den Hertog, 1977). These frustrations grew into the legacy of work design, and sociotechnical systems design (STSD) approaches (Emery & Thorsrud, 1969) that were comparable to modern day agile organizational structures.

In gradual structural transformations, large-scale agile organizations suffer from interdependencies between the organization and the individual agile teams that have been transformed (Lindvall et al., 2004; Mikalsen et al., 2019; van Amelsvoort & Hootegem, 2017). As Lindvall et al. (2004) discovered, during a structural transformation in a large-scale agile organization, many of the agile teams in the early pilot were still tied to the rest of the hierarchical structures, projects, and teams within the organization, not allowing them to truly become agile. They concluded by stating: "in a large organization, a project cannot be truly independent" (Lindvall et al., 2004, p. 5).

It is not enough for a large complex organization to have a small number of seemingly autonomous teams if the organizational control structures do not enable the teams to be independent of the rest of the organization (Mikalsen et al., 2019). These issues have been highlighted, especially in large-scale agile, where coordination with other teams and synchronization of projects cause significant difficulties (Sekitoleko et al., 2014). Lack of inter-team coordination and communication can also have other second-hand issues such as subcultures inside individual teams creating an "us" vs. "them" culture, increasing distrust between the teams (Hansen & Baggesen, 2009); overlapping work between the agile teams (Lee, 2008); losing sight of the bigger picture of the project when working on individual parts (Farrow & Greene, 2008); and in planning team-level work due to interdependencies with between teams (Sekitoleko et al., 2014).

Theoretically, as de Sitter et al. (1997, p. 498) suggest, there is a seemingly simple solution: "creating simple organizations and complex jobs." According to the authors, an organization can lower interdependencies through organizational design measures and by minimizing the number of disturbances (i.e., unplanned events) between the teams that originate from the poor organizational structure. They define these unplanned events (external variance) as events that include actors outside the task. In agile software development, these unplanned events are often called "technical dependencies" that can happen due to overlapping priorities, the unpredictability of the processes, and overlapping release cycles (Babinet & Ramanathan, 2008)

To minimize internal dependency and external variance, the organization must account for its production structure (the operational work) and control structure (managing the operational work) (de Sitter, 1997). To improve the production structure, work must be parallelized. As van Amelsvoort and Hootegem (2017) explain, parallel processing organizations must identify customer families by putting them into homogenous customer groups based on strategic demands and creating parallel work processes for each customer subtype. The authors suggest this will support autonomous teamwork, as the work can be performed in teams independently of other teams, lowering the number of interdependencies.

The product and control structures rely entirely on one another in a large-scale agile organization. As highlighted by Mikalsen et al. (2019) case study, without reducing the complexity of the production structure, the autonomous teams will require help from one another and cannot be truly independent. Similarly, even if the production structure is simplified and the teams work in smaller parallel units, if the teams do not have the autonomy to make decisions, they will still be dependent on the hierarchical structures of the organization (de Sitter et al., 1997).

In practice, the organizational structure might resemble what Maximini (2018) call an "agile cell," closely resembling Spotify-style agile "tribes" (Kniberg & Ivarsson, 2012), Zappos' holacracy structure (Bernstein et al., 2016), or as previously known in STSD "sociocracy" (Amelsvoort & Hootegem, 2017). The typical team size for the "cells" is at most 150 people (Maximini, 2018). Within the cells, there are smaller cells that make up the agile teams. As Maximini (2018) explains, each cell is meant to be independent, working on its products with smaller central support functions. Therefore, each cell will include all the necessary functions such as sales, management, finance, and other essential operatives on top of developers. The cells communicate and collaborate with a top management team, ensuring a broader organizational strategy and vision (Maximini, 2018).

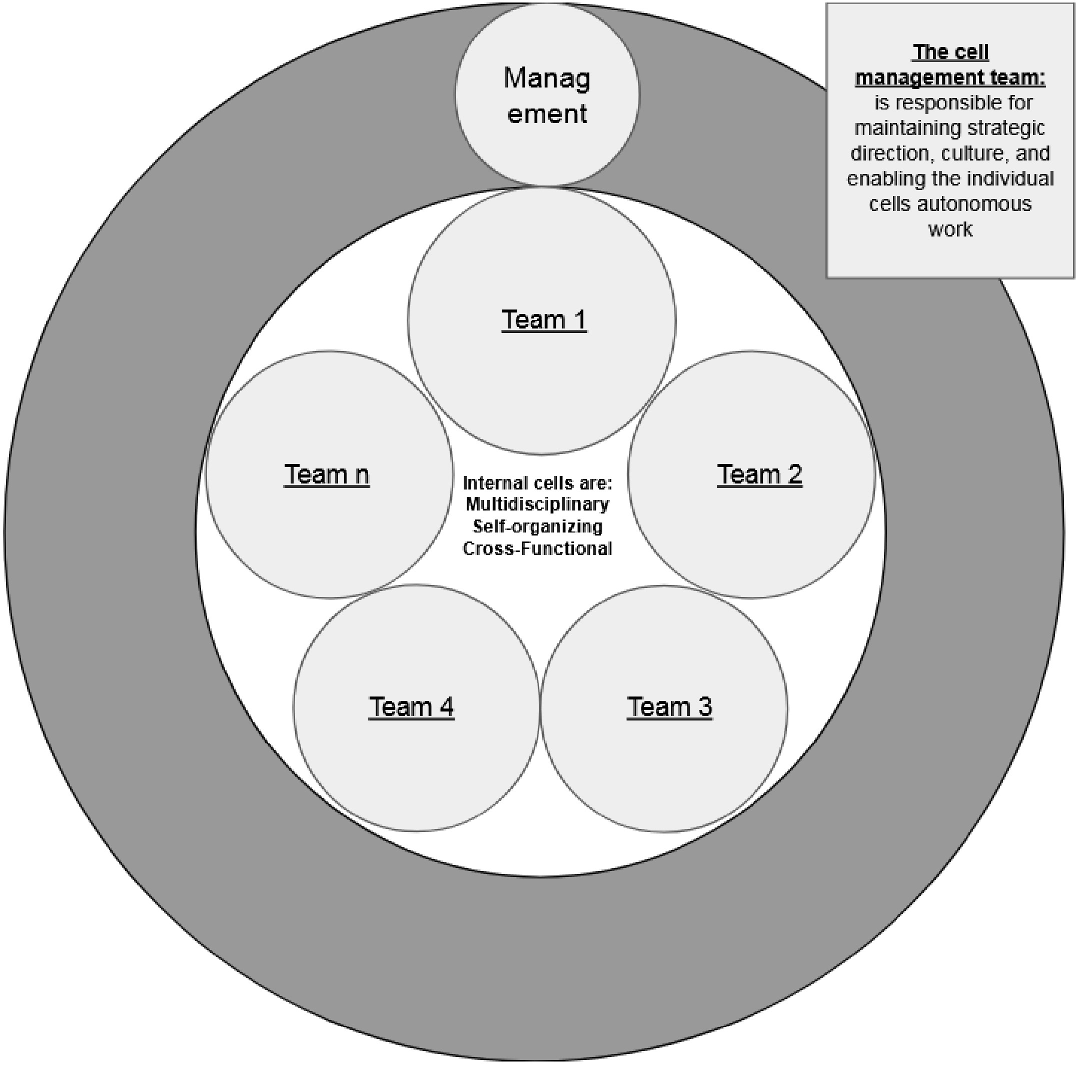
Manag
ement
The cell management team:
is responsible for maintaining strategic direction, culture, and enabling the individual cells autonomous work
Team 1
Team n
Internal cells are:
Multidisciplinary
Self-organizing
Cross-Functional
Team 2
Team 4
Team 3

Figure 3: Example of an agile cell (Maximini, 2018).

As the cells are autonomous, it allows the organization to remove any significant interdependencies between the teams that could inhibit the cells' work functions and prevent them from achieving autonomy (Maximini, 2018). Kniberg and Ivarsson (2012) explain that Spotify deliberately works toward eliminating dependencies between teams that might be blocking or slowing down functions. As they state, sometimes Spotify might reorganize the teams, reprioritize the functions or even change the technical solutions to prevent these dependencies.

From the perspective of organizational dependencies and maintaining “agile-like” team autonomy without bureaucracy, the cell-based structure is considered the most efficient (Mikalsen et al., 2019). However, as some authors have found, the cell-based organization is exceedingly difficult to apply in practice compared to more organized and bureaucratic models such as the Scaled Agile Framework (SAFe) (Bass & Salameh, 2020; Conboy & Carroll, 2019). The choice between any two approaches is a trade-off between complexity and organizations’ ambitions of autonomy, which depends on the operating context and need for adaptability and response rates (Bernstein et al., 2016).

Large organizations' scale and compartmentalized structure can lead to different subcultures within separate teams or business units, which can cause difficulties in the diffusion and integration of agile practices across the organization (Hansen & Baggesen, 2009; Schein & Schein, 2016). As Schein and Schein (2016) explain when organizations grow and mature, they develop subcultures based on occupational cultures that can differ drastically even in their basic beliefs and assumptions. These differences occur when people with different core personality traits show preference toward distinct occupations, along with education and socialization into specific professions leading them to adopt different beliefs (Van Maanen & Schein, 1977). When people are introduced and socialized into a new organizational culture, they bring prior cultural assumptions from their previous education and occupations to the new organization forming subgroups and subsequent subcultures (Van Maanen & Barley, 1982).

The incompatibility of subcultures can make alignment especially difficult in large and mature organizations if not recognized by top management. Issues have been found in integrating marketing and sales (Abdelnour-Nocera & Sharp, 2007; Maples, 2009; Rodríguez et al., 2013), human resources (Rodríguez et al., 2013), and finance (Maples, 2009), meaning integration is not explicitly limited to any specific area of the organization. Dikert et al. (2016) reported that the unwillingness of other functions to adopt agile was the most reported issue in large-scale agile transformations, found in 31% of studied cases.

One way to culturally align an organization that has been split into smaller teams is through building communities of practice. Communities of practice represent like-minded individuals working in separate agile teams across the organization (Barton et al., 2018). People want to discuss with like-minded individuals who might be assigned the same tasks or use the same tools for the said task (Cohn, 2010). As he explains, building communities of practice can happen through top-down formal or informal means. The communities of practice exist to incentivize information sharing not just within the teams but also across the teams through informal means as well as a tool for the dissemination of formal and tacit knowledge and the sharing of best practices (Aghina et al., 2018; Barton et al., 2018; Cohn, 2010). For instance, Kniberg and Ivarsson (2012) report how Spotify uses what they call "Chapters" and "Guilds." As they explain, chapters are the people who work within the same "cell" or "tribe" and share the same competencies and interests, while guilds are made of people across the organization who can share an even broader set of knowledge, tools, and best practices across the organization. According to them, this helps Spotify retain the benefits of scale and creates cohesion and alignment within the organization while the teams and occupations are part-separated.

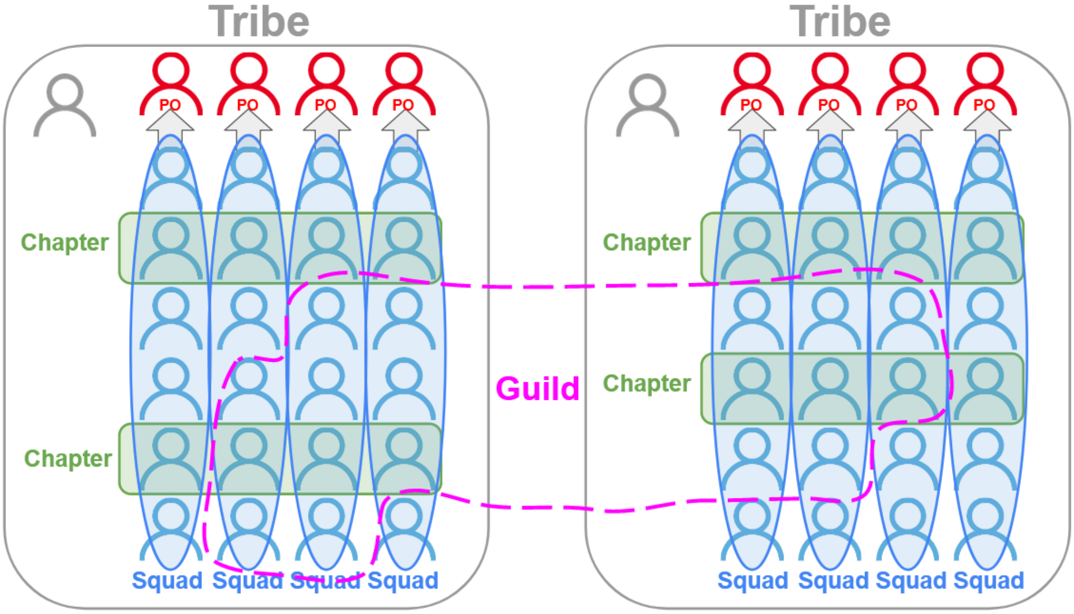

Figure 4: Guild- and chapter structure between cells (here: tribes) at Spotify (Kniberg & Ivarsson, 2012)

This way, the organizational structuring in agile practice must balance two separate needs: (1) creating an independent team and unit-level structures that can solve problems independently (Bernstein et al., 2016; de Sitter et al., 1997; van Amelsvoort & Hootegem, 2017); (2) while maintaining cross-team and cross-unit collaboration and coordination through active communications and communities of practice to prevent siloing and misalignment of subcultures (Aghina et al., 2018; Kniberg & Ivarsson, 2012; Schein & Schein, 2016).

2.4.2 Physical and digital artifacts in agile culture

Since its inception, physical space and physicality have played a significant role in agile. While remote work is possible in agile, it was envisioned to be done with developers and customers, all working in a shared physical space (Cockburn, 2002). He explains that the physicality of the work displayed was meant to counteract the previously extensive documentation seen in the plan-driven development processes and bring more transparency to work.

Sharp (2007) describes agile teams' usage of "the wall." In agile the wall is used for information delivery through physical space to organize and deliver information through user stories (product requirements) captured on story cards or other artifacts such as Kanban boards (Kniberg & Skarin, 2010; Sharp, 2007). User stories are often product features, written from the users' perspective to generate user-focused features (Sharp, 2007). The wall and the following cards and boards are often located in visible locations where they become communication and information tools (Beck, 2000; Kniberg & Skarin, 2010; Sharp, 2007). As Beck (2000, p. 39) states: "An interested observer should be able to walk into the team space and get the general idea of how the project is going in fifteen seconds." In this way, the wall functions as an "information radiator" that provides continuously changing information to a passerby even with a glance (Cockburn, 2006).

Affinity diagrams are also commonly used by organizing smaller strips of paper or post-it notes spread around the working areas or walls (Holtzblatt & Beyer, 1993). These notes are often not just randomly placed there but can be color-coded and grouped to make the visual information more easily understood at a glance (Holtzblatt & Beyer, 1993; Sharp, 2007). Other tools often function with similar visual clarity and "information radiator" mindset. For instance, the numerous whiteboards or flip tables used in many organizations (Sharp, 2007). Sharp et al. (2009, p. 115) express the usage of physical artifacts: "The physical nature of these artifacts facilitates their two main purposes – enabling a shared understanding of requirements and supporting the development process itself."

Akin to the discussed "wall" and information radiators, the Obeya room allows for a quick understanding of managerial planning and processes and can be used to facilitate discussions between teams. The Obeya is an immersive space filled with information that can function as a room for co-located working space for all the functions or a meeting room where all the unit leaders meet to discuss collaborative work, as was done at Toyota (Morgan & Liker, 2006). Like information radiators, the primary purpose of Obeva is the immediate dissemination of information, which reduces the amount of repetition and increases transparency (Aasland & Blankenburg, 2012).

Digital artifacts have been studied at length from their early onset. Luff et al. (1992) state that physical artifacts are often used for information and coordination of social action in collaborative co-located activities. These findings are supported by (Deshpande et al., 2016), where physical artifacts were often used subtly to support communication and collaboration efforts. In their research, people often use physical artifacts (e.g., affinity diagrams, storyboards) to aid their actions and communicate during meetings.

Furthermore, Whittaker and Schwarz (1999) and later Deshpande et al. (2016) found that even with the adoption of digital tools, the usage of physical artifacts remains common, especially in collaborative tasks. Whittaker and Schwarz (1999) found that the physical medium lends itself much easier to physical displays that complement communications and help collaboration, unlike digital tools. In addition, the convenience of the physical information radiators makes them so popular: "Hallways qualify very nicely as good places for information radiators. Web pages don't. Accessing web pages costs most people more effort than they are willing to expend, and so the information stays hidden" (Cockburn, 2006, p. 76).

While successful distributed agile teams have been reported at least on a smaller scale, with the benefits of the agile present (Sharp et al., 2012), there are often drawbacks. Distributed teams often suffer from poor communication, lack of team cohesion, and knowledge distribution, and if the teams are geographically distributed, unavailability issues are common (Paasivaara et al., 2008). The authors add that to build relationships with distributed teams, teams might often have to travel to meet face-to-face for key events such as the first iteration to build and maintain collaborative relationships for effective teamwork practices.

In hybrid settings, issues are similarly present for employees that are not physically in the office. Deshpande et al. (2016) studied a case organization working under a hybrid agile model with part of the employees working remotely while the other part was co-located. Their findings showed that the digital artifacts were sufficient for formal communications and exchanging the necessary knowledge for the distributed employees to do the required work. However, the authors noted that informal discussions, social cues, interpersonal familiarity, response times, and general awareness of the "vibe" within the physical office space were often an anomaly to those not physically present. Furthermore, the authors found that the employees working remotely missed the dispersion of informal information about the projects and tacit knowledge.

Physical and virtual artifacts in agile have a multifaceted purpose that often goes beyond their expected use. Physical artifacts do not simply exist for the convenience of personal work but facilitate communication and transparency of work (Aghina, 2018; Cockburn, 2006; Sharp, 2007). Artifacts help coordinate tasks when work status can be communicated in seconds (Cockburn, 2006). Moreover, transparency increases trust between the team members when everything is out in the open (McHugh, 2011; Kniberg & Ivarsson, 2012), facilitating cohesion and better teamwork (Edmondson & Lei, 2014).

2.4.3 Routines and processes in agile culture

Agile processes can take two main approaches, strictly by the book or a modified pick-and-choose "toolbox" approach, a choice that can significantly impact the successful application of agile practices (Gustavsson, 2021; Paasivaara et al., 2018). Although Schwaber and Sutherland (2020) insist that without complete adherence to the Scrum methodology, the result is not Scrum, organizations use significant situational modifications, especially in large-scale agile adaptations. Jalali and Wohlin (2012) studied large-scale global software engineering companies and found that most organizations used modified and customized agile practices. The authors explain that the modifications were motivated by overlapping requirements, distribution type, and other situational requirements of the project. Moreover, they found that many organizations selectively used mixed methods from different practices such as XP and Scrum, claiming it to be one or the other.

Gustavsson (2021) studied two large-scale agile transformations utilizing SAFe. He describes how most organizations can be divided into a dichotomy. One of the approaches he explains is the "agile rulebook logic," where proper agile implementation is the strictest possible adherence to agile. They explain how the "agile coaches were competing with each other regarding who knew the details of the framework best, rather than discussing possible tailoring or if some things could be discarded" (Gustavsson, 2021, p. 16). According to him, many employees expressed frustrations with this approach and how the new framework, contrary to its intentions, limited their autonomy as they could not freely choose their methods and ended with additional work due to the detailed practices. Iivari and Iivari (2011) explain that the previous culture of the organization might affect how the agile principles and methodology are applied in practice. They argue that organizations with a hierarchical culture are more likely to combine features from different practices (such as XP and Scrum), making the combined models heavier.

Organizations enforcing stricter routines often fear letting go of previous routines, increasing the total work the teams must accomplish (Dikert et al., 2016; Hoda & Noble, 2017; Pikkarainen, 2012). Even in organizations with firmly established Scrum practices, Holtzhausen and de Klerk (2018) found, against their expectations, a negative correlation between strict adherence to "purity of Scrum" and team-level performance. Marchenko and Abrahamsson (2008) explain that the push from the Scrum-master or management towards "the correct" implementation could paradoxically undermine some of the agile principles such as self-organization and autonomy.

Gustavsson (2021) calls the other approach agile toolbox logic. As the name implies, this approach is more akin to the idea of picking the ideal methods and tailoring the agile approach depending on the contextual needs. In the second organization studied by Gustavsson (2021), the organization adopted the toolbox approach, which resulted in better results. He explains that while some employees expressed frustrations with too many meetings and insufficient tailoring, most employees felt more motivated, less stressed, and had fewer interferences of work due to the adoption of SAFe.

Issues with inconsistent processes and practices are still a highly common issue in agile adoption (Digital.ai, 2021). Authors such as Paasivaara et al. (2018) have expressed that organizations can run into issues in large-scale agile implementation if there is not at least a common agile framework applied throughout the organization, which toolbox-type approaches could discourage. Therefore the correct approach could be found through a middle-ground approach by adopting a common agile framework from the onset that is spread across the organization with a stepwise delivery that helps the adoption of new routines (Aghina et al., 2015; Cadieux & Heyn, 2018; Dikert et al., 2016; Paasivaara et al., 2018). For example, Cadieux and Heyn (2018) reported that the agile transformation at Zalando was built on three core pillars of "Radical agility" that formed the stable backbone for operations, providing much-needed clarity for decision-making. Similarly, Paasivaara et al. (2018) expressed that many Ericsson employees reported that their work coordination became significantly easier after adopting common practices in how they worked. Aghina et al. (2015) argue that the stable backbone of the structure, governance, and processes can enable organizational flexibility through clarity, lower interdependencies, and fewer misunderstandings.

2.4.4 Processes that enable psychological safety in agile culture

As the role of communications is central in agile (Hummel et al., 2013; Melnik & Maurer, 2006), creating the conditions of psychological safety is vital in the process of agile as it precedes and enables open communications across the organization (Duhigg, 2016; Edmondson, 1999; Edmondson & Lei, 2014). The concept of psychological safety is simple yet powerful: "Psychological safety describes perceptions of the consequences of taking interpersonal risks in a particular context, such as a workplace" (Edmondson & Lei, 2014, p. 23). According to the authors, the role of psychological safety comes down to the individuals' ability to speak up and challenge most strongly held beliefs without facing criticism or fear of being reprimanded. These feelings can come in many forms, including those with power and status above us, peers, and subordinates (Edmondson, 2002). She explains that individuals might feel afraid of being seen as ignorant by others, wasting time, or being disruptive among their peers or subordinates. She states that, especially in high-risk contexts, asking questions or admitting mistakes runs the risk of being seen as incompetent and dangerous, though contradictorily, these questions could prevent physical risks in high-risk industries.

The lack of fear allows people to express themselves and their ideas more freely, openly communicate and challenge poorly perceived ideas, which helps people to be happier and more engaged at work (Edmondson & Lei, 2014). On an organizational level, psychological safety enables employeremployee relationships, motivates employees, and improves flexibility (Collins & Smith, 2006). Furthermore, better relationships enable better communication which mediates organizational learning capabilities (Carmeli et al., 2009). The authors claim this leads to better creativity, proactivity, and knowledge sharing, leading to significantly better organizational learning and performance.

The environment of psychological safety does not emerge naturally; instead, it must be consciously worked towards by the management and the teams themselves (Edmondson & Lei, 2014). Psychological safety can be so fragile that even within an organization with a strong culture of perceived psychological safety, the feeling of safety of speaking up, giving feedback, or asking for help can vary significantly between departments or individual teams (Edmondson, 2002). Thus, making an organization psychologically safe becomes an essential responsibility for every employee.

At the organizational level, commitment-based HR practices that facilitate long-term exchange relationships create a social climate of trust and are strongly associated with psychological safety (Collins and Smith, 2006). As the authors explain, the practices commonly include assessing person-organization fit rather than specific job fit; team-level training and performance assessments that promote long-term commitment through collective growth and team building; and compensation practices that focus on group and firm-level performance indicators. These practices aim to build a more collective-level interest that is aligned with the team- and organizational-level interests instead of the individual (Collins & Smith, 2006).

However, psychological safety is most consistently considered a group-level phenomenon (Edmondson & Lei, 2014), which is the most critical level of analysis for agile methods. The authors found that psychological safety improves team performance and creativity. When teams are more willing to take risks, learn from failures, disagree but recover easier from conflicts, trust each other, and communicate more openly.

Managers can support these behaviors by enabling second-order learning (Edmondson, 2002). Acording to her employees who notice an issue are often encouraged to fix problems independently without notifying anyone, which can hide the underlying issues if not brought up. However, in second-order learning proposed by Edmondson, employees are encouraged to actively speak up about issues in day-to-day practices (within reason so as not to interfere with active work) to enable organizational learning. She suggests that managers and team leaders (such as Scrum Master) should not be chosen based purely on technical expertise, as the person might not have the interpersonal skills to encourage every team member to participate by providing input, feedback, and ideas. She explains that this is important as leaders can also facilitate conversations by empowering the less socially extroverted people to speak up while minimizing the domineering tendencies of outwardly spoken employees. Leaders can provide examples of admitting and acknowledging fallibility and their failures, demonstrating to the rest of the team that it is okay to fail and desirable to speak up when one makes a mistake (Gabarro, 1990).

Like individual learning, collective learning relies on iterative processes that utilize the Argyris (1995) double-loop learning process. This kind of reflection can only happen if it is enabled on a team level and the teams have the self-awareness and agency to do so (West, 2000). Edmondson (2002, p. 14) highlights the questions the team should ask themselves: “What are we learning? What can we do better? What should we change?” Teams can further motivate learning behaviors through shared learning goals (Edmondson, 2002). As she explains, these goals must be clearly defined and understood by the whole team and set so that they are both meaningful and sufficiently challenging enough but not so complicated that it is unreachable, causing feelings of helplessness.

At the level of practice, psychological safety is necessary for open communications (Duhigg, 2016; Edmondson, 1999; Edmondson & Lei, 2014), healthy management culture (Edmondson, 2002; Gabarro, 1990; Nembhard & Edmondson, 2006), and organizational learning (Edmondson, 2002). It is deeply tied to managerial behaviors and inclusiveness (Gabarro, 1990; Nembhard & Edmondson, 2006) and commitment-based HR practices that encourage organization-level collaboration, enhancing trust (Collins & Smith, 2006), making it essential for agile (McHugh et al., 2011). The most significant role in improving psychological safety lies within healthy management and leadership practices that can serve as examples for employees and have cascading effects through citizenship behaviors (Collins & Smith, 2006; Edmondson, 2002; Schein & Schein, 2016).

2.4.5 Leadership practices in agile culture

Leadership practices in agile must support the lower-level employees' autonomy and the middle-management layers impacted by the changes. As Dikert et al. (2016) recognized, if middle management's role is not made clear post-transformation, managers can become hesitant and resist the change as they might feel their organizational roles become threatened. Schein and Schein (2016) note that the fear of losing power or position is a commonly expressed anxiety during change efforts. As they explain, this position can sometimes be tied to one’s identity, which the new roles in the organization might not facilitate. They continue stating that the top management can alleviate learning anxieties by adopting more supportive leadership models that provide psychological safety, involve others, and provide resources for change.

Servant Leadership presents one such approach. In Servant Leadership, the role of leadership is transformed from a traditional role of a “leader” to that of a “servant” (Greenleaf, 1977). However, a Servant Leader should not be seen as a literal servant, bossed around by their employees, but rather as an enabler of work. Van Dierendonck (2011) explains that the Servant Leader's practical role can be twofold. The first is to enable employees to be their best selves by providing direction, removing impediments, and providing appropriate tasks. Second is leading by example, showing humility, authenticity, and fallibility in one's behaviors by approaching one's employee as another person rather than one above them.

According to Barman et al. (2021), Servant Leadership in day-to-day agile practice can manifest through simple behaviors. They explain that the core idea is to help the teams function the best; since control does not work in agile, help must come through engagement. As they describe, the ways one can engage their employees are varied: you can collaborate with people, make sure everyone's voice is heard and can speak, and ensure there are no distractions. They further state that for a person to be a good Servant Leader, they require excellent listening skills, presence, and being visible at the moment-to-moment happenings. The role of the leader becomes the enabler for employees to perform their work rather than the controller making sure that work is being done, requiring empathy, agreeableness, and listening skills from those leading (Aghina et al., 2019).

Coaching and coaches are also a core part of organizational commitment, and their vital role in agile can also be seen as a form of leadership. Despite this, the role of agile coaches' leadership approach has not been adequately studied. Bäcklander (2019) offers a preliminary view of leadership in complex environments without managerial authority. In his study, Bäcklander (2019) interviewed sixteen agile coaches at Spotify. The role of the coaches at Spotify is to work in a complex and flexible, knowledge-intensive organizational environment, balancing the needs of "too autonomous" and "too bureaucratic" organizational needs without the same managerial authority or oversight that traditional management enjoys (Bäcklander, 2019; Kniberg & Ivarsson, 2012).

By using process-oriented ontology towards leadership in complex organizational environments, the role of coaches becomes less about strict rule orientation toward agile principles and more about relational solution-seeking. Instead of being the strict enforcers of agile goals and principles, coaches' approach to leadership becomes more contextual, emergent, and adaptive (Bäcklander, 2019). In this approach, the coaches' focus is not to follow the principles perfectly but to empower, enable and foster psychological safety within the teams, allowing them to work autonomously in their groups. This enables the teams to enact the process of collective leadership rather than rely on others to be led (Drath & Palus, 1994; Edmondson & Lei, 2014).

This type of leadership can also be called "shared leadership," often found in incumbent agile organizations (Moe et al., 2009). Shared leadership is a relational method where each team member has a high degree of influence in the team's leadership and an equal voice (Carson et al., 2007). They suggest that this social exchange can be viewed through social network theory, based on the density of the team's leadership network – in other words, the number of ties between team members and the strength of the ties. Later findings from Google's Project Aristotle suggest that a form of shared leadership with strong network density is the single most significant predictor of team performance, even above individual skill (Duhigg, 2016).

In agile, the shared leadership framework functions very similarly. Moe et al. (2009) describe the rotation of leadership in agile as dependent on the individual skill, knowledge, and abilities related to an issue at a particular moment. Rotating leadership can be enabled by having a small yet diverse team structure allowing the teams to be fully independent on any given task, which helps the team to have autonomy from the broader organization, makes team members mutually dependent, and allows for the rotation of leadership (Moe et al., 2009; Wageman, 2001).

Holtzhausen and de Klerk (2018) studied the effectiveness of Servant Leadership in Scrum. They found that the Scrum master's role as a coach and a Servant Leader was positively associated with team performance. The findings showed that Servant Leader practices enabled team-level psychological safety and empowered the team to become more autonomous. As agile methods rely on teams and their autonomous ability to seek the most meaningful ways to get the required work done, it becomes paramount that the organization has a healthy culture where people can rely on one another and feel both motivated and empowered to do their work (Moran, 2016).

2.4.6 Agile strategy and organizational culture fit

Organizational culture and strategy are highly intertwined, especially in the level of execution (Schein & Schein, 2016). Even if the messaging, organizational vision and mission are perfectly valid, if they are not aligned with the culture of the organization, it can be challenging to enact any meaningful changes within the organization, as the underlying culture will inevitably resist these types of changes and messaging (Cabrera & Bonache, 1999; Mintzberg et al., 1998; Schein & Schein, 2016; Warrick, 2017)

In agile, the role of strategy becomes to provide a looser set of guidelines for employee behavior that guides the agile teams to execute their necessary work. Instead of a traditional hierarchical process, the organizational strategy and leadership need to be transformed into an adaptive and supportive style of planning and organizing (Neruer & Balijepally, 2007). According to the authors, this means more emergent and flexible applications of strategy rather than positivist, stringently planned ones that undermine agile practices. Cabrera and Bonache (1999) argue that the success between organizational strategy and culture depends on whether the culture encourages the appropriate behaviors aligned with the organization's competitive environment. In this way, culture can become an asset or a hindrance if it is not aligned with the internal and external environment of the organization (Cabrera & Bonache, 1999; Mintzberg et al., 1998)

One early example of such a strategy is Netflix's approach to strategy and culture based on the simple vision of "Highly Aligned, Loosely Coupled." (Hastings, 2009). He explains that in this type of strategy, the organization sets the metrics and direction through a clear and transparent vision, strategy, and goals defined loosely enough not to bind employees but with enough detail to provide contextual guidance. Therefore, strategy is responsible for the broader large-scale decisions requiring significant investments based on key metrics. As Aghina et al. (2015) argue, the stable foundations of the structure, governance, and processes enable the flexibility and agility of many larger organizations. They claim that organizations can become significantly more agile by having clear primary structures and strategy aiding employee decision-making, responsibilities, and mutually shared processes.

The strategy process can be integrated into the agile model framework. An increasing number of organizations are combining the OKR and agile models to create an iterative and dynamic strategy to match agile's pacing and bottom-up leadership (Comella-Dorda et al., 2020; Doerr, 2018). The OKR structure can enable flexible re-orientation of strategic priorities at the organizational level, allowing for changes to be more flexibly based on the constantly evolving market demands (Comella-Dorda, 2020; Doerr, 2018). Iterative strategic prioritization of smaller goals also allows for more flexible funding structures at the unit and team levels (Comella-Dorda et al., 2020). In addition, they suggest, the bottom-up strategy formation process of the OKR model can significantly support the bottom-up leadership practices enacted in agile. Several authors have deemed top-down control and (strategic) change during the agile transformation process unsuccessful (Gandomani et al., 2014; O'Connor, 2010). Therefore, engaging in a bottom-up strategy can be an integrative element of strategy formulation across teams (Jarzabkowski & Balogun, 2009).

Organizations with ongoing agile transformations also need a specific strategy. One way to look at organizations where part of the organization operates autonomously while other parts retain the old hierarchies is through organizational ambidexterity (O'Reilly & Tushman, 2013). In particular, the interest lies within structural ambidexterity and later in the change process in dynamic capabilities (Aghina et al., 2015; O'Reilly & Tushman, 2008; Teece, 2007) as especially in stepwise changes, organizations need to have coexisting agile and traditional development units (Lee et al., 2006; Vinekar et al., 2006). Structural ambidexterity describes the organization's capability to engage in organizational exploration and exploitation separated by its structure, such as business units (O'Reilly & Tushman, 2008). In this way, the organization can build ways to simultaneously sense and seize new opportunities while also focusing on previously established core activities and norms (O'Reilly & Tushman, 2013).

From the Resource-Based View perspective, culture becomes a source of competitive advantage (Barney, 1986). As he explains, culture can become an inimitable asset that is increasingly complex to apply in practice, becoming a valuable competitive resource for organizations. Thus, the relationship between culture and strategy becomes bidirectional; strategy aids in aligning the culture and the organization, while culture itself becomes a strategic asset providing a sustainable competitive advantage in an agile organization (Barney, 1986; Moran, 2016; Siakas & Siakas, 2007).

2.5 Espoused values and beliefs in agile culture

Espoused values and beliefs represent the organizational values of what ought to be, representing explicitly articulated (moral) value justifications for the behavior of modern and past organizational leaders (Schein & Schein, 2016). In agile culture, espoused values and beliefs can be represented through the values that drive many behaviors. Common values in agile are more egalitarian and bottom-up decision-making and lowered power distances (Nerur & Balijepally, 2007; Schwaber & Sutherland, 2020; Tolfo et al., 2009), fast adaptation and flexibility to market and customer demand changes (Beck et al., 2001; Nerur & Balijepally, 2007; Poppendieck & Cusumano, 2012; Siakas & Siakas, 2007), and continuous organizational learning and improvement (Poppendieck & Cusumano, 2012; Siakas & Siakas, 2007; Tolfo et al., 2009) rooted in equal employee voice and collective intelligence (Duhigg, 2016; Pentland, 2012; Surowiecki, 2004). These values are often supported through psychological safety (Duhigg, 2016; Edmondson & Lei, 2014), shared and empowering leadership values (Bäcklander, 2019; Holtzhausen & de Klerk, 2018), and bottom-up ownership enabled by flexible, bottom-up resource allocation (Bernstein et al., 2016; Birshan et al., 2013) that enable individuals to act more autonomously and react faster to changing market demands.

2.5.1 Psychological safety as an antecedent value in agile culture

Psychological safety can be seen as an organizational quality and a collective value that agile organizations strive towards. Psychological safety is associated with equal employee voice (Duhigg, 2016; Pentland, 2012) and lower power distances (Edmondson & Lei, 2014; Schein & Schein, 2016) that support stronger organizational learning (Edmondson, 2002; Pentland, 2012) which are often represented by the flatter organizational structures in agile organizations. More concretely, psychological safety sets the antecedent for these values by promoting values that create a social climate in which employees are willing to take interpersonal risks (Edmondson & Lei, 2014).

At the organizational level, psychological safety can be interpreted in how the management team's “upper echelons,” see themselves and the organization and in how they provide and solicit feedback (Nembhard and

Edmondson 2006; Schein & Schein, 2016). While Edmondson & Lei (2014) argue psychological safety is a team-level phenomenon, Schein & Schein (2016) suggest psychological safety as part of the organizational culture. According to Schein (1985), psychological safety can be achieved through organizational-level values and behavioral norms that encourage organization-wide psychological safety. These two views should be seen as complementary rather than contradictory, meaning psychological safety can be viewed through "multilevel influences" (Edmondson & Mogelof, 2005). This way, psychological safety can be viewed as a team-level practice and a cross-cutting organizational value in which employees are encouraged to speak up.

For instance, recent iterative frameworks such as the OKR model view psychological safety as one of the core values enabling the framework and bottom-up inclusion of employees in the strategy creation process (Hämäläinen & Sora, 2020; Niven & Lamorte, 2016). In the OKR model, psychological safety is promoted through organizational values such as high tolerance for failure (through ambitious stretch goals that are likely to fail) and culture of speaking up. However, the high failure tolerance must be combined with what Pisano (2019) calls "no tolerance for incompetence," where high-performance standards are valued and drive failures instead of sloppy work.

Moreover, psychological safety should not be mistaken for being polite or having a polite organization. As Pisano (2019) explains, many organizations mistake psychological safety with politeness or do not understand that psychological safety is a two-way street – if one can criticize others' ideas, their ideas should be up for criticism. In their words, psychological safety should be seen as a strive towards candidness, sharp, and forthright criticism that cuts through proposals that people are equally excited to defend. Criticism is thus seen as a compliment and a form of respect rather than undermining or insulting one's proposals. Edmondson & Lei (2014) discovered that organizations with the ability to be most forthright and engage in the creative conflict were prominently ranked highest in psychological safety. This way, psychological safety can be viewed through propensity toward task conflict.

Other common values that are strongly associated with psychological safety in agile are openness (Edmondson & Lei, 2014; Thorgren & Caiman, 2019), collective responsibility (Tolfo et al., 2009; Valentine & Edmondson, 2015), and leadership inclusiveness (Nembhard and Edmondson 2006). While trust itself is already strongly associated with psychological safety (Edmondson & Lei, 2014; Valentine & Edmondson, 2015), its importance is increased in autonomous teams where the work itself is predicated on collective responsibility (McHugh et al., 2011; Tolfo et al., 2009). Likewise, how leaders solicit input and feedback and invite others to give feedback are crucial in creating a sense of psychological safety as their behaviors will be most scrutinized to establish a sense of psychological safety (Nembhard and Edmondson 2006).

While psychological safety is a rarely promoted value in agile literature (Lenberg & Feldt, 2018), it sets the antecedent for all the other common espoused values in agile (Frazier et al., 2017; Lenberg & Feldt, 2018). For instance, Edmondson (1999) argues that psychological safety is necessary as a cognitive state for organizational learning. While organizational learning is a common espoused value in agile, for an organization to learn in the first place, it has to accommodate a culture where employees perceive that open information sharing is promoted and allowed (Edmondson, 1999; Edmondson & Lei, 2014; Frazier et al., 2017). Moreover, low-hierarchies and low-power distances are commonly encouraged and promoted in agile (Holtzhausen & de Klerk, 2018; Schwaber & Sutherland, 2020). They can only exist if the organization promotes the values of psychological safety (Edmondson & Lei, 2014; Frazier et al., 2017; Schein & Schein, 2016).

2.5.2 Leadership values in agile culture

As teams in agile function more autonomously, leadership and management roles shift from control to greater empowerment and engagement of employees. Agile is both driven by the values of employee autonomy (Holtzhausen & de Klerk, 2018; Schwaber & Sutherland, 2020) and employee empowerment and engagement (Melnik & Maurer, 2006; Tessem & Maurer, 2007).

Servant leadership is commonly adopted, as it accommodates these values in agile. As Greenleaf (1977) explains, in Servant Leadership, leaders should go beyond their self-interests by helping others grow and become more autonomous instead of commanding and controlling those beneath them, which has a cascading effect throughout the organization:

> “The Servant-Leader is servant first… It begins with the natural feeling that one wants to serve, to serve first. Then conscious choice brings one to aspire to lead… The best test, and difficult to administer is this: Do those served grow as persons? Do they, while being served, become healthier, wiser, freer, more autonomous, and more likely themselves to become servants? And, what is the effect on the least privileged in society? Will they benefit, or at least not further be harmed?” (Greenleaf, 1977, p. 12).

In his literary review, van Dierendonck (2011) elaborates that a Servant Leader enables their employees to be autonomous and think for themselves. He explains that it is built on the foundation that every employee should be treated well to allow them to be their best selves. Another Servant Leader's goal is to provide direction (van Dierendonck, 2011). He explains that under a Servant Leader, the employees understand the leadership's expectations of them and what benefits them and the organization. He continues that a Servant Leader provides the guidelines for expected behaviors based on the person's abilities so that the directions are always tailor-made and suit the needs and abilities of everyone.

The overarching goal of Servant Leadership is to have a multitude of cascading cultural effects throughout the organization (Greenleaf, 1977). As he explains, the purpose of Servant Leadership is for employees to become servants themselves. He argues that when treated well, employees start engaging in more organizational citizenship behaviors and collaboration, creating a healthier organizational climate. A better organizational environment can have effects such as increased job performance, job satisfaction, lower turnover rates, a higher commitment to the organization itself (Gerstner & Day, 1997), better customer orientation, and lower stress (Jaramillo et al., 2009) and lower power distances (Carl et al., 2004).

Such leadership practices can also be described through what Drath and Palus (1994) describe as "meaning-making in a community of practice." In this view, the leader is seen as a facilitator who nurtures, motivates, and makes sense of the surrounding environment with people who are already motivated to act independently. According to the authors, the traditional leadership perspectives with a leader and a follower are abolished, and leadership becomes a practice initiated by the community of people. Similarly, Bäcklander (2019) observed in his interviews that the role of coaches was not to tell anyone what to do but rather to enable the employees to solve problems by facilitating, supporting, reminding, teaching, mirroring, and questioning different practices and allowing the team members to come to their conclusions. Therefore, the coaches' role is to foster opportunities for open dialogue, improvement, and change and to pay attention to the complex relational dynamics to enhance the quality and constructiveness of dialogue between team members (Bäcklander, 2019).

Leadership in agile can thus be viewed through two prominent values. One is the agile's strive toward less hierarchical organizations with lower power distances (Beck et al., 2001; Holtzhausen & de Klerk, 2018; Schwaber & Sutherland, 2020) that promotes values such as employee autonomy, empowerment, and meaningfulness in work (Melnik & Maurer, 2006; Tessem & Maurer, 2007). Moreover, it can promote the exclusion of a traditional dyadic leader-follower framework to a more collective meaning-making process (Drath & Palus, 1994). According to whom, rather than needing management push, employees should be seen as "already in motion." Instead of assuming employees need to be managed and continuously supervised, agile promotes a more positive view of employees and employee-management relationships based on interpersonal trust (McHugh et al., 2011) and collective responsibility (Tolfo et al., 2009).

2.5.3 Values underlying agile resource allocation

The values in agile resource allocation are based on flexible access to resources that enable teams to act and organizations to adapt at a moment's notice (Birshan et al., 2013). The Agile Manifesto promotes reacting to the quickly changing customer demands by stating: “Welcome changing requirements, even late in development. Agile processes harness change for the customer's competitive advantage” (Beck et al., 2001). Resource allocation is paramount for the teams' functionality and displays the management’s trust and beliefs towards the principles they promote (Kurtessis et al., 2017; Rodgers et al., 1993). Schein and Schein (2016) describe resource allocation as a primary embedding mechanism, suggesting that it is one of the more powerful tools through which leaders can embed their beliefs, values, and assumptions. Lack of management support is a case of leading by example, which gives a negative signal to the rest of the organization and can harm the contributions and employee motivations (Schraeder et al., 2005). I define the term "resource" here as financial and human resources, intangibles in coaching, education, and time investments from the top management that indirectly require financial assets.

Resources are often allocated flexibly, so the organization is never locked in place. In customer-facing projects, the approach is called the “walking skeleton,” where the barebones of the project are kept in a way that facilitates and establishes the bare minimum features of the product but allows change of trajectory at any time (Abrahamsson et al., 2010). At a unit or organization-wide budgeting level, this could mean setting aside a separate budget for major investment decisions requiring quick decision-making and promising future cash flows (Bryan, 2009). Values such as continuous resource allocations toward smaller projects through organizational venturing are valued (Mintzberg et al., 1998). However, so is the ability to “let go.” Not getting attached to any project or previous year's budgets becomes essential (Pisano, 2019). Budgets of each unit or “cell” might be re-evaluated yearly based on relative market opportunities rather than through consistent small annual budgeting changes seen in traditional organizations (Hall et al., 2012).

Similarly, many agile organizations might give relatively free access to resources (often with some set limit) (Bernstein et al., 2016; Futurice, 2019; Valve, 2012). The flexible bottom-level resource expenditure is often predicated on the idea that most of the findings come from the field, allowing quicker and more flexible value capture (Bernstein et al., 2016). As the authors suggest, agile organizations often promote a "radical transparency culture," where all financials, roles, and decision-making becomes completely transparent to enable flexible resource allocation. This way, resources can be simultaneously allocated flexibly, while accountability and access to those resources can be retained even at the organization's lower levels (Bernstein et al., 2016; Futurice, 2019).

In agile organizations, the allocation of time is valued very differently. Time itself becomes an asset that needs to be managed efficiently. The top management team might restructure the budget and allocate their time toward only the most promising initiatives in the budgeting management team, considering how much “financing” each project requires (Bevins & De Smet, 2013). How time is spent, and on what becomes essential. Even if a certain product or process was true today, it is not assumed that the same truths will hold indefinitely. Rather, there is a continuous and constant process of scouting the external environment for new investment opportunities as the operating environments are assumed to be highly dynamic (Teece, 2007).

Being agile means taking larger risks and growth through resource allocation and capital expenditure (Birkinshaw & Ridderstråle, 2010; Mintzberg, 1998). Taking continuous smaller risks becomes essential for organizational survival and growth, or as Catmull (2008, p. 3) states of Pixar’s creative process: “Then again, if we aren’t always at least a little scared, we’re not doing our job.” This means investing in continuous learning and retaining a long-term financial view as high-risk projects, and organizational learning is unlikely to provide yield short-term (Denning, 2018; March & Levinthal, 1993). Thus, somewhat paradoxically, organizations must simultaneously be ready to continuously change while looking at long-term financial prospects through learning and future technology investments.

In contrast, corporate short-termism can lead to the broader issue of organizational myopia that agile organizations must overcome. Organizations can show a form of “short-sightedness” in search proximity, timespan, and existing stock of knowledge (March & Levinthal, 1993). As the authors explain, organizations often favor short-term decision-making at the cost of long-term survival. As they describe, organizational myopia can generate competence traps where the competitive environment is oversimplified, and knowledge inventories become increasingly narrow, forcing the organizations into an even more limited set of competencies and inability to deal with uncertainty. This can further entrench the organizations into narrowly defined competencies harming the flexibility and organizational agility.

Resource allocation behind agile exists to put agility in agile. Resource allocation in agile exists as a continuously renewed and reevaluated commitment through iterative decision-making that enables flexibility at both organization and team level (Bevins & De Smet, 2013; Bryan, 2009; Hall et al., 2012) while creating word-alignment of leaders (Kurtessis et al., 2017; Rodgers et al., 1993) and functioning as a primary culture embedding mechanism for agile (Schein & Schein, 2016).

2.6 Basic assumptions in agile culture

The taken-for-granted basic assumptions are the underlying, implicit, and unspoken rules and behaviors that guide day-to-day organizational actions and approaches to novel scenarios (Detert & Edmondson, 2011; Levy et al., 2006; Schein & Schein, 2016). In agile culture, the basic assumptions represent the underlying taken-for-granted beliefs and theories upon which the model was built. These can be the approaches of value co-creation (Cohn, 2004; Steen, 2012); philosophical underpinnings underlying employee rights, empowerment, and more egalitarian workplace environments (Melnik & Maurer, 2006; Tessem & Maurer, 2007; Tessem, 2014); and social constructivism of external reality in contrast to the stable positivist view of reality (Larman & Basili, 2003; Mikalsen et al., 2019; Nerur & Balijepally, 2007).

2.6.1 Customer value creation in agile culture

Agile customer value creation shifts the traditional value creation process from a customer as a passive receiver of goods and services to an active contributor and participant in the value creation process representing a fundamental shift in value creation (Prahalad & Ramaswamy, 2004a). An increasing number of authors suggest that obsessing over customer value or, more specifically, customer experience management should be the end goal of any successful organization selling products or services (Lemon & Verhoef, 2016; Pine & Gilmore, 1999). Many organizations have already taken this action, the most well-known being Amazon and its motto about the obsession with customer value. Other examples include Guinness (Frow & Payne, 2007), Disney (Lemon & Verhoef, 2016), Starbucks (Verhoef et al., 2009), Google, Apple, and Zara (Denning, 2015).

The idea of customer experience management was popularized by Pine and Gilmore's (1999) book "Experience Economy." The authors argue that just as the western economy shifted from an industrialized economy to a service-based economy, another change is occurring. According to them, this change represents a shift from services to experiences that can be differentiated by their uniquely curated offerings to each customer compared to commoditized services.

However, the idea of a highly curated customer experience is far older. Early authors such as Umberto Eco (1973) and Jean Baudrillard (1981) discuss the example of Disneyland while explaining the concept of hyperreality. In this world, Disneyland's “fake cities” and facades create a curated sense of reality and fantasy that no longer merely tries to imitate reality but improves on it (Eco, 1973). In contrast to hyperreality, reality can become disappointing. While at Disneyland, you are guaranteed to see animatronic animals; on a nature trek, one might miss the wild animals entirely. As Eco (1973, p. 46) states: “...You risk feeling homesick for Disneyland.” Thus, the product, brands, marketing, and advertising can become the ultimate form of reality through which one perceives the idealized version of the world. For organizations, this represents an opportunity to reshape their existence to mirror one more aligned with the desired image of the organization rather than the one grounded in reality.

To this end, Pine and Gilmore (1999) argue that we now live in an "experience economy." The experience economy represents a "progression of economic value" from goods and services to charging from experiences. According to them, experiences represent unique economic offerings, and often the services offered by the organizations merely represent a "stage" and the goods as the "props" through which the experiences are carefully crafted. Eco (1973, p. 46) notes in his work how at Disneyland: "The Main Street facades are presented to us as toy houses and invite us to enter them, but their interior is always a disguised supermarket, where you buy obsessively, believing that you are still playing." Eco's example illustrates the idea of consuming experiences, and the staged event where the customer is part of the carefully orchestrated "play"—a word coincidentally used by both authors.

Contemporary marketing literature views the exchange between the participant and the organization as a mutual value-creation process (Payne et al., 2008). From this perspective, the customer voluntarily participates in the "play," and in exchange, both parties receive additional value. In agile, mutual value creation happens through continuous customer involvement and building iteratively upon customer feedback to better represent customer needs (Steen, 2012). Thus, the value creation process and reality construction process can become bidirectional. Creating a mutually reinforced process by the organization shaping their customer experience while continuously adjusting it, based on customer perceptions, to represent better the idealized "reality" that matches customers' image of the organization (Prahalad & Ramaswamy, 2004b).

Agile customer value creation can be seen as a fundamental shift in customer value creation. In traditional models, the value is created through simple exchanges of commodities, and the customer's role is retained as a passive consumer at the end of the process (Prahalad & Ramaswamy, 2004a). As the authors explain, the difference in value co-creation is that customer value is created in the cooperation between the customer and the organization. The value creation and extraction become a continuous process throughout the customer journey, where the customer can have a continuous impact in shaping the final product or service (Prahalad & Ramaswamy, 2004b). As the authors note, each product or service can become unique and personalized to each customer who takes part in the process or "play" from which both parties can extract surplus value.

2.6.2 Structural and psychological empowerment in agile culture

Though employee empowerment has been linked to agile in only a handful of studies (e.g., Eilers et al., 2020; Tessem, 2014; Tessem & Maurer, 2007), employee empowerment is a core part of agile that many of the espoused agile principles have been historically built upon. Namely, low power distance leadership (Gómez & Rosen, 2001), structures (Garfield, 1993), autonomy

(Herzberg, 1968), meaningfulness (Thomas & Velthouse, 1990), and employee participation (Lawler, 1992) that modern agile relies on, have all been built upon the foundations of the employee empowerment movement.

This thesis considers employee empowerment more broadly from its philosophical underpinnings. From the perspective of elevating employees' as Kanter (1977) put it, to give power to people within the organization who are weak. And from a managerial standpoint, placing one's employees over one's own needs to serve and empower – to give self-efficacy and proficiency over one's work rather than control (Spreitzer & Doneson, 2005). The authors call this a "positive organizational scholarship" that concerns itself with organizations' possibilities to "unlock potential, reveal possibilities, and facilitate a more positive course of human and organizational welfare," utilizing a multitude of theories beyond employee empowerment (Spreitzer & Doneson, 2005, p. 8). As they explain, empowerment can embody a broader set of beliefs that seek to empower and create a more egalitarian organization where power distances are minimized, and the welfare of the employees is prioritized.

Thomas and Velthouse (1990) defined individual employee empowerment through intrinsic task motivation related to employees' psychological empowerment. As the authors argue, employees should be intrinsically motivated by the work rather than the management pushing them to perform specific tasks. According to them, an empowered employee has a sense of impact, can competently do their work, feel their work is meaningful, and have personal autonomy or choice over their work. Similarly, Conger and Kanungo (1988), who first defined the necessary conditions of psychological employee empowerment, viewed empowerment as enabling self-efficacy.

An alternative interpretation of employee empowerment is structural empowerment. Structural empowerment refers to the empowerment of the team, collaborative work, and power relations (Himmelman, 2001; Honold, 1997; Kanter, 1977). According to this view, empowerment represents collective bargaining for better working rights (Himmelman, 2001). Collaborative empowerment emphasizes having broader access to the organizational resources (Conger & Kanungo, 1988) and transforming the organization from a top-down institution to a bottom-up collaborative effort that empowers employee initiative and involvement (Spreitzer & Doneson, 2005). On an interpersonal level, sources of power can come from a structural position, personal characteristics, personal expertise, and specialized knowledge and information that the person can exhibit control over others (Conger & Kanungo, 1988). Furthermore, the authors explain that depending on the source of control, control can be identified as legal (control of office), coercive (discipline), normative (symbolic rewards), remunerative (material conditions), and knowledge (control of information). They explain that employee empowerment depends on access to these resources and restoring power balances within the organization so that employees can reach desired outcomes and perform work to their best capabilities.

In an empowered organization, leadership is described as giving power to the employees and delegating work to them, letting them solve problems rather than ordering employees to do so (Malone, 1997). Therefore, the power of leadership comes from the leader's ability to control these resources and share their power with employees (Conger & Kanungo, 1988). As in agile, Honold (1997, p. 203) describes leaders' role in empowered organizations: "Managers act like coaches and help employees solve problems." This can mean providing job autonomy, providing meaningful tasks, and receiving more consulting, mentoring, and recognition for one's work (Menon, 1995).

Tessem (2014) found that teams working in Scrum teams showed higher structural and psychological empowerment levels. According to the study, structural empowerment was experienced when the teams had more power over their processes as they could both initiate new tasks and choose them, suggest the adoption of new technologies and participate in the design of the process. The teams also had a better flow of information through low-cost information as the flow of communications was emphasized, improving psychological empowerment. Similarly, a higher degree of employee empowerment improves job satisfaction and motivation in agile teams (Melnik & Maurer, 2006; Tessem & Maurer, 2007), adaptability, and innovation (Grass et al., 2020). Eilers et al. (2020) considered employee empowerment to be the differentiating factor between "doing agile" and "being" agile, in the sense that one truly embodies the principles.

Employee empowerment can, therefore, be divided into two different definitions. The first is the psychological empowerment of individuals through intrinsic and autonomous motivations and intrinsically motivating work, akin to the self-determination theory (Gagné & Deci, 2005; Thomas & Velthouse, 1990). Second, the socio-structural perspective of employee empowerment concerns the organization's ideals, structures, hierarchies, and power dynamics, enabling the conditions for more meaningful work (Gagné & Deci, 2005; Spreitzer & Doneson, 2005). Structural and psychological empowerment underline many of the agile principles and simultaneously enable and improve the application of agile practices (Eilers et al., 2020; Grass et al., 2020; Melnik & Maurer, 2006; Tessem & Maurer, 2007).

2.6.3 Social construction of reality in agile organizations

How one perceives the world inevitably affects how one chooses to tackle subsequent issues in any given environment. Moreover, how different people see those solutions is a mixture of personality traits that lead to specific occupation choices, education, and socialization (Schein & Schein, 2016; Van Maanen & Schein, 1977). Many lines of education have a long and specific structure that is affected by their history which has significant subsequent real-world effects on future practice (Ghoshal, 2005). The author argues that management education has had a strong positivist and ideological bent on individuals as selfish and purely rational, which he calls a pessimistic “gloomy vision” of individuals. According to him, this has had subsequent effects on management practice. These ideas can be traced back to the early days of scientific management (Taylor, 1911) and 1960s research in qualitative research seeking legitimacy through objectivism (Charmaz, 2006) and post-war boom needs for professional managers in the U.S. and Milton-era economics (Ghoshal, 2005) that still affects modern social sciences (Bennis & O’Toole, 2005; Ghoshal, 2005).

Similarly, agile methodology and the organizations it is deployed are affected by their history, occupational cultures, and educational backgrounds. For instance, traditional software engineering and product management that had a history of shaping agile were cumbersome in optimizing the processes through control (Larman & Basili, 2003; Sommerville, 2016). Moreover, many existing business schools and MBA programs training future (upper) management are still being taught this way (Bennis & O’Toole, 2005; Ghoshal, 2005). Leaning toward very mathematically heavy economic, financial, physics, and statistical models and analysis that critics would argue, despite having their use, are very removed from the business practice (Bennis & O’Toole, 2005; Ghoshal, 2005).

Subsequently, education leads to assumptions about business practice and how it should be conducted and led (Bennis & O’Toole, 2005; Ghoshal, 2005). As Bennis and O’Toole (2005) argue, when quantitative methodologies are overused, all one sees are numbers, leading to more multifaceted and interconnected issues being overlooked. Ghoshal (2005) argues that the “scientific” approach that permeates management leads to the reductionist beliefs of treating management sciences like physical sciences. According to him, this has led to the ignorance of mental phenomena such as ethics and morality, subsequently leading to the “dehumanization of practice.” In other words, treating human-constructed social phenomena as a natural law risks reifying and distancing oneself from the process as if one had no control over it:

> “Reification implies that man is capable of forgetting his own authorship of the human world, and, further, that the dialectic between man, the producer, and his products is lost to consciousness. The reified world is, by definition, a dehumanized world. It is experienced by man as a strange facticity, an opus alienum over which he has no control, rather than as the opus proprium of his own productive activity.” (Berger & Luckmann, 1966, p. 106).

The education trickles down to practice and leads to what Schein and Schein (2016, p. 165) call the “Executive subculture.” As they explain, the executive perceives themselves as “lone hero” at war with everyone inside and outside the company, and people become just a number and a part of a well-oiled machine. Similarities can also be seen in the management subculture’s strong preference for quantitative measures, as finances and money are naturally the easiest to measure (Schein & Schein, 2016). For these beliefs to be maintained and to retain their existence and legitimacy, they must be systematically introduced through recognized institutions with “educational processes” (Berger & Luckmann, 1966, p. 87).

The scientific management approach could be more broadly categorized under “structural functionalism” or a “functionalist paradigm” that views the organizational reality as objective and strictly measurable (Gioia & Pitre, 1990). This perspective views the organization as operating on an objective reality that is out there to be discovered. As positivism deposits that the social world behaves like the physical world, the conclusion is scientific reductionism (Gioia & Pitre, 1990). These beliefs operate best in more stable and predictable operative environments, where quantitative output, efficiency, and strict quality mark the ultimate competitive edge as these are more quantifiable and predictable variables (March, 1991; Mintzberg et al., 1998).

However, in an increasingly turbulent competitive environment, quantitative rigor, planning, and forecasting fail (Conklin, 2006; Larman & Basili, 2003; March & Levinthal, 1993; Mintzberg et al., 1998). The so-called “wicked problems” require multifaceted thinking and complex socio-technical interactions while having no clear optimal solution (Conklin, 2006). He argues that many real-world issues represent complex, multifaceted issues with significant social complexity and dynamics that cause fragmentation and have ill-defined solutions that cannot be solved through calculation and control. However, if organizations operate with hierarchical systems of control and positivist views of the world, the attempts to solve these problems could be through more control (Iivari & Iivari, 2011, Conklin, 2006).

Therefore, the transformation to agile culture requires, at least a partial abandonment of functionalism, a partial adoption of interpretivist paradigms, and conscious realignment of previously taken-for-granted positivist beliefs in management (Gioia & Pitre, 1990; Nerur & Balijepally, 2007). The interpretivist paradigm views organizations as socially constructed and continuously evolving processes that dynamically shape the organization (Gioia & Pitre, 1990). Instead of assuming an objective and stable view of organizations or organizational reality, it becomes a complex socio-technical system with competing realities constructed through collective social processes (Fairhurst & Grant, 2010; Mikalsen et al., 2019; van Amelsvoort, 2017). Fairhurst and Grant (2010) claim that the constructivist paradigm leads to different assumptions of leading and managing organizations where control shifts towards consensus-seeking and meaning-making of collective realities. Indeed, the social constructionist view has been primarily attributed to the change from “strong” or “ideal” leaders with desirable attributes to collective and autonomous leadership (Fairhurst & Grant, 2010; Raelin, 2011)

Given that social constructionism views the role of communication, symbolism, and language as the starting point (Berger & Luckman, 1966), it transforms the leadership and strategy into a collective and co-constructed meaning-making process with a complex interplay of social processes and structures (Drath & Palus, 1994; Fairhurst & Grant, 2010; Jarzabkowski & Spee, 2009). Language and continuous discourse becomes the medium through which meaning is made (Fairhurst & Grant, 2010). This way, the role of employees becomes more pronounced. The underlying dynamics of leadership and strategy are affected by employees' individual and collective narratives, meaning-making, sensegiving, and sensemaking properties (Drath & Palus, 1994; Fairhurst & Grant, 2010; Sonenshein, 2010). The competitive environment becomes constantly evolving, dynamic, and emergent, narrating organizational decision-making and strategy bottom-up (March, 1991; Mintzberg et al., 1998; Jarzabkowski & Spee, 2009).

Few authors advocate abandoning quantitative analysis but approaching issues through multiparadigm perspectives necessary to explain the modern organizational complexity under dynamic environments (Gioia & Pitre, 1990). Therefore, any organizational change or transformation could be seen through a multi-paradigm perspective (van de Ven & Poole, 1995). This can require a notable change in basic assumptions at the managerial and executive levels of the organization. Some organizations have reached this conclusion through very pragmatic trial and error. For instance, in complex software engineering, the development of effort estimation from mathematical models (such as COCOMO II) to expert-based estimations (such as Planning Poker) came to be due to the better accuracy of consensus-seeking from experts that was recognized in practice (Sommerville, 2016).

The shift from positivism to constructivism or a shared paradigm has a dual motive. First, historically it underlines the essential epistemological beliefs and practices required for operating in a complex organizational environment and practices used in agile (Larman & Basili, 2003; Sommerville, 2016). Second, the limitations of existing quantitative models fail to capture the complexity of such dynamic organizational environments and the adoption of a shared paradigm can thus significantly complement existing practices (Conklin, 2006; Mintzberg et al., 1998; Sommerville, 2016). However, as demonstrated earlier, strictly positivist beliefs are deeply rooted in various cultural, historical, and educational institutions that grant them legitimacy (Bennis & O’Toole, 2005; Berger and Luckmann, 1966; Charmaz, 2006; Ghoshal, 2005). As these values are an intrinsic part of the managerial subculture, it can make the change in basic assumptions difficult, especially if the beliefs are not consciously held or are taken as an objective truth about the world (Schein & Schein, 2016).

3 Research material and methods

3.1 Case organization and research context

The case company Suomen Osuuskauppojen Keskuskunta (SOK) operates as a cooperative S Group subsidiary with over 1,800 outlets across Finland and employed over 40,000 people in Finland in 2021 (S Group, 2021a). S Group forms Finland's largest retail store chain in Finland (PTY, 2020), which forms the largest share of operations for S Group. Smaller portions of S Group's operations are made up of smaller service station stores, fuel sales, travel and hospitality businesses, and automotive trade (S Group, 2021b)

SOK comprises 1,800 employees and is a subsidiary of the S Group, serving as the organization in promoting the operations of other subsidiary enterprises, marketing, and strategic management for all S Group (S Group, 2021b). SOK is responsible for the broader business operations of the S Group through managing and supervising the fulfillment of the operative and strategic goals of S Group subsidiaries (S Group, 2021b). At the time of this study, SOK was undergoing a partial agile transformation in the HR department of the SOK group, compromising 75 employees. The SOK HR works and supports HR professionals across the parent organization, having a total of 300 HR professionals under its umbrella

As part of the agile transformation an extended HR management team with roughly 20 members had been formed. The extended HR management team represented a multidisciplinary team with participants from several different units, though primarily from HR and IT who had been practicing agile. The IT teams had started their agile transformation process roughly 1,5 years prior. This study will highlight the HR's experiences in undertaking agile by assessing the informants' and their team's personal experiences related to agile. I will also be highlighting the experiences from both the IT- and cross-functional teams that had been practicing agile with HR and outside of it and been part of an agile planning team. The goal is to create a holistic description of the early organization-level agile practices and interdependencies in large-scale agile.

The goal of the agile transformation at SOK HR was twofold. For one, it would provide a modernized operational framework for the organization to serve its customer base in the changing organizational competitive landscape. In other words, the change towards agile was driven by the accelerating market demands creating market pressures towards faster market adaption. There were five overarching attainment goals set for the agile transformation: (1) responding better to expectations of the regional cooperatives; (2) operating effectively through supply chains; (3) advancing access to the labor force; (4) supporting everyday functional work through HR systems; (5) learning from one another and measuring results.

Additionally, the transformation would begin the deeper strategic integration between the HR unit and the broader organization. The goal of the strategic integration of HR and SOK was done with a simultaneous application of the OKR framework alongside agile practices and served as a part of the holistic transformation. The goal of the deeper integration of the HR unit and business strategy was to create an HR aligned with the SOK's business goals. There were four strategic goals set for HR to attain: (1) developing leadership and culture to support strategy, cooperative performance, and fulfilling the leadership promises; (2) developing competencies and recruiting and retaining employees; (3) supporting management and HR professionals by creating well-functioning systems and services; (4) advancing collaboration between cooperative chains, working through supply chains and utilizing agile methodology. On top of the established goals, new HR business partner roles had been established to drive the deeper integration between HR, strategy, and meeting the demands of the regional cooperatives.

In preparation for the changes, ways of working were co-designed with the HR management team and a team of 10 HR specialists and volunteers from within the SOK HR. This included creating mutual agile ceremonies (dailies, weeklies, retrospectives, and monthly meetings), a common Kanban, Obeya room, and Teams collaboration space, where all information is shared among teams. OKRs are guiding the teams' priorities. Over 40 customer interviews were conducted, and ways of working as well as the services provided were co-designed in 4 different sessions with customers. The OKR framework is based on Hämäläinen and Sora's (2020) book on OKRs, which had been given for all the employees to read along with other independent articles in agile. Moreover, at the beginning of the changes, the whole team had had a mutual half-day introduction and, a week later, a one-day facilitated learning event with an agile HR coach.

Furthermore, internal surveying would be used to gauge the most pressing improvement needs and understand the internal organizational landscape and requirements of the regional cooperatives. Initial questionnaires were implemented to understand the customer needs before the changes had been implemented. The second round of questionnaires was performed at the end of the first quarter between 22.3.2022 – 29.3.2022 to evaluate the transformation process. The findings of the questionnaires were discussed in monthly meetings with the extended management team. Third questionnaire was planned after the second quarter of the change in August, seven months after the changes started to monitor the agile transformation and its progress.

The case organization represents a particularly unique case of agile transformation. Most agile studies have focused on IT- and software-intensive organizations where agile is predominantly used (Digital.ai, 2021). SOK, particularly its HR department, represents a highly diverse pool of individuals from diverse backgrounds in law, business and finance, management, and IT. Unlike in most modern IT and software development, the differences in dominant occupational subcultures provide a setting where many employees are unfamiliar with agile practices. While individual teams within SOK have been practicing agile for some time, the HR department is the first unit to undergo the agile transformation fully. Naturally, the HR department is connected to the broader S Group and other units at SOK. The interconnectedness provides additional insights into the preliminary stages of a cultural shift and how the dependencies interact with the cultural change inside the organization. Changes done outside the HR or as a cross-unit collaboration in the functional teams will be referred to separately to clarify the changes taking place inside the organization.

The agile transformation at SOK HR started simultaneously with the start of this study. The change officially started in January 2022. The first observations at SOK were on the 8th of March 2022, marking the start of the empirical research. Therefore, the findings of this thesis focus on the early stages of an agile transformation at SOK HR alongside the experiences of cross-functional teams and other organizational members partaking in the agile transformation. The goal is to create a holistic understanding of the early phases of large-scale agile transformations by understanding the opportunities and challenges of large-scale cross-team and cross-unit collaborations in agile practices.

3.2 Research methodology

3.2.1 Case study as a research strategy

The research strategy for this study represents a single case study using qualitative data (Eisenhardt, 1989; Eisenhardt & Graebner, 2007). The case study is a research strategy that examines: “a contemporary phenomenon in its real-life context, especially when... the boundaries between the phenomenon and context are clearly not evident” (Yin, 1981, p. 59). The goal of the case study is to primarily answer the “how” and “why” of contemporary social phenomena (Yin, 2018). Contrary to some beliefs, the case study method is not constrained to any type of data (e.g., qualitative/quantitative) or data collection methods (e.g., ethnography, interviews) but instead describes a research strategy for creating theoretical constructs (Eisenhardt, 1989; Yin, 1981). This research strategy uses theory building through inductive reasoning (Eisenhardt & Graebner, 2007).

The case-study approach is useful for theory-building practices in novel research areas (Eisenhardt, 1989). The case study aims to stand out as a singular analytic unit that produces detailed empirical descriptions of individual scenarios that use various data sources (Eisenhardt & Graebner, 2007). This way, a theory built from a case will produce a theory that stays close to the data, creating an accurate, engaging, and replicable theory.

The case represents a large-scale transformation of a non-software intensive organization at the beginning of its change, supporting theoretical sampling and giving a unique insight into a recent phenomenon that represents a unique setting and theory appropriate for a case study (Eisenhardt, 1989).

3.2.2 Grounded theory

The purpose of grounded theory is to provide theoretical findings intimately grounded in the data by delivering flexible guidelines for data collection and analysis (Charmaz, 2006; Glaser & Strauss, 1967). However, as Charmaz (2006) argues, defining the exact purpose of grounded theory is problematic. She suggests that the framework should provide systematic guidelines for qualitative research rather than strict rules. As she explains, grounded theory aims to create an interpretive analysis reflecting multiple realities, including our informants and our own.

The grounded theory differs from most qualitative methods due to its iterative focus on data and refinement of data and categories during the research process. The process starts by gathering rich data through common qualitative means such as ethnography, intensive interviews, and textual analysis (Charmaz, 2006). The material is coded intensively through line-by-line coding (at the beginning), where each line of data is named based on actions (Gibbs, 2013; Glaser, 1978). Line-by-line coding allows for the generation of rich data early on, prevents forcing data into personal codes, and focuses on the research questions as the study progresses, called theoretical sampling (Charmaz, 2006). At later stages, the codes can be directed to focused coding, synthesizing data into more significant segments based on the most meaningful codes derived from initial coding, which can be extended into theoretical codes by linking together the most substantial codes (Glaser, 1978)

Throughout the process, there is a continuous comparison between the units of data, comparing codes to codes, incidents to statements, and statements done at different times (Glaser, 1978). Charmaz (2006) suggests memoing for this continuous comparative process. She explains that memos are simple writings of thoughts, ideas, and explanations of things such as (focused) codes and other findings that allow the researcher to compare data to data and draw connections and insights from the existing findings. As she explains, this allows for the iterative cycle of theoretical sampling towards more focused questions in data collection that can generate more memos and refine data further until final memos are made, clustered, and used to raise focused codes to conceptual categories.

Even after this process, one can return to their data at any point. The strength of the grounded theory process lies in the researcher's ability to go back and forth between the data and the research (Charmaz, 2006). She explains that theoretical sampling allows for refining and narrowing down memos, interview questions, and observations so that the previously discovered data will progressively guide the following research. This way, the grounded theory process becomes an emergent process that strengthens the findings and discourages the usage of pre-determined categories for data or the premature closure of existing data, making the results more grounded in the data.

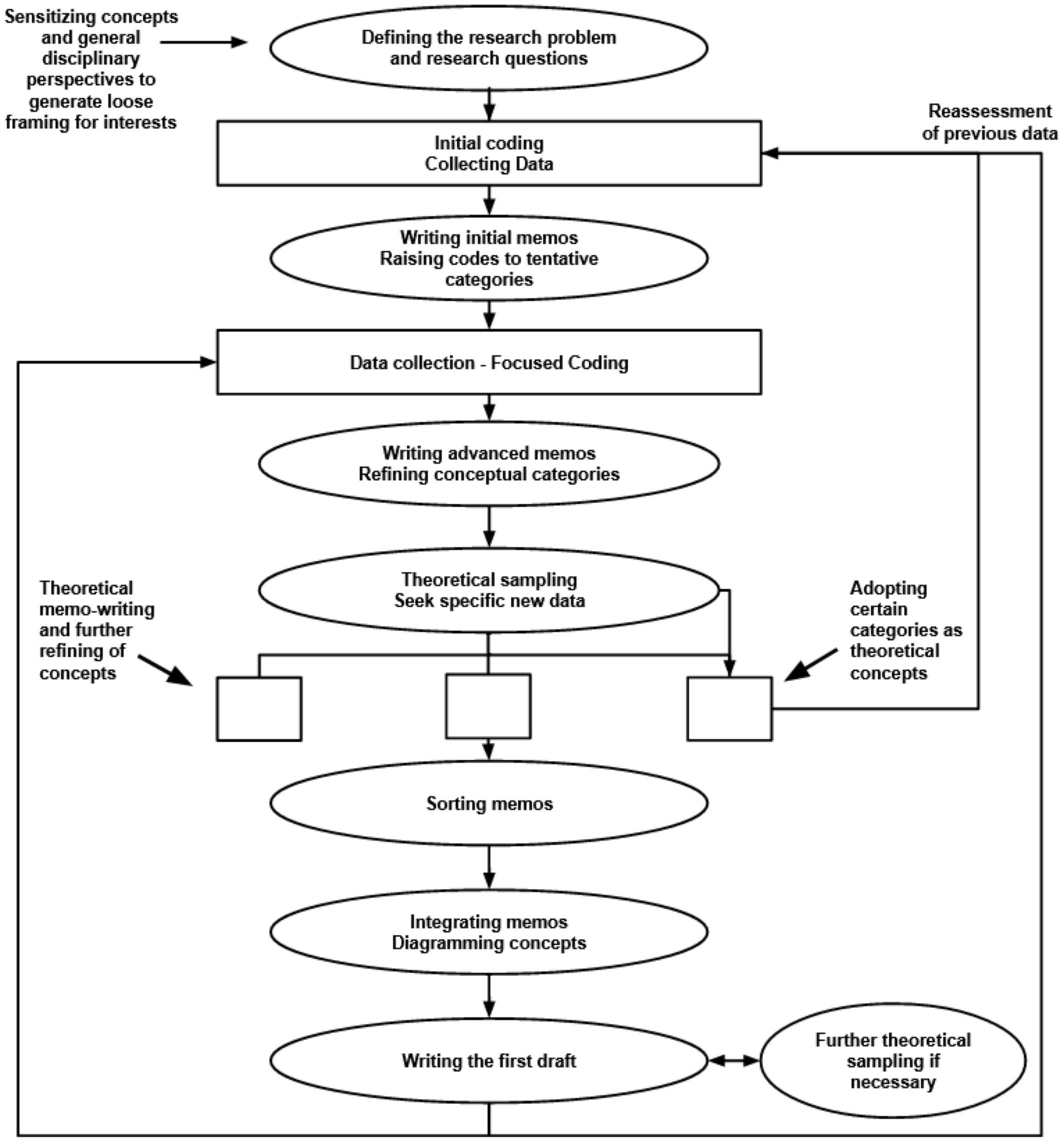
Sensitizing concepts and general disciplinary perspectives to generate loose framing for interests
Defining the research problem and research questions
Initial coding Collecting Data
Reassessment of previous data
Writing initial memos Raising codes to tentative categories
Data collection - Focused Coding
Writing advanced memos Refining conceptual categories
Theoretical sampling Seek specific new data
Theoretical memo-writing and further refining of concepts
Adopting certain categories as theoretical concepts
Sorting memos
Integrating memos Diagramming concepts
Writing the first draft
Further theoretical sampling if necessary

Figure 5: Grounded Theory Process (Charmaz, 2006)

This study follows Charmaz's (2006) constructivist grounded theory. The constructivist grounded theory differs epistemologically and ontologically from the traditional objectivist grounded theory (e.g., Glaser & Strauss, 1967) by taking an interpretivist view compared to the positivist views of early authors rooted in quantitative research methods (Charmaz, 2006.). In positivist grounded theory, the assumption is of a passive objective observer who is separated from the phenomenon or the event and merely aims to capture it in its essence, creating theories through logico-deductive means instead of interpretation (Charmaz, 2006). Objectivism can lead to qualitative researchers replicating the requirements of establishing causality, replicability/generalizability, and verification often found in quantitative methods (Patton, 2015; Yin, 2018). Notably, the Glaser and Strauss (1967) grounded theory merges two traditions of qualitative and quantitative approaches, using the epistemological assumptions of quantitative research and a highly systematic approach to qualitative research while agreeing on the subjective meanings and construction of reality through language and actions.

Charmaz (2006) argues that paradoxically, the aim for quantitative rigor in grounded theory can have the opposite effects. As she explains, if the researcher removes themselves from the position of the interpreter and views themselves as a mere objective observer, they can become blind to their personal biases in the interpretation, forcing data to their generalizations due to a lack of context-sensitivity. She concludes that the constructivist view of grounded theory necessitates that the theory inherently depends on the researcher's interpretation and cannot exist outside of it somewhere to be "discovered." She suggests that recognizing these interpretive frames can help researchers acknowledge and understand how they and their research informants' starting assumptions affect the unfolding theory.

Constructivist grounded theory subscribes to the social construction of reality; this necessarily means that the subjects of the study, and the informants themselves, construct their realities (Berger & Luckmann, 1966; Charmaz, 2006). This way, the data, and the subsequent analysis are social constructions that provide an interpretative frame of reality (Charmaz, 2006). This view of theory makes it contextually bound to the place, time, culture, and the surrounding situation subject to surrounding actions, power dynamics, hierarchies, and narratives. Thus, epistemologically Charmaz's (2006) grounded theory aligns itself strongly with interpretivist as opposed to positivist inquiry. Though as she explains, the method does not necessitate being tied to a single epistemological position.

The strength and rigor of the constructivist grounded theory come from its flexibility and reflexive capabilities. As Charmaz (2006, p. 180) states: "We stand within the research process rather than above, before, or outside it." A loosened grip on objectivism allows the researcher to interpret the informants' thoughts and actions that the informants themselves might view as insignificant. Constructivism becomes especially valuable in the study of (organizational) culture, as the deeper tacit assumptions are often highly embedded in the language that the informants might not even consider or realize (Schein & Schein, 2016). It allows the researcher to present hidden meanings in languages and consider multiple vantage points, not just those of the researcher but also the various informants of the study (Charmaz, 2006).

3.3 Data collection

The data was collected through observations, intensive semi-structured interviews, informal discussions, and shared internal documentation and surveys done by SOK. As Charmaz (2006) explains, qualitative methods aim to better understand and empathize with the informants' worlds. In her view, this means testing personal assumptions about the informants without forcing them in, as data collection aims to better understand the informants' views by looking through their eyes. She elaborates that it does not necessarily mean agreeing or disagreeing with these views but aiming at the best representation through our personal interpretations of what is going on in our informants' minds.

3.3.1 Semi-structured interviews

Fourteen interviews with twelve people were conducted. The 12 interviewed informants included four male and eight female participants, all Finnish nationals who spoke Finnish. All the interviews were conducted in Finnish. The age of the participants ranged between 35 and 55 years. 7 of the 12 interviewees had previous experience of agile or DT methods. Interviews were all performed virtually using Microsoft Teams. All the interviews were fully recorded and transcribed word for word apart from Interview 1, where continuous notes were written during the discussion. The average interview length was 45 minutes and 17 seconds, ranging from 21 minutes and 26 seconds at the shortest to 78 minutes and 26 seconds at the longest. This would generate 66782 words (in Finnish) of transcribed data, constituting 148 pages.

Interview methods followed the applications of the grounded theory approach in the form of intensive interviews (Charmaz, 2006). As she explains, the goal of an intensive interview is to start with a few open-ended questions that allow for statements and stories to emerge through semi-structured interviews. A 26-part questionnaire was used as a basis for the interviews, starting with open-ended questions and shifting towards emerging topics during the discussion. Due to the semi-structured nature of the interview, questions were only used selectively to gauge topics depending on the informant's role in the organization, meaning diverging from the questionnaire deeper into more specific topics. Questions would start from the more open-ended questions and gradually narrow down depending on the emerging topics. I would often ask the same question several times or clarifications for certain topics to build a more cohesive understanding. Thus, the questionnaire should be seen as a guideline that directs the initial interview questions and something to fall back on once a specific topic or area is exhausted.

This way, the questionnaire served as a baseline for lines of inquiry to be used for both "following hunches" (Charmaz, 2006, p. 26) and for theoretical sampling purposes by seeking answers to questions that had emerged from previous interviews. The questionnaire was built around basic premises of common factors in organizational and agile culture (e.g., Schein & Schein, 2016; Schabwer & Sutherland, 2020; Tolfo et al., 2009) as well as emerging topics during the research process.

Semi-structured interviews represent a predetermined open-ended set of questions but do not limit the questions like a structured interview (Dicicco-Bloom & Crabtree, 2006). They explain that, unlike structured interviews, the semi-structured interview allows for open-ended questions or emergent question structure during the interview process. The authors argue that the benefit of this approach is its ability to delve more deeply into the social and personal matters of social issues and better understand the social nature of the process. Thus, interviews represent a tool for mutual co-creation of the informants' experiences and understanding of different scenarios, giving the researcher better analytical control over gathering meaningful data (Charmaz, 2006). In Charmaz's constructivist grounded theory, the interviews start more open-ended. They are based on emerging themes, narrowing down as the theoretical frameworks develop and focus on filling the conceptual gaps in understanding. Moreover, the data collection focuses on the actions and processes of the different actors, or as Glaser (1978) calls them, "basic social processes." Basic social processes represent tacit actions and beliefs in the informants' expressions, actions, and processes that they can often take for granted but represent broader concepts and give a contextual understanding of the informants' subjective understanding and worldviews (Charmaz, 2006).

Data was triangulated by using highly diverse sources of informants for interview data. Using different informants from the different levels of the organizational hierarchy and units strengthens the findings' validity through cross-data validity checks (Patton, 2015). Asking questions from both sides allows for cross-checking of the data. For example, first questioning the management practices from the upper management and asking about the same practices from the employees to gain an additional vantage point to the same issue and, if necessary, asking for further clarification post-interview through email.

3.3.2 Observations

In addition to semi-structured interviews, observations of one virtual and one physical meeting were performed. In total, 5 hours of observation were done physically at the premises and 3 hours virtually. In both instances, continuous field notes were written during the observations due to the inability to record the physically or virtually observed meetings. In total, 6700 words (in Finnish) of field notes were written, constituting 19 pages of notes.

On top of taking notes on the ongoing discussions in physical observations, the focus was retained at the level of actions and processes, looking at behavioral cues, communication patterns, body language, and the physical space and how it was used to complement these factors. In virtual observations, I made comparisons between the communication patterns in physical and virtual observations, taking notes of the usage of "virtual body language" (i.e., usage of complementary emoticons/camera), how the presenter role was used, the use of voice between different participants, and how the chat function was used to complement the communications. These data were used to complement the interview data to find congruences between what was being said and what was done. This would help gain a broader understanding of "what is happening in the setting" (Charmaz, 2006, p. 39) and function as a form of method triangulation (Patton, 2015).

The observations were performed according to the Charmaz (2006) grounded theory with the aim to focus on the different individual and collective actions and processes. As she explains, the goal of limiting one's perspective to actions and processes in observations allows for the researcher to avoid "seeing data everywhere and nowhere" (Charmaz, 2006, p. 24). Therefore, the grounded theory provides a more connected picture of events, comparison with data, and earlier emergence of categories through a tighter framing. In grounded theory, observational data can be used when comparing data to data. For instance, after the first observation, I wrote down field notes coded and compiled into smaller memos that guided the second observation. These notes would tighten the focus and provide thick descriptions of the observational data compared to classical approaches to participative observations, where the data is coded at the end and might thus remain thin despite substantial amounts of data (Charmaz, 2006).

The observations were performed as direct observations. In direct observation (sometimes called naturalistic observation), the person primarily occupies a role of a "spectator," taking an unintrusive role in observing participants or a phenomenon (Taylor-Powell & Steele, 1996). Unlike participant observation, direct observation aims to observe the participants in their environment without interference from the subjects themselves (Spradley, 1980; Taylor-Powell & Steele, 1996). The goal of direct observations is thus to avoid interfering with or influencing behaviors and thus gain a more objective understanding of the participants (Taylor-Powell & Steele, 1996). The approach was chosen due to the limited scope of the participation during very time-intensive meetings that did not allow for significant interference during the meeting. Participant observations require intensive longitudinal participation that allows the researcher to immerse themselves in the participants setting (Spradley, 1980). However, the constraints given by SOK and the time constraints imposed for the thesis prevent such intensive participation in the field. Given these constraints, direct observation was chosen for its flexibility and ability to provide complementary data.

3.3.3 Internal and external documentation and surveys as secondary data

SOK gave access to classified internal documentation. The data included OKR planning cycles and long-term strategic goals. Due to the classified nature of the data itself, it will not be included as part of documentation or material. Internal data were used to re-examine and crosscheck data to the observational and interview findings to increase the validity of the findings as a form of data triangulation (Patton, 2015). While case research often includes surveys or questionnaires (Yin, 2018), SOK opted to perform their own surveys, which were shared to accompany the analysis. The surveys included qualitative and quantitative questionnaires about the quality of the agile transformation efforts.

The number of participants in the survey was 44 out of the 73 members of the HR department. The 12-part quantitative questionnaire was directed at individuals working in the HR department. The questionnaire included questions about the basic level of understanding of the agile values and principles in HR and the use of agile tools, psychological safety, customer centricity, risk-taking behaviors, continuous learning principles, management support, and OKR principles. In total, 12 quantitative questions were included in the survey, measured on a scale from 1-10. The questionnaire was conducted from 22.3 – 26.3.2022, just under three months after the changes had been launched. Another similar questionnaire was currently ongoing and would be finished by 15.8.2022. Due to time constraints, it could not be used to evaluate the progress of the individuals or teams at HR.

Table 2: List of internal quantitative questionnaire questions

Question Area	Question number	Question	Score
Current state & holistic understanding of agile	**1**	The agile principles are clear and transparent	6,7
	2	I know HR's agile methodology and follow them	6,5
	3	I am continuously using tools that support Agile	5,6
Level of agility in different areas in one's own team	**4**	I feel psychological safety and trust in my team	8,5
	5	We are performing courageous experimentation in our team and learning from them con-	7,5

	6	We always prioritize customer value in our work within our teams	8,2
	7	We have progressed as a team in the agile path as planned, as we intended	7,4
Agile in everyday work	**8**	Our team has clear goals	7,5
	9	OKR goals guide our work as a team	6,7
	10	I learn continuously, develop and exchange my knowledge	8,2
	11	My manager guarantees my success and supports me when it is needed	8,7
	12	We are practicing Agile principles as a team	6,4

Three additional multiple-choice questions were asked about the clarity of the OKR model and iterative cycles, beliefs about the functionality of the new operating model compared to the old models, and the excitement about the new changes. The multiple-choice allowed one choice per question and would indicate the number of participants that chose each choice. The number of answers to each choice in these questionnaires has been withdrawn due to a request from SOK but will be described in rough detail.

Table 3: List of multiple-choice questionnaires for individuals

Question	Choice no.	Choices
SOK's HR OKR model and the [iterative] cycle are clear to me	**1**	No
	2	Not Sufficiently
	3	Yes, they are clear, and I can function according to them
I believe that the new agile operating model functions better than the old [operating model]	**1**	No, and I don't think the situation will improve
	2	Not yet, but I will give a chance for the new model as long as it is supported even more than now
	3	A careful yes, and I believe the situation will improve quickly
	4	Yes, absolutely. The new operating model already functions better than the old
	5	I cannot answer (for example, I am new)
I am excited about our	**1**	Not at all excited about our new operating model

organization's new operating model	**2**	Not really excited, but I have recognized individual moments of excitement
	3	I am quite excited, at least about most of the new changes
	4	Yes, I am very excited, and the entirety is very motivating

Like the individual questionnaire findings, the OKR was the most controversial part of the changes. Most participants would indicate that the OKR cycle and the model were not sufficiently clear. However, most participants would still be supportive of the changes and the new operating model.

Moreover, two multiple-choice questions were asked at a team level, gauging the level of agility and the need for support as a team to reach future goals. Individual teams were not separated as part of the survey, thus not making it possible to compare the results directly between teams.

Table 4: List of multiple-choice questionnaires for teams:

Question	Choice no.	Choices
As a team, from the perspective of agile, I think we are:	**1**	At the very beginning, no concrete advancements have been made in agility
	2	We have taken small steps, but we are still seeking a common direction and our way of being agile
	3	Making good progress. Several steps have been taken, and we have a clear direction
	4	Very far. We are very disciplined and systematic. Agility is very established.
As a team, we know what we are pursuing (in agile) next	**1**	We do not know, and we are quite lost.
	2	Careful maybe, but we need plenty of support to continue
	3	Yes, but we would hope for some more support
	4	Yes, we can manage independently as a team

The team-level questionnaire would corroborate and highlight the diverse skill levels between the teams also recognized in the interviews. While individual teams had made significant progress, the answers indicated a gap in progress between teams. However, most teams would indicate having made progress towards agile after the first quarter and that they had a future goal in mind, and all teams claimed they had made at least some progress.

Lastly, the survey would conclude with a more open-ended capture of developmental areas recognized within the organization. The issues recognized were related to improving customer understanding and value creation, lacking transparency between teams, and insufficient understanding of the OKR model. Similarly, the recognized positives were related to improved information sharing, goal setting, and adopting agile practices.

Questionnaires and surveys can be a powerful tool to capture qualitative measures of attitudes, emotions, cognition, intentions, and behaviors (Rattray & Jones, 2007) that underlie the deeper levels of organizational culture (Schein & Schein, 2016). According to Charmaz (2006), while often intensive interviews are the single study method, surveys and participants' written accounts can complement the existing data well. However, due to the non-standardized nature of the surveys utilized at SOK HR, they can lack the necessary scientific rigor (Boynton & Greenhalgh, 2004; Rattray & Jones, 2007). As no data exists to confirm and contrast the findings, it is impossible to assess whether the informants interpret the questions the same way and draw conclusive results (Rattray & Jones, 2007). Moreover, inexperienced designers of surveys can often run into issues such as the "experimenter effect" as they can expect specific results from the questionnaires (Rosenthal & Jacobson, 1966) and thus fail to produce unbiased surveys (Sudman & Bradburn, 1982). Therefore, the surveys were not used as primary data to assess the organization but as a complimentary resource to compare with the interviews and observational data and as leads for theoretical sampling in interviews. This way, the survey data would deepen the understanding of the existing findings from the primary data sources.

Questionnaire data were used to contrast the observational and survey data findings. I would use the questionnaire data to compare and complement or find incongruences between the observational and survey data. Thus, it would serve as a form of method triangulation (Patton, 2015). Similarly, secondary sources such as internal classified documentation regarding agile transformation and external documentation such as annual reports, responsibility reviews, and S Group's blog were used as secondary data sources to supplement findings when available or relevant. In individual instances when external data was used, the sources were kept as reliable and close to the source as possible, using S Group's public material as a source. As Yin (2018) explains, documentation can be helpful for the affirmation and expansion of evidence and data from sources outside the primary data. Moreover, as he explains, documentation can also be used to make inferences towards further inquiry about a topic.

3.4 Analysis

Data analysis was done following the constructivist grounded theory procedures. In this process, the analysis is done by the process of coding the data. "Code," in this instance, refers to the categorization of a segment of data with a short name that summarizes the piece of data (Charmaz, 2006). In constructivist grounded theory, the focus is on the actions and the processes emerging from the data. Coding was performed on ATLAS.ti software. I did not use any predetermined groupings or categories. Instead, I let theoretical insights emerge from the data itself, rather than seeking theoretical perspectives to interpret data deliberately. However, due to time constraints, the theoretical part of the study was written before the analysis. In addition, I have extensive theoretical background knowledge of the topic. Prior knowledge inevitably affects the interpretation of these data, regardless of the aim of staying as close to the data as possible.

Grounded theory has been used extensively in agile research to study the social phenomenon of agile practices (Hoda, 2011; Hoda et al., 2012). Hoda et al. (2012) explain that grounded theory is beneficial for the study of agile as it allows the researcher to recognize and explain social interactions and behaviors central to self-organizing agile teams. As they note, the social phenomena of self-organizing agile teams have not yet been explored in detail, allowing for excellent theory-building rather than relying on and refining existing research that barely exists.

Following the grounded theory process, I started with initial coding. As Charmaz (2006) explains, the initial coding should start with line-by-line coding, where each line of data is presented with an individual code. As she explains, initial coding aims to pursue analytic ideas early on. She suggests that line-by-line coding forces one to remain close to the data and thoroughly analyze the early material allowing new analytic frames to emerge. She explains that doing a close reading of the data prevents one from forcing the data as much of the material is unlikely to fit any preconceived categories, in other words, seeing what we want to see in data.

For initial coding, line-by-line coding was done for the first two interviews. After this, I would perform sentence-by-sentence coding for the next eight interviews, and the last four would be done with paragraph-by-paragraph coding for the initial codes. As Charmaz, in an interview with Gibbs (2013), suggests, line-by-line coding is especially important at the start of the analysis process to stay as close to the data as possible. As she explains, line-by-line coding should be seen as a "heuristic device" rather than a strict process one should follow throughout the coding process.

Unlike typical qualitative coding that would focus on topics, ideas, or concepts, the codes would focus on actions and processes. The goal of focusing on actions and processes to the extent one can is to ascertain the codes remain grounded in data and prevent researchers from reflecting their own views on the data as easily (Charmaz, 2006). The codes would be titled primarily using gerunds, as Charmaz (2006) suggests. This means coding actions (verbs) with "-ing form" whenever possible. For instance**:** "allocating resources for developmental work," "sharing the responsibility of developmental work," and "performing project-style development." when describing how informants coped with resource constraints. Table 5 shows an example of the initial coding process, highlighting the missing customer voice, complex customer base, and insufficient prioritization of customer needs leading to the “missing customer” despite adopting customer-centric methods.

Table 5: An excerpt of the initial coding process

Raw Data	Initial Codes	Focused Codes
I would start with prioritizing [customer value]. First, I would get to know and segment the HR customers more accurately. We have 2000 people at the office [at SOK] who are in professional roles and have very different needs from agile. Within these, there are also different segments and very different customer groups who have very different needs in the professional organization that we have. We have IT developers who have very different needs from the commerce; we have the brick and mortar stores; they have very different needs. We should be able to recognize better the priorities that bring value from their perspective.	Missing value prioritization	Missing customer voice
	Understanding customer	
	Recognizing varying customer needs	
	Fragmented customer base	Fragmented customer base
	Recognizing varying customer needs	
	Missing customer voice	Missing customer voice

After conducting an initial set of observations and interviews and coding these data, I moved on to the second part of focused coding guided by grounded theory (Charmaz, 2006). As she explains, focused codes are meant to synthesize large segments of data and are often codes that are raised from the initial codes. In an interview, Charmaz elaborates that focused codes represent whole sets of data instead of individually most significant initial codes (Gibbs, 2013). She suggests that focused codes can be formed from “a bunch of codes” telling a story about what is happening in the data. In this way, some of the focused codes could represent a broader entity than that segment of data and be contextually tied to the broader narrative, creating codes with higher abstraction representing large portions of data.

I would select the individually most significant codes that were the most representative of the data from the analytical perspective. Early in the study, several informants would discuss the differences between operational work and contrast it with developmental work. This would raise several initial codes, such as: “prioritizing operational work over developmental work,” “overwhelmed by developmental work,” “too busy doing operative work,” and “balancing act between operative and developmental work.” This would lead to the focused code: “balancing act between operative and developmental work,” which was an emergent in-vivo code that best describes the evaluation process under limited resources. However, in some instances, I would synthesize several codes into more coherent focused codes with significantly stronger explanatory power about what is happening in the data. For instance, different initial codes such as “inconsistent identity formation,” “having preconceived notions of agile,” and “adopting agile practices flexibly,” would create the focused code “inconsistent agile identity formation”. The code describes the varied factors that led to an inconsistent agile identity at an organization level, despite commonly agreed upon agile approach at the HR-level. Quote from an Unidentified Informant highlights this focused code in full:

> I have heard a many people wonder that are we going towards a specific type of agile or what. The framework, like are we now under very specific set of rules about he we go about this. Or when there are [frameworks] like lean, understanding what that is about and how that relates [to agile]. I have to say the conversation is very multilateral and it is something that we must go through continuously. I feel like that here [in our team] none of us are really experts in agile, so somehow, we should also utilize those agile coaches and we should create our own glossary like “HR-Finland”. Like what is that OKR model about? Is it relevant in agile, and I feel we are getting mixed up in that.

I would continuously test these codes against the data to see if they would hold up and elevate initial codes to higher-level focused codes. In grounded theory, this process is called the constant comparison (Charmaz, 2006; Glaser & Strauss, 1967). This would lead to changing and leaving out certain focused codes and tentative categories as they could not hold up to scrutiny as the process continued. For instance, at the beginning of the study, many informants would talk about their organizational identity formation and change process during the agile transformation, which would form a tentative category from an in-vivo code called “old world versus new world.” In later interviews, this topic would not arise nearly as often or be relevant in explaining what was happening in the data. I would remove it due to insufficient explanatory power.

Continuous memoing was used for understanding focused codes, their boundary conditions, and which focused codes could be raised to categories. While some memos were primarily meant for personal record-keeping and sensemaking of the informants, others were for building a conceptual understanding of the tentative categories that arose from the early data. The early memos aim to understand “what is going on” in the field or the interviews (Charmaz, 2006). I would write early memos, drawing connections between the codes and what different informants said. As Charmaz (2006) recommended, the memos retain a playful quality focusing on the aesthetics and rhetorical tools of the writing, which is not so constrained by the academic writing style. In this instance, I would play with the idea at both figurative and literal levels of analysis to create a broader understanding of the subject.

In this example, I combined different informants' understanding of what “regular work” and “developmental work” meant to them and how they saw their relationship between the two types of work:

> The “developmental work” versus “regular work” dichotomy represents the struggle to split oneself between the two types of work. Regular work is seen as mandatory. Regular work is something one has to do as they were hired to perform that type of work. It is understood that regular work keeps the business going. For an organization to exist, there must be operational work. Developmental work is something extra. Something beyond one’s defined tasks, like an extracurricular activity one engages in, should they find time for it in their busy schedule. Developmental work is beneficial, but it is not strictly necessary. Even if we do not perform developmental work, we will still be here tomorrow, the next week, and the next month.
>
> The value of developmental work is understood yet disconnected. There is temporal myopia between developmental work and its outcomes. Developmental work will not change anything here and now; therefore, it can wait. What matters now is regular work, which means we can exist tomorrow. Existence becomes a “daily struggle” as we cannot focus on the future when we have more pressing concerns, which can only be handled through operational work.

The memoing process would help look at whether certain focused codes could stand up to scrutiny as their independent categories and refine them. As Charmaz (2006) explains, the early memoing process should be used to assess the properties and how the category relates to other categories. Moreover, memoing would help identify the knowledge gaps in the research. For instance, the memo on the “balancing act between operational and developmental work” dichotomy would help understand why the problems existed in the first place. The memo would highlight the issue at both the individual and organizational levels. The thinly-spread resources from an organizational level would force the individuals to prioritize operational work, creating a scenario of organizational myopia where the present would be favored over the future to maintain existence.

Identifying these gaps is a key process in grounded theory for theoretical sampling (Charmaz, 2006). She explains that theoretical sampling should be understood as a method for refining theoretical categories. During the process of memoing and focused coding, analytical gaps emerged. I started narrowing down the questions toward answering these analytical gaps. Questions such as “How can a customer be missing in a customer-centric development approach, especially when there is so much talk about the customer?” and “How can the amount of operative work increase during agile transformation?” would emerge from the interview data and as part of the memoing process. Research gaps would also emerge from the inconsistencies between interview, observational, and survey data. For instance, while initial interviews would highlight good adoption of new routines and processes, the questionnaire data would show weaker adoption, leading me to analyze the disparity further. Theoretical sampling focused on answering these questions and explaining the categories formed at this point.

After refining the categories, I started the process of theoretical sorting. As Charmaz (2006) explains, theoretical sorting is a process of compiling and integrating memos, processes, and categories into a more coherent category that explains the empirical flow of evidence. She suggests using physical space and printing memos on pieces of paper to allow visualization of the categorical process. I mirrored this process using the virtual whiteboard tool Miro, where I could lay out all my data and memos that helped the categorization process. In this sense, the process of theoretical sorting becomes a literal physical rearrangement of different memos and pieces of data, formed into different clusters and comparative categories. The use of visualization is used to help draw better connections between the data and make sense of the greater whole (Charmaz, 2006).

I used the process of theoretical sorting to draw connections and integrate existing categories into more holistic abstractions of the data through what Charmaz (2006, p. 115) calls "theoretical integration of categories." For instance, at this point, I would combine the three different categories to create the category of "Balancing between agile and culture of hierarchy": (1) "re-emerging hierarchies" describing how despite lowered structured hierarchies, new forms of control and hierarchy would emerge; (2) "restricting strategic control" explaining how strategic control and central planning was retained at the top and how teams would personally create alignment at team-level and cope with these restrictions; and (3) "becoming independent," highlighting how despite the significant team-level autonomy the teams were unable to be fully independent with lacking guidance and understanding of agile philosophy and principles. The balancing between agile and culture of hierarchy category would highlight how while deconstructing the hierarchical structures and practices, they would simultaneously re-create and reinforce new and pre-existing hierarchical practices bound by their hierarchical past during the beginning 6 months of the change. For every change made, there would be an antithesis of that change that simultaneously impeded or was actively reinforced by the same change.

The analytical process described here illustrates how I followed the grounded theory process to reach specific findings but not the entire research process. While the process described here is quite linear, the research process also involves the constant comparison method built into the grounded theory process (Charmaz, 2006). This way, the research process has been more complicated and continuous back-and-forth through comparative methods between the data, memos, and codes. For example, this involved going back to codes and data to refine existing memos, categories, and conceptual understanding, drawing connections between codes memos, and breaking them up to form new ones to make better sense of the data. As Charmaz in Gibbs (2013) explains, the grounded theory approach should be seen as a tool to help research rather than a strict process to be followed.

The flexibility of the process and the ability to always go back is what grounds the analysis keeping it close to the data (Charmaz, 2006). She argues that flexibility in the process allows for emergent findings to be appropriated rather than force-fit into the existing categories. In this way, one should not let the process reify the analysis of what grounded theory can and cannot do or use it as a strict guideline; instead, it should be used to guide analysis.

3.5 Reliability, validity, and generalizability

Due to the different epistemological bases for qualitative research, there is no universal consensus for assessing qualitative research's quality (Leung, 2015; Lewis et al., 2003). Some authors take the ontological and phenomenological angle that due to the nature of qualitative research, the field itself cannot be unified, compared, or synthesized, that any attempts to do so would be conceptually wrong, and that any criteria used to assess the quality of qualitative research is futile (e.g., Dixon-Woods et al., 2004; Rolfe et al., 2006). Whereas others have taken the criticism of lack of generalizability to the heart, creating more objectivist approaches (e.g., Glaser & Strauss, 1967)

This thesis takes the stance somewhere in the middle of these claims by conforming to the idea that some level of quality control can be maintained. The robustness and quality of this study were assessed from the three research evaluation metrics: validity, reliability, and generalizability (Leung, 2015). Though the terms themselves come from and are primarily used by quantitative researchers, qualitative research can also be assessed using these metrics based on a different epistemological basis (Leung, 2015; Lewis et al., 2003). While other social constructionist researchers (e.g., Lincoln & Guba, 1985) prefer to use terms such as dependability, credibility, and transferability, the terminology used here largely shares their meaning despite these semantic differences. Thus, I will use the quantitative terminology while briefly explaining the epistemological differences in this study to assess the research and clarify the differences and the steps taken to achieve rigor or “trustworthiness,” as Lincoln and Guba (1985) call it.

3.5.1 Reliability

In quantitative research, the term reliability is used to assess the exact replicability of the research. In qualitative research, this outcome is impossible by the very nature of the research style, making the approach epistemologically futile. In constructivist terms, the replicability of a study also becomes equally meaningless, as no single interpretive reality exists (Lewis et al., 2003). Instead, reliability for qualitative research could be seen as a form of consistency (Leung, 2015), trustworthiness (Glaser & Strauss, 1967), or confirmability (Lewis et al., 2003). At the heart of all these terms stands the idea of how well the researcher(s) can indicate that they have not misinterpreted or invented the data; that the process of analysis has been sound without carelessness; and that the data is reflective of the informants' experience (Leung, 2015; Lewis et al., 2003; Lincoln & Guba, 1985).

Lewis et al. (2003) suggest that reliability can be achieved by having a representative sample, consistent fieldwork, analysis, and interpretations supported by the evidence, and equal opportunity for perspectives and relevant experiences. As previously discussed, the sample included members of the organization from various levels, teams, and departments, all related to the agile transformation process. All of them were given an equal amount of time in interviews. In this way, reasonable representativeness of the sample was gathered with equal opportunities for different perspectives. However, Charmaz (2006) would argue that the sampling in the study should not be from the perspective of population representativeness but rather be aimed toward theory construction, which remained the primary focus of this study.

Thus, the reliability of this study relies primarily on its data gathering and analytic process. Achieving reliability in the data gathering and analytic process can be helped by following the process systematically and showing reflexiveness during the analysis process – being conscious of one's perspectives and that of others and how these perspectives might shape the interpretation of the analysis (Charmaz, 2006; Patton, 2015). The constructivist grounded theory approach can allow for a more accurate interpretation of the informants' worlds when personal interpretations are accounted for in the process (Charmaz, 2006). Moreover, the iterative analysis process and comparing data to data and memoing were made separately after each interview to ensure systematic data analysis and interpretations. All memos were saved and updated as new information arose and subsequently compared. In other words, the process I demonstrated in this thesis was closely followed to ensure the reliability of the interpretations and the analysis.

Lastly, all the data were collected within the limitations of the fieldwork. Apart from Interview 1, all interviews were recorded and transcribed to get as accurate a representation as possible. In observations where the recording was not feasible due to limitations set by the case organization, field notes were continuously written using the action and process-oriented method of grounded theory to retain focus (Charmaz, 2006). This allowed for a thick description of the observation data despite the lack of recordings.

3.5.2 Validity

In a quantitative study and under positivist epistemology, the term validity is associated with the appropriateness of the tools used for the inquiry, such as the appropriateness of the research questions for the desired outcomes, choice of methodology, study design, sampling, and data analysis (Leung, 2015). However, in constructivism, the issue for the researcher(s) becomes that they must demonstrate that the different constructions of reality have been adequately represented (Lincoln & Guba, 1985). The authors argue this can be helped in two ways: (1) by conducting the inquiry so that the likelihood that the findings are found to be credible is increased and (2) by having the findings approved by the constructors themselves. Lincoln & Guba (1985I h) suggest that the validity of the findings can be supported by: (1) prolonged engagement with the subject, long-term observation, and triangulation, and (2) peer debriefing, referential adequacy, and member checking for validation by constructors themselves.

Due to the time limitations of the master's thesis and the access to observations from the case company, prolonged exposure to SOK HR was not possible. However, extensive triangulation, peer debriefing from the thesis supervisor and advisor, and member checks as a demonstration of the findings were all performed as part of the study. Feedback was sought from my thesis supervisor throughout the writing process, who functioned as part of peer debriefing in the research process.

Though, as Lincoln & Guba (1985) argue, of these methods, the member checks become the most important form of validation as they represent the interpretations of the worlds of our informants. They suggest that if the researcher's constructions of their informants are recognizable by the same people, it can be argued that the representation of their realities is adequate. To this end, presentations to the case organization members (many of whom were participants in the study) were made to ensure the validity of the interpretations alongside post-interview emails for clarification if any uncertainty in the interpretation arose and an intensive final check from the thesis advisor. However, Charmaz (2006) argues that in some cases, the informants offer only a partial interpretation, especially concerning tacit beliefs and actions. She explains that, at times, the researchers might have to dig deeper for a more complete and comprehensive explanation, which often goes beyond the laypersons' conceptions of reality. While this does not necessarily mean that the representations would be thus rendered unrecognizable, articulating tacit assumptions and beliefs can certainly run the risk of confusion even from the person who believes in them as, by definition, they are difficult to articulate (Schein & Schein, 2016).

Triangulation, as explained by Patton (2015), can be divided into four distinct types**:** (1) method triangulation using multiple methods to conduct the study; (2) data source triangulation with the use of various data sources; (3) analyst triangulation by using multiple researchers; and (4) theory triangulation by using multiple theoretical perspectives to look at the data. Mixed-method triangulation was performed utilizing observations, semi-structured interviews, internal and external documentation, and internal survey data. Data source triangulation was done by interviewing members from the different units, teams, and levels of the organization representing different roles and utilizing external sources. Lastly, theory triangulation was used by utilizing theory from software engineering, management, sociology, and organizational psychology literature related to agile organizations and self-managing teams.

While triangulation is often seen as a tool to confirm findings, it can also be used to gain deeper insight into a phenomenon when inconsistencies arise (Patton, 2015). For instance, method triangulation showed discrepancies between interview, observation, and survey data. For example, psychological safety would be highlighted as being very high in the surveys, whereas informants would not express feeling equally high levels of psychological safety in interviews. In this instance, the discrepancies would create a more holistic understanding of how the informants viewed psychological safety.

Other forms of validity evaluation can be done by assessing whether methodology and sampling are appropriate for the context (Leung, 2015). The constructivist grounded-theory approach has been built with context-dependence and cultural sensitivity fit for studying specific cultures contextually situated in a particular place and time (Charmaz, 2006).

3.5.3 Generalizability

The approach to generalizability under the constructivist grounded theory differs from traditional scientific research approaches. For instance, Lewis et al. (2003) suggest that under constructivism, generalizability means the transferability of findings of a particular case to others based on similar context and conditions, as qualitative research does not aim toward generalization. Generalizability can rarely be the end goal of qualitative interpretive research as the studies are rooted in studying a specific phenomenon concerning a certain population tied to a particular time, location, and context (Charmaz, 2006; Leung, 2015). As Charmaz (2006) argues, contrary to objectivist grounded theory, generality can, but will not necessarily, emerge from the analytic process. Still, there should not be an a priori goal for generalization as it risks forcing the data.

Thus, an alternative for generalizability is transferability (Lincoln & Guba, 1985). The authors argue that qualitative research cannot establish external validity (i.e., applicability in other contexts or settings) as it must be empirically validated. The researcher's job thus becomes to provide an accurate representation of the study's setting – or in other words, a thick description. They state it is not the researcher's responsibility to provide generalizability but to provide a sufficient description or a "data base" that can be used for judgments of potential applications to test for the transferability of the findings. Patton (2015, p. 1028) corresponds to these points by suggesting that qualitative research should contribute toward “hypotheses for future applicability and testing,” especially on culturally bound topics.

To this day, the concept of "thick description" remains vague (Patton, 2015). What is meant by thick description is not just an overly detailed description of events but something more. The concept was first introduced by Geertz (1973), who described the difference between a "thin description" and a "thick description" and the different meanings the two descriptions convey. As he explains, whereas thin descriptions can be detailed accounts of what is physically happening, thick description considers the socio-cultural factors that describe what these actions convey about the culture. To illustrate, he explains the distinction between an involuntary twitch of an eyelid and a wink; one is merely an involuntary physical action, whereas the other is a form of communication laden with cultural implications. As he elaborates, a thin description would describe what someone is doing: a rapid contraction of the eyelid; a thick description would provide a detailed description of what this symbolic action means in this specific environmental context to differentiate between the two actions and decipher their meaning.

No person makes these interpretations and descriptions out of nothing – researchers often bring with them a theoretical understanding of the world that is interwoven in the description itself with specific terminology that in themselves are laden with an immense amount of information (Charmaz, 2006; Geertz, 1973). Terms used in this thesis, such as "organizational culture," "organizational identity," and "agile," are in themselves resting on the laurels of the works of prior researchers that allow the transferability of their works as the meanings are both explicitly and implicitly assigned to these terms. Thus, as Geertz (1973) argues, the thick description includes the interpretation and the dense theory upon which the language used to interpret symbolic actions rests.

I have aimed to make the transferability of this study as clear as possible. Any claims made during the findings portion of this study are supported by vivid descriptions of the context, scene, and people. Any implicit meanings and words are explained in their historical and temporal context to give the reader the greatest understanding of the phenomenon. The symbolic actions observed are contextualized with the help of earlier theory and generate an extensive understanding of the organization. The findings section aims to create a continuous ongoing dialectical comparison between the findings in the forms of quotes and descriptions and the prior theory and to illustrate the different interpretive frames of the informants. The goal is to generate a thick description of the informants' tacit meanings of actions and words. This way, the descriptions can connect the findings and the context in which they are embedded as clearly as possible.

4 Findings

The individuals partaking in the study will be referred to as “Informants,” with a number differentiating each informant. When critical points about the organization or information that could compromise the informant's identity, the informant will be referred to as an “Unidentified informant” to protect the informant's identity further. In addition, any observations made of the informants will also be referred to as “Unidentified informants” to avoid making any connections to the interview data. Moreover, each informant will be referred to with a singular “they” to protect informants' identities.

4.1 Social complexity, siloing, and fragmentation in large-scale agile

4.1.1 We are becoming agile, or are we? Social fragmentation and agile Identity

The interview analysis would reveal how many teams took liberties redefining the pre-existing concepts of agile, accommodating them to the team’s contextual needs. At HR, adopting practices would happen on a mutually defined yet flexible adaptation of commonly agreed upon practices where teams would learn as they go. At organization level the lack of commonly shared guidelines and goals was a deliberate choice due to the cross-functional teams' diverse team structures and roles. However, the relaxed definitions would lead to questioning whether the organization was becoming agile and confusion among the less experienced informants about what part of the change was part of "becoming agile,” leading to social fragmentation and inconsistent expectations of the changes. Moreover, inconsistent practices across teams would make cross-team and cross-unit collaboration increasingly challenging as changes progressed.

When asked what agile meant to the informants, various interpretations of the practice followed, none quite similar. As a primarily customer-facing organization, the unifying factor in defining agile would be the customer, as described by Informant 4:

> To me, producing customer value that we do things that the customer needs [defines agile]. [Which] we are and are trying to take into account in the future. Thinking at all points is this something we should be doing, that it is not just based on pure gut feeling. I believe we are learning to get away from it [making decisions based on intuition], and we also want to do that.

The customer at the center of the organization was a unanimous finding. As a customer cooperative, the S Group often represented the "customer as an owner," reflecting the organization’s customer-centricity and customer ownership. Many informants would also focus on the efficiency and prioritization of work as Informant 6 would define the essential outcomes of agile:

> In modern work life, people focus on too many things at once and do not get anything done, and that is what an agile model is for, as I understand it… When we focus on fewer things at once and have clear priorities, the organization does things faster and uses less time on waste. That is the benefit I would like to see, as it would help prioritize and reduce the chaos in my head so I would know what to focus on

The complex organizational structure and varying operating contexts led to a very loose definition of what it meant to be agile. Several informants would explain how SOK purposefully undertook this approach of contextually embedded agile practices as they felt that a common approach would not be feasible in such a complex organization, as explained by Informant 1:

> SOK does not really have a unified model or approach. We would not have buy-in towards it as the different functions have such differing needs. We have a lot of flexibility so that the teams can practice as they go. We do not have any ready-to-use model, but if anything, we are trying to emulate the Spotify model. We will try to have a bit more unified implementation methods by the end of the next quarter.

Other informants agreed with this sentiment. As Informant 9 explained, the stepwise approach was seen as necessary due to the different maturity levels and functional needs: “I do not even see it as a possibility that someone like the chief executive officer would have simply demanded: ‘Alright, now in every organization we will have agile’ because the maturity levels are so very different.”

However, some informants with a stronger notion of how agile organizations should operate were less than happy with the approach taken as Unidentified Informant would explain**:** “To me, it is not at all clear how our new HR organization, how would I say it, would be agile. I do not recognize that it is.” Similarly, the concept of OKR as an agile framework was not well received by everyone. Informant 5 explained that as the maturity levels across the organization varied heavily, it was difficult to challenge what "agile" is against the dominant definition established at SOK HR: “We just jumped into these OKRs and said it is agile. Realistically, that is not agile. It is a management framework. We have so many people coming from different levels of understanding that it is difficult to challenge that notion.”

Agile in the HR context is still very novel. The novel environment raised additional questions about how agile would manifest in such a context. While the ambiguity would allow for the teams to experiment more freely without being tied to definitions and learn as they go, the lack of stricter facilitation or common direction would lead the teams to adapt differing interpretations and agile identities, as explained by Informant 8:

> At some point, I did a course from [an IT organization] about agile, and there they did not mention OKRs with a single word... Is it even relevant in agile, or what is it? We are getting all these terms mixed up.

The fragmented approach toward agile adoption in teams would lead to a fragmented identity and vocabulary, becoming another future concern. This led many informants to wonder what agile would mean from an HR perspective and if a more unified understanding of the framework should be formed to increase clarity, as expressed by Informant 8:

> There is an interesting point to be made here: how do you define agile, and how does it affect the application [of agile] in the organization when we do not even know if we are talking about the same things? Creating that kind of common understanding has been really difficult...We need to create a common understanding. We have recruited many new people to SOK who might have worked under agile, so we need to create a common ground for how we understand agile through our work.

Many teams would take great liberties in creating makeshift solutions whenever problems arose. While the teams were working inside the HR, this would not become an issue as the teams were synchronized on 3-month iterations and working on mutual practices. However, Informant 12 explained that the fragmentation of methodology would make communication and cooperation in cross-functional teams that reached beyond unit boundaries teams complex when everyone had their version of agile and the teams were not synchronized on their iterations:

> Now that we have been piloting these [cross-functional teams], one challenge we have noticed is how we could synchronize tasks; how could we create structures through which longer processes would move through seamlessly so that one team does not have to wait after one team is done with one part... Right now, we have very varying practices. One team has two-month OKRs, another three [months], and some might even have four months. Even if they were the same length, there are situations where some started [the iteration cycle] in January and others in February.

The highly diverse backgrounds and levels of understanding about agile would create different expectations and solutions between teams on how agile should be deployed. This would further fragment the agile identity and the solution space. While many teams were not yet collaborating, the early pilot of cross-functional teams deployed in advance would highlight problems with the fragmentation of agile identities and methodology. When teams do not have shared language, tools, or frameworks, synchronizing and communicating between two teams becomes immensely difficult, making linear cooperation where the projects would flow seamlessly challenging.

4.1.2 Technologically transparent yet structurally siloed

While the HR department aimed for "radical transparency" as part of the organizational transformation by making all online communications transparent, these ambitions could only be met partially. The analysis of the interviews indicated that though the new changes brought upon a "culture of transparency," the legacy of working within teams and not across them remained. As few pre-existing communications channels or systematic meetings existed before the transformation to encourage cross-team collaboration, it did not emerge naturally despite the open communication channels. Moreover, in cross-functional pilot teams, the legacy systems of service-based financing models led to a lack of shared resources that would inhibit cross-functional collaboration, further entrenching teams and units into functional siloes.

Before the change, the issue of transparency was caused by a lack of systematic approaches to ensure transparency, as stated by Informant 2: "It is not like we were trying to hide anything that we were doing before, things just happened to be forgotten, and we would not remember to update the information." After the agile transformation had begun, informants would highlight that the transparency had improved. This would include the usage of different tools to make the "budgets and financials transparent and create an overall understanding of the budget," as Informant 6 would proclaim. In addition, the teams would have open access to "channel hierarchies where we can see other teams' documents and what they are discussing and having open channels to message them" and "getting briefings of the management teams discussions," as Informant 9 would add.

The overall effect of this change was perceived well. Informants would describe how they were building "a culture of transparency" at HR, as Informant 9 explained: "What this change has brought upon is a kind of culture of transparency and openness." The whole department being equally transparent from top to bottom and the fact that every piece of communication would be transparent was seen as a positive nudge towards clearer communications and a culture of transparency by all informants.

Despite these intentions, the technological solutions, organizational structures, and a lack of systematic approaches impeded these efforts, especially at the organizational level. Thus, reaching full transparency through technological solutions was only possible hypothetically. Though every text channel and piece of communication over text would be transparent, most communications in agile rely on informal communications. Several informants felt that the number of communication channels and the amount of information would make it difficult to parse relevant issues. In addition, as information was scattered across communication tools, the amount of information would become so overwhelming that even if they had the opportunity to look at other teams' communications, they would soon realize they neither had the time or interest in doing so as Informant 9 would summarize:

> When your workdays are so hectic and quick-tempoed, and there are so many channels. When I see on top of all these Microsoft channels, WordPress, and WorkSheet worlds, your colleagues are contacting you from different channels and business units using different channels. I might get text messages and Teams chats... So, I think the massive cacophony limits your ability to start looking up more information proactively.

In addition to the overwhelming amount of information, the lack of systematic inter-team communications would also prevent achieving transparency. As the HR department had a history in structural siloing where teams were used to working independently, these practices would continue even in the smaller teams. Despite many informants stressing the ability to contact others directly if needed, only individual informants explained they had done so when required, as Unidentified Informant would explain about siloing:

> I am used to thinking through processes and connecting to the relevant stakeholders no matter where they work so that we can understand what is going on...But you hear a lot of this talk of how: "well, we actually are not collaborating with them at all. And no, we have never actually even heard what they are doing in there," even though it could be really relevant from the perspective of their work tasks as well.

According to Informant 7, the functional siloing was widely recognized: "We have raised this [siloing] issue that we would like to hear more from other teams, and we would have the necessary preconditions to do so." Plans included the facilitation of "going to see other teams' retrospectives to learn from other teams, but we have not undertaken it yet," as Informant 10 stated.

Another reason for structural siloing was that the different units did not share common resources that would reach across functional boundaries. This meant that service fees would be tracked on a unit-by-unit basis, with each having its separate pool of resources accredited to them, meaning that cross-unit needs would easily be missed. This would make cross-functional collaboration increasingly difficult, as Informant 12 would describe: “Our service fees are siloed in different units, and they are not like a SOK’s common resource. Then it becomes internally politicized when one unit would have to pay other unit’s [cross-unit] process development.”

The siloing of resources would lead to scenarios where early pilot teams meant to do cross-functional work would sometimes be inhibited from working together, as larger projects that would cut through the organization would incur extra costs for other units. As each unit would wish to protect its limited resources, it would be challenging to align interests across units. Personalized resources would actively discourage other units from incurring costs from projects that they did not have to, even if the greater whole would benefit in the process, as Informant 12 would explain:

> Even if we had some process that would reach other business units, we saw that it would make sense to do it in another unit that is not ours, as the whole process would be more efficient. This would incur extra costs for the other unit.

At the structural level, transparency could be achieved technologically. Still, true transparency of communications would become challenging due to the lack of shared standard practices at the organizational level, standardized forms of communications, or common resources. Informants would both express the lack of shared resources in making cross-unit collaboration and communication more difficult and the myriad communication channels leading to an information overflow, making parsing relevant information difficult. This would highlight the myriad of challenges in a complex organization where work had traditionally been done independently at both team and unit levels, rooting itself in its prior practices and requiring the establishment of new systematic communications.

4.2 Agile artifacts

4.2.1 Physical and virtual artifacts and physicality in agile

The observation and interview data analysis revealed the important role of physical co-location and usage of the physical and virtual artifacts. While informants highlighted the success of performing agile remotely, physical artifacts complement these practices by improving organizational transparency, facilitating and structuring work, and providing additional information.

The observed HR team was primarily physically co-located when working together, though otherwise working remotely. Despite the COVID-19, the team took caution and considered physical presence important in agile. While team members could work remotely if needed, physical co-location was encouraged. Only two of the twenty informants attended the meeting remotely during my physical observation. Informant 1 would explain: “While we have not had any issues shifting to remote work, we have been primarily conducting these [OKR] meetings face-to-face.”

Like many agile organizations, SOK HR used a physical workspace called the "situation room" *(Finnish: tilannehuone)* to illustrate essential parts of the agile transformation. A specific room from an office was used for this process. The room walls were covered with key aspects of the agile transformation. Different graphs would illustrate the current situation and future goals alongside post-it notes filled with bits of information that fully immerse the person entering the space.

Physical artifacts played a subtle yet significant role through communication with the help of physical objects in the situation room. For instance, a planning day meeting was held primarily in the situation room. While different people would present, they would use the entire space to their advantage by picking up notes from the walls that were put there with magnets to show them what they meant or point at the different graphs to discuss the various relevant topics. Moreover, the conversation's structure followed the six core topics illustrated by the six distinct clusters of graphs and post-its on the walls. As the team moved from one topic to another, they would physically move from one cluster to another. The space itself also facilitated the conversation with minimal setup. For instance, when discussing the renewed strategy, Unidentified Informant asked the rest of the team: “Have we discussed the HR work and the strategic foundations yet? Here [points at the wall with the new strategic goals] we have the new ones, and those [old strategic goals] should not be followed anymore.”

After work was done, the team left their work from the meeting on the walls for others to see. For example, during a retrospective, the team wrote many post-it notes related to the session. These post-it notes were left on the wall underneath a retrospective cluster. This way, the work done during the session would also be visible to those who had not been part of the meeting.

The situation room was integrated into the rest of SOK’s working spaces in a small alcove to the side of the shared office space, remaining accessible to all the organizational members. This way, the physical space forms a multipurpose for work. First, it functions as an information radiator providing a broad understanding of the change progress with a glance. The situation room also guides and facilitates the conversation by giving it a clearer structure in meetings and visually illustrating work without requiring additional work. In this manner, the physical co-location of the teams and the physical space are highly intertwined. The physical discourse is bolstered by the physical tools and space utilized to make communications more effective.

On top of the physical situation room, there was also a "virtual situation room." The virtual situation room was hosted in the team intra, where everyone had access to any given material. The virtual situation room was updated more frequently with the most relevant information, providing a more comprehensive look at the project and the transformation. While teams would make comments and communicate using the virtual room, it could not be used similarly to enhance communications continuously through the active use of the space itself due to the limitations of how digital space provides limited ability for physical expression.

In addition to the situation room, many informants quickly pointed out the usage of virtual Kanban boards. In this instance, each team had its own Kanban board to track its progress, and if issues would arise that could not be solved at the team level, these could be raised to the management team level to be solved. The usage of Kanban boards was positively associated with all informants. The highlighted benefits were the transparency Kanbans provided: “Kanban has been an excellent way to involve everyone even if they would not immediately know what is going on," as Informant 10 mentioned. Kanbans would also help prioritize work: “I have gotten way fewer requests of issues that do not belong to my work desk, which has been a good thing. It is way more efficient that people can consult the experts in that area,” as Informant 10 would later add.

The physical space and artifacts would thus serve a multipurpose role. Functioning simultaneously as tools for work, communication, structuring presentations, and enforcing the values of transparency. On top of the information radiator role, the physical space and co-location would be used to bolster many activities enabled by the space itself. This contrast could also be seen more clearly between physical and virtual artifacts, where the virtual artifacts would merely serve as information sharing and transparency but not as a communication tool.

4.2.2 Routines and processes give structure and facilitate agile

The routines and processes played a significant role in giving common structure and systemized working practices according to the analysis of the interviews and observations. Several informants would highlight the importance of the new routines as part of structured learning, which would be facilitated through holding one another accountable for following said rules. The routines and processes constituted the most visible part of the change, which some informants felt focused on the “low hanging fruits” and easy wins rather than what they considered as core principles of agile or the mutually designed agile principles that were being continuously discussed and iterated upon.

The routines and processes, or “rituals and ceremonies,” as the informants called them, constituted many practices adopted from traditional agile and OKR practices based on OKR literature (e.g., Doerr, 2018; Hämäläinen & Sora, 2020). The adopted routines and processes constituted a hybrid model of a relatively free-form exploration of various methods.

As in most agile practices, HR would rely on co-designed shared processes that structure each iteration commonly used in agile practices, forming the backbone of each quarter. These included Planning Days, where each quarter's OKRs were planned separately by the extended management team up to a month before the next quarter and by the individual teams afterward. The agile teams were asked to bring input to planning and all teams were presented in extended management team by its members. Teams would hold weekly meetings to discuss potential impediments and update status and Kanbans.

Retrospectives happened at the end of each Sprint or quarter, depending on the team. The retrospective is a tool for mutual learning for the teams. During Retrospectives, the teams will think of three different main points: (1) what has gone well or is working, (2) what could be improved or changed and (3) based on these findings, what are the things that we should develop further? The importance of "what did not work?" was highlighted by Unidentified Informant, who, during a retrospective, stated: "It is important that we also recognize things that currently do not work because we are also trying to practice being more transparent as an organization." Bringing up things that did not work or that teams were having difficulties with was highlighted by many informants as necessary support toward learning. Informants would state that retrospectives supported many agile principles, facilitating open feedback and communication, and improving continuous learning by bringing up potential issues. However, Informant 9 saw room for improvement, as they considered the reflections to be too narrow, focusing on the immediate concerns rather than reflecting on the bigger picture: "What could then be the way in which we evaluate the greater whole from a learning perspective and retrospective in the same way? Right now, we have retrospectives of some individual sessions or workshops." In addition, demos were another form of learning facilitated within teams. In demos, teams will demonstrate and display the work that they have achieved during the Sprint/Quarter and the work that they have done.

Only the IT teams were performing sprints. When asked about the sprints, Informant 1 stated: "There is no plan, for now, to move towards sprints as we just want the teams to learn the basic practices for now." Moreover, Informant 3 corroborated the statement by explaining: "Well, you cannot see sprints yet. It is a problem that we have. Since we tend to have such slim resources, we have not been able to establish sprints yet."

Informants felt that the structured approach of the new routines and processes was beneficial to them and among the few clearer uniform improvements to the previous style of work: "It [agile] has brought this kind of structure and tracking into the things that we do, making it more concrete. It has brought this kind of team-level unity; we are doing the same things [together]," as Informant 2 would explain. Most often, informants referred to themselves as becoming more "systematic" and "rigorous" as they followed the quarterly clock set by the agile and OKR models. All informants had adopted some, if not most, of the routines and processes.

A success factor in adopting new routines is that they were strictly followed. Team members would actively engage in the practices and remind each other to "stick to the objectives" and hold one another accountable for sticking to them. As Informant 6 described: "The rituals work as long as everyone holds onto them and holds each other accountable for sticking to the rituals." Moreover, many informants explained that the success factor in adopting the new routines and rituals was communicating why the new rituals and ceremonies were necessary, enabling smoother adoption, as explained by Informant 8: "At the beginning, people might get a bit of a feeling of: 'well what is the use of this,' and really we can only tell in the long run, what is the benefit and you need quite a bit of discussion about it." On the contrary, the most significant impediment would be the sheer lack of time and poor resource allocation toward the changes. As most informants would reckon, as all changes were rolled out simultaneously and piled on top of existing responsibilities, the rituals and routines could easily be "left in the dust of the everyday work," as Informant 11 explained.

The routines and rituals would be the most visible form of change across the teams. Creating clearer structures and systematic approaches toward agile. Some informants felt this approach could be detrimental, going for the "low hanging fruits" and focusing on the wrong things: "[We are] going tools first, talking about what terms we use or that we have OKRs, but that is not agile" as Informant 5 would state. Without a holistic understanding of the "agile mindset" or "agile philosophy," as many informants called it, the tools alone could provide limited value. Informant 8 would reckon that the agile principles would provide more cross-cutting value across the organization than the processes: "Some people are not even using the OKRs as they are not on teams that use them. But the agile principles, or the ones we are using, I think everyone can benefit from them."

4.3 Losing the customer in customer centricity

Regardless of the highly espoused status of the customer's role at the organization, analysis of the interview, observation, and secondary data demonstrated a decoupled state between talking about the customer and being customer centric. The decoupled state would arise from outdated practices with an apparent lack of value co-creation opportunities and an increasingly complex customer base with varying customer needs. Early steps towards improving customer-centricity had been taken or were underway. The new practices had been co-designed with the customers, and new HR business partner roles and the DT model were planned for the third quarter. However, due to time constraints, the improvements from the new HR business partner roles and DT could not yet be analyzed or evaluated as part of this study.

As a cooperative, being customer-centric was central for the S Group and SOK. Much of the external marketing material from the S Group focuses on being a cooperative organization owned and shaped by its customers. The key term S Group often used is the “customer as an owner” (*Finnish: asiakasomistaja*), which would simultaneously represent their status as a cooperative and customer-centric organization. The organization is meant to be owned and directed by its customers. Despite most informants explaining customer-centricity as an essential aspect of agile transformation, the full benefits had yet to materialize.

Internally “the customer” and customer-centricity represented a broad talking point and a commonly associated issue within the company. “The customer” would often be represented at a very high level without a clear definition of the customer. Confusion about the customer was shared during my physical observation, as one of the new employees introduced to the organization asked: "I keep hearing this word ‘the customer,’ but what do we mean when we talk about ‘the customer?' Is it the regional cooperatives? Are we talking about the end customer?"

One of the senior employees, Unidentified Informant, answered that the (external) customer value is predominantly directed towards the regional cooperatives, which trickles down to the employees and end-users: “The purpose is to produce value for the regional cooperative chains. It involves all the regional leaders with whom we are dealing. Supply chains, businesses, management, and employees are the customers. We also produce indirect value for the end customer.” The answer was continued by another Unidentified Informant, who explained that the customer could vary significantly from team to team: “[HR] business partners might be thinking about the end customer. But in another [agile] cell, the customer is not necessarily the same.”

As an observer, I would assume there was an implicit understanding of who the customer was and which customer the informants talked about. Informant 9 would later invalidate this assumption: “Oh, if only you knew how often [we were confused about which customer is being talked about]. Especially now that we talk about the customer at HR.” Though the different stakeholders were mapped and identified, Informant 3 would express their thoughts about the complex web of customers intertwined in the organization: “When we have all these customer groups in the situation room, I have to stop and think for a bit, well, which customer are we talking about again, since we have like 5 or 6 of them.”

The complex organizational structures and the highly varied team composition would create scenarios where different teams at HR and units across the S Group would have highly varying customer bases. This meant the teams had increasingly varying needs from agile, leading to further fragmentation of both customer identity and agile both in HR but especially at SOK when considering the future, as explained by Informant 5:

> We have 2000 people at the office [at SOK] who are in professional roles and have very different needs from agile. Within these, there are also different segments and very different customer groups who have very different needs in the professional organization that we have. We have IT developers who have very different needs from the commerce; we have the brick and mortar stores; they have very different needs. We should be able to recognize better the priorities that bring value from their perspective.

The poor definition of specific needs and the significant number of customer groups could lead to conflicts of interest. Which customer needs should be prioritized? For instance, Informant 2 expressed frustrations with losing the big picture by "listening to people too much." According to them, this led to scenarios where the bigger picture of S Group was lost in accommodating the individual customer needs:

> Now that we have been focusing on the internal playing field, the focus on the customer has decreased. Different people want different things, and we cannot listen to everyone. The way I see it, the S Group as an entity is our customer. We drive the concerns of the S Group. Our purpose is to move that group forward. And when we listen to everyone, prioritizing the customer needs becomes a real problem… We should be looking at the S Group as a whole.

Though many informants felt that customer-centricity had improved, initially, there was a lack of explicit customer-centric methodology such as design thinking and customer's voice in the process. When informants were questioned about the customer's involvement or voice, many informants would explain how they were now involving the customer in the process by “talking about the customer.” For instance, Informant 6 would state: “Well, if I think about how the customer-centricity can be seen here and now, it is involved in the speech, and we think who is the customer,” and Informant 9**:** “You know we remind each other, where is the customer? How do they experience this? Does this produce more value?”

The situation at the HR department reflects a decoupled state between espoused values and application. While the customer was involved during the early co-designing of the process, informants saw that there was insufficient systematic customer involvement and co-creation. The insufficient involvement of a customer in the agile process was highlighted by Unidentified Informant during the first observation while discussing issues during a retrospective: “I wish we could see the customer more clearly. That is why we are doing this [agile transformation] in the first place. If we just keep talking about our internal affairs and models, we will forget about the customer.”

Moreover, despite one of the main goals of adopting agile being improved customer centricity and customer experience, some informants felt that adopting agile came at the cost of customer-centricity. Paradoxically informants reported that at the team level, the teams did not have sufficient time to think about the customer because they focused on their teams and the operational details rather than the customer, as Informant 2 would explain:

> Well, now that we have been building this [agile model], we are not really doing things in the direction of the customer. Before this, we used to have many projects going on at once so that our customers would be more aware of what we were doing... Especially since S Group as an entity is also our customer, I think that everything we do as a group that makes us more visible to the S Group is important.

However, due to HR's and SOK's immense team-level diversity, individual teams would provide advanced examples of customer-centricity. For instance, Informant 7 explained how their team was engaging the customer, collecting user stories, and prioritizing customer needs by letting the customer score different problem groupings made up of relevant user stories:

> We have this [meeting] where we discuss the largest recognized collective issues. And then we discuss with them things like," Hey, here are the values that we have recognized [together] and what value these changes would bring," and then we let them score. They have 100 points to split between different collective issues.

While individual teams that had adopted the practices earlier were far ahead of others, there were few collaborative learning opportunities where practices could be collectively shared due to the siloing. Thus, despite having individual teams with better-evolved practices, lack of communication meant they were not commonly adopted across the organization.

The customer's role would become more deliberate over time as many recognized the insufficient attention to the customer had been recognized and the changes progressed as planned. HR had created new roles in the form of "HR business partners" as part of the change, whose role was to "really get into the skin of the customer organizations and help with the most important problems," as Informant 9 would recount. The HR Business Partner's role was to interact more directly with customers and raise many of the issues recognized directly on the field, creating a stronger bottom-up customer voice and a more "strategy-oriented HR," as several informants explained. Many informants would refer to these HR Business partner roles as "the step in the right direction." Though, as Informant 7 would state: "It is still too early to evaluate [the success of] the HR business partner model." Moreover, in the third quarter of the change, the HR department would introduce DT methods that would emphasize the role of the bottom-up customer-centricity to develop further the active role of the customer in customer value creation.

The missing customer would highlight the weak links in agile adoption. The siloing of teams and units, lack of sufficient resources leading to prioritization of operational work over the customer; a partially hierarchical top-down customer evaluation instead of a systematic and continuous bottom-up value recognition based on value co-creation through customer involvement, and the widely different understandings of the customer base and their needs due to the fragmented culture and customer identity. In particular, the multiple customer groups would create further difficulties, as different teams and units would represent different customer groups. This would create confusion about the customer identity and value prioritization. However, as informants recognized, many early steps were being taken to improve the situation in the form of new HR business partner roles, stakeholder mapping, and stronger customer involvement.

4.4 Psychologically safe or positively aligned?

The survey, observational, and interview data analysis showed mixed findings on psychological safety. The survey and observational data would highlight moderately high levels of psychological safety. In interviews, several informants described experiencing psychological safety. However, they would often add that the previously hierarchical culture contributed toward a culture of mutual alignment with an inability to engage in significant conflict, disagreements, or “cognitive friction.” The analysis would also indicate discrepancies in psychological safety between different teams based on team-level maturity. As several new members and teams had been introduced to HR, the novelty between new members led to an added layer of uncertainty and immature levels of trust, adding to an inability to engage in behaviors deemed conflicting or risky.

Psychological safety was a central talking point across the organization as a vital part of generating a cohesive and well-structured agile organization. While physically co-located, the observed participants would use body language openly. Everyone would smile and nod at each other during the discussion. Whenever there was a question, and no one would answer, the tension would break into a brief chorus of laughter until someone would come forth to state their opinions or give a question. Other times someone would break the silence with a small joke that would be met with smiles and laughter. The atmosphere was highly elevated, energetic, and light-hearted.

Psychological safety in this meeting was also built using minor verbal cues directed at people. Those giving a presentation and asking questions would compliment each other's questions with brief acknowledgments such as "Good question" or "Good thing you brought that up." Especially when negative topics and feedback rose, it would actively be encouraged by showing support either verbally or with more subtle body language, such as nodding along. Even difficult or seemingly “silly” questions could be aired easily, and many informants would state that the organization was psychologically safe.

During the observation, new employees would openly ask questions that might not be immediately apparent. Others would ask questions that might have seemed obvious and could have painted them in a poor light in a psychologically unsafe environment. For instance, one new employee stopped to ask about the measurements: “I have a question. Since there are many different measurements and KPIs, do we just collect all kinds of measurements there [at the Obeya wall] and then utilize them? Or do we collect and consider what could be good measurements to track?” Moreover, the new employees were taken into consideration by the older employees in many instances. One employee would interrupt the discussion to state: “Since many of the employees are new here, they might not be familiar with all the abbreviations we use. It would be good to put them up somewhere alongside explanations.”

However, not everyone saw the atmosphere as psychologically safe. Despite much talk about psychological safety and internal surveys that reported psychological safety being at a high level, one informant merely saw this as a façade. They felt the overly positive atmosphere masked an organizational culture that did not permit dissent or disagreement. Unidentified Informant noted that the excessively happy and joyous atmosphere hid underneath it a culture of fear where everyone acted friendly towards each other for that very reason – because they were afraid of disagreeing:

> We [in HR] have this culture where, whenever we talk about things, you have to compliment it like: “Yeah, very good, very good!” because there is a bit of this culture of fear. You need to show that you are always aligned with each other, and then people talk about how things are not working at all behind each other's backs. I have seen this a lot since I have worked with the operational teams, especially with the many employees who have been here for longer. I feel it is more just that they are afraid to tell how they feel.

Other informants explained recognizing the culture of unsafety projected through positivity but interpreted it differently. Informant 6 felt that the previously hierarchical culture of the organization did not yet permit such dissent. As they saw it, SOK had historically been a very hierarchical organization, the culture surrounding such hierarchy would rarely allow dissenting opinions, and as they explained, individuals still required time to adjust to these changes over time:

> Our culture here [at HR] is a bit more careful... Things are not talked about directly, instead just explaining how everything is good and nice, and people are a bit afraid of raising uncomfortable topics... I think it has more to do with what kind of culture there was before. There just has not been a

> habit of speaking up directly or commenting. [It is] what people are used to. How things were, and now we just have not learned away from it yet.

Even informants who initially stated that the organization was psychologically safe would recognize the issue when pushed further. Informant 11 would evaluate psychological safety in different teams explaining how they felt psychologically safe, especially in their own team, but later added that they would have difficulties partaking in a "creative conflict," especially in the newly formed teams' assembled as part of the change they were part of:

> I have not yet experienced this type of creative conflict situation. In that sense, it is difficult to say if we are truly psychologically safe or not… [At the team level] I feel like we experience quite high levels of psychological safety, but I do not think we have truly challenged it yet. There has not really been that kind of room for it… If I felt another team member's behavior [in a newly formed team] was challenging, that it is a bottleneck or a barrier, bringing that up, I do not know if I could.

Many informants recognized a similar disparity in how they experienced psychological safety differently in their personal teams compared to the newly formed teams. Informants explained that psychological safety was higher in their teams than in team assembled post-transformation leading to lower levels of psychological safety due to insufficient team-level maturity. Informant 7 would describe in more detail as they explained psychological safety in both their personal work team and newly assembled team:

> Last week, a new person started on our team. In the first meeting we had a discussion, and people commented how they feel very safe even disagreeing. We have said that it is enriching that we can have different opinions constructively, maybe even a bit too often sometimes… It is difficult to say about the psychological safety in [the new] team because there are so many new people there…It is in a bit of a construction phase. But we have discussed this psychological safety and marked it on the walls that we would ask if we do not understand something and bring that view up. Perhaps it will come after mutual doing because we are still in a starting phase.

Informants also saw good in the positive atmosphere, explaining how new members had an easy time integrating into the teams with the open and psychologically safe atmosphere: "Even the new employees can get a grasp fast, and I think that we have succeeded in that" as Informant 11 would note.

Psychological safety was highly contingent on team-level psychological safety and the previous organizational culture. Many expressed significant variation in psychological safety at team-level operational dynamics, highly dependent on the team's makeup and maturity. Insufficient psychological safety was partly associated with the organization's hierarchical past leading to a culture of alignment. As Informant 6 would elaborate: "Maybe people here are not so used to saying they disagree, or maybe that is just not a way of doing things, and instead people just encourage each other a bunch." Especially, the "way of doing things" would indicate the overly positive and encouraging behaviors were simply part of the ingrained culture that would require reframing to take full advantage of psychological safety and a process of maturing at the team and organizational level.

4.5 The more we change, the more we stay the same – the culture of hierarchy that binds

4.5.1 Deconstruction and reconstruction of hierarchies

In a somewhat paradoxical sense, despite the lowered structural hierarchies at HR, employees would express an increased level of control that was given rise by the restructuring. The interview analysis would display a reconfiguration of organizational control and hierarchies with fewer organizational levels. The HR's restructuring broadened roles for some employees while binding others more strictly to their previous work. Regardless of the early participative development of the mutual processes and practices, the hierarchical structures would be legitimized due to the inability to give up control as the changes progressed during the early phases of the change. The inability to delegate responsibility over time would lead to a more concentrated and hierarchical agile and OKR process that would reconstruct the hierarchical control. Despite the team-level autonomy, some informants felt they were still not free from the organization-level hierarchies.

The HR department had undergone hierarchical and structural changes as part of the agile transformation. These changes affected hierarchical levels, team structures, and individual employee roles and responsibilities. HR had had four layers before the changes. Moreover, the thick siloes of the organization would allow for the HR unit to act with relative independence in restructuring the unit, as explained by Informant 1:

> The [HR] organization was not very deep [hierarchical with several layers] to begin with. We removed some leadership and management roles. Some members of the organization left. We could not remove all the layers, probably not as many as we would have liked.

As part of the restructuring, one middle-management layer was removed from the HR unit, leaving three management layers. However, while officially only three layers existed, the management team would be split into extended and narrowed management teams. Though the extended management team was represented by a manager from each team, the narrowed-down management team would have a more concrete responsibility and control over the transformation process itself. With the unequal roles of the management teams and by proxy unequal understanding of agile practices the organization would retain remnants of the hierarchy, reconstructing the hierarchical structures at HR during the beginning months of the change. Moreover, in practice the HR would hold biweekly narrowed HR management meetings lasting an entire day (7 hours). The extended HR management team would hold meetings twice every three months. An Unidentified informant would explain how they felt these management practices were very archaic and old-fashioned. According to them, it represented another form of legacy from the hierarchical working practices contrasting them to traditional agile practices where shorter meetings are held more often between teams.

On top of the hierarchical changes, there were also structural changes. The internal organization had been split into internal and external HR departments, which were combined in the new restructuring. Moreover, the team sizes were significantly reduced from the previous team sizes of up to 30 people to smaller teams with under ten people each. Alongside the team restructuring, many roles were also restructured. While structural hierarchy was reduced and informants reported that the information flow had improved, hierarchy would seep into the renewed structures.

The role restructuring left some employees feeling that they had received the short end of the bargain in the shuffle of resources. To some, the deconstruction of hierarchy would merely become a reconstruction of a different type of hierarchy. Removing hierarchical layers in agile organizations implies the responsibility of developmental work cascades down in the organization's hierarchy. Despite the flatter structure, hierarchy was still enacted by binding employees to the operational work. As developmental responsibilities were delegated to fewer people and others had no time for developmental work. In contrast, many informants would explain that their roles had become more restricted than before, bound by operational work as described by Informant 5: “I have gotten a lot of feedback from people, how their role has become more restricted from before. Even though they expected they would get to do more [development], but these ‘cells’ [restructured teams] just restricted activities further.” Later, Informant 11 would explain: “One of them [person who resigned due to the change] said ‘Now that this role changes like this where there is only [operational work] and not as much development as I was able to do before,’ they lost interest.”

Unidentified informant would explain that this shift happened more recently. The transition to agile was part reason provoking the change from “looking at the big picture” to looking at the smaller details at the organizational level, increasing organizational control instead of loosening it. However, they recognized this could be only a temporary state tied to the recent changes:

> “There is no way in the future that the management has oversight of everything, and instead look at the bigger picture without interfering with the smaller things...However, it could be too early to say. Maybe in a year, we could be doing things differently.”

During the beginning phases of the transformation, the history of hierarchy could legitimize a different type of hierarchy to be upheld. The structural hierarchy at the HR would further legitimize behaviors where control over the changes is retained instead of a bottom-up leadership common in agile Also, in practice, the inability to delegate responsibility would necessitate frequent, long, and large-scale meetings that were retained even without explicit necessity, granting them further legitimacy.

However, it should be noted that the lack of bottom-up initiatives and leadership could partially be attributed to the early periods of the change. As the teams were only learning the process of setting their personal goals, informants expressed that bottom-up initiatives would be something that HR would move toward later. Many remained hopeful that once the teams learned their way around agile, control would be eased over time, and the management’s role would shift towards coaching rather than control. As Informant 7 would state: “There are a lot of old operating models and learned behaviors at the bottom, but also a lot of new. We are changing a lot of things. So, we are kind of in this state of transition.”

4.5.2 Context versus control – strategy as alignment and motivation versus top-down control

While the goal of the new OKR model was to create clearer alignment and transparency through common goals, findings from the informants would indicate the opposite effects – inability to connect to the strategic goals and unclear understanding of how one’s work was supposed to connect to them due to strict framing and cascading top-down strategic goals at the beginning of the transformation. Informants from individual teams would report being able to align themselves with the strategic goals. However, the difference between the teams that could and could not connect to these goals would arise from their ability to take the objectives iteratively top-down and bottom-up or provide contextual guidance by loosening the framing of the strategic objectives. This allowed the teams to connect their work to the goals better and provided clearer alignment without the strict control caused by the tight framing of the strategic goals.

The OKR model was the strategic management model adopted as part of the agile transformation. The model followed the Hämäläinen and Sora (2020) adaptation of the OKR model. HR would operate on quarterly iterations with three different levels of strategic goals that would be cascaded top-down with the help of the OKR framework. Following this approach, there was an iterative quarterly strategy with three to five qualitative objectives that would be compounded with three to five quantitative key results for each objective, cascaded down to the teams. Based on the quarterly OKRs created by the extended management team, the teams below would write their own three to five qualitative objectives along with three to five quantitative key results tied to each objective. The goal of the OKR framework, as explained by Informant 1, would be to "create transparency in the common developmental priorities and goals."

For some of the teams, the OKR model provided clarity and clear direction in the strategic goals, as Informant 2 would explain: "From the perspective of leadership, it brings a type of structure to what we do and how we track it and how everyone is doing work towards the same goals which I have very much liked." Other informants would also highlight how the strategic goals provided by the OKR model would make the individual steps toward the annual goals clearer. For instance, Informant 7 described how OKRs would help in seeing the customer value that had been created:

> Looking at customer value, the OKR model has, from the management by objectives perspective, brought a new angle when we split the annual goals into quarters, and the key results link to those annual goals, and we can better talk about the customer value as well.

Informant 8 would also recognize how a clearer divide in developmental goals would help people take ownership over specific key results:

> I think the OKRs have helped us in becoming more self-directing. People take things as their responsibilities and do not wait until they are asked, "could you do this." With the OKRs, we have been looking at who could take responsibility for each key result.

Compared to other teams, both Informant 7 and Informant 8 had taken specific approaches different from other teams to the OKR models. Informant 7 explained that in their team, they were: "Creating an iterative model of the OKRs…[going] top-down and bottom-up, we are kind of taking them [OKRs] both directions." The team would collect customer feedback and user stories and aim to align them with the higher-level OKRs. Informant 8, on the other hand, mentioned they were using annual strategic goals to build their own quarterly goals instead of the management's quarterly OKRs. As they would explain, it was important that: "Everyone can see themselves as a part of the greater whole and understand how my work affects [the strategic goals]. How I can, with my work, help reach those goals."

In contrast, many informants faced an issue: they could not connect their work to the OKRs. As the OKR framework was built for "ambitious developmental goals," seeing one's tasks and how they related to the framework became difficult. Even the teams that had managed to integrate the OKR framework into their workstream had issues connecting the strategic goals to the work they performed: "I get this a lot, like: 'Am I supposed to see my work there?' [in the OKRs]," as explained by Informant 7.

The extended management team responsible for the unit-level OKRs would have a manager representing each team. However, a common issue recognized by informants for the lack of integration was that the OKRs were imposed top-down without bottom-up OKRs raised from the team level alongside too narrow framing of OKRs. The extended management team would create five strategic objectives, with up to 25 key results cascading down to the teams. Teams then made their OKRs based on these objectives and key results. The tight framing insufficient input meant that many felt their strategic goals were disconnected from their work. Moreover, the teams would all create their team-level OKRs separately: "at the team-level, the OKRs are a bit all over the place," as Informant 3 described.

Some informants would find themselves alienated from the strategic objectives. In worst instances, the OKRs would be outright rejected by the team members as they felt their day-to-day work was not connected to the strategic goals, as described by Informant 11: "One of my team members feels that this OKR model does not concern them, and I have not been able to offer them a valid reason [why it should]. It makes me wonder how we could fit in that everyday [work]."

During the writing of this thesis, the team-level OKR structure shifted from the teams creating their own team-level OKRs to creating smaller "tasks" derived from the higher-level OKRs. Moreover, informants recognized the need for bottom-up input to create a stronger connection to the strategic goals. For instance, Informant 4 explained the need for both looser framing and iterative OKRs as necessary for teams to better connect their own work to the higher-level strategic goals:

> I think we reached a pretty good conclusion that not everyone can have their own OKRs, but at the same time [employees] need to find the connections in the management's OKRs, and those are the type of things that need to be advanced. In the future, some of them should emerge from specific teams and become things we all focus on.

Initially the tightly framed team-level strategic objectives would create another form of control instead of an operating context in which teams could work independently, creating goals that would help them connect their work toward the greater whole. The two informants with the most successful OKR approach would be those who loosened the restrictions of the OKRs. The teams achieved this by connecting their own OKRs to the annual level OKRs or creating a bottom-up/top-down approach that would align their own goals toward the quarterly objectives and key results.

As informants indicated, iterative strategic objectives would come to fruition later in the third quarter. This would implicate a “top-down, bottom-up” approach, as explained by Informant 1. As the OKR model was undertaken simultaneously with agile transformation, the first two-quarters of the approach were very guided and top-down to help learn the adoption of the OKRs. Moreover, this approach follows the recommendations of the Hämäläinen and Sora (2020) guidelines for establishing OKRs by initially retaining control of strategic objectives. However, this approach would highlight the weaknesses of using a bottom-up and iterative strategic management model through top-down leadership with cascading OKRs.

4.5.3 Autonomous, yet not independent – employee-level cultural Maturity for agile leadership

Although many of the informants expressed their teams having worked autonomously before the transformation, the previous autonomy did not translate to fully-fledged independence post-transformation. As I recognized in the interview analysis, informants would describe how lower-level employees can mutually reinforce the hierarchical leadership culture due to cognitive, emotional, and proficiency-related issues that many informants labeled "cultural maturity" or "agile maturity." The lack of “maturity” would describe insufficient skills to create personal strategic objectives, fully understand agile philosophy and principles, and lead oneself. This led to a lack of collective ownership and insufficient shared team-level leadership required in agile.

To improve leadership maturity, SOK initiated a change in its leadership, and many received coaching in modern leadership practices. As Informant 8 would inform, they had been working with the team leads to “Provide support in issues where the team lead recognizes the need for further learning or insufficient understanding.” As they would later add, genuinely letting go of the previously held control in management roles had been something many at SOK had struggled with before the changes had taken place:

> There have been some challenges in giving up decision-making authority. For a long time, people were like: “Okay, we have these self-managing functional teams,” but then the manager would decide what to do or where to go next. Giving up on that responsibility must have been difficult.

Informant 3 described how it was not always the management that struggled with the changes but the employees. They would provide an earlier example from outside the HR of, people coming from organizational cultures where hierarchy had been commonplace could still yearn for more clear-cut instructions:

> Two years ago, when we hired many people from the outside, we had a lot of issues since we had brief instructions and guidelines that were more like principles. And everyone was eager to bring their guidelines: "Here are these instructions, take these," but we do not do things like that. Is it not enough that we have these principles? In more linear organizations or cultures, you must have guidelines, and this is sort of the same thing... In organizations where the leadership is not very developed, there is a stronger yearning for instructions... The more developed we are [in leadership], the fewer instructions you need to write that no one will read anyway.

However, even before the changes, the teams had operated with significant autonomy that the teams could exercise at the team level. Many informants reported that their teams could actively take charge of the imposed changes and enact at least most of the processes flexibly within their teams. At the same time, several informants would state that HR and the other agile teams at SOK were not culturally mature or developed to be truly independent and take full advantage of the changes. Teams had significant autonomy over how to perform their tasks. However, team-level autonomy alone did not translate toward other necessities of agile leadership, such as being self-directed by setting one's own (strategic) goals, taking personal initiatives, or taking full advantage of team-level resources. In other words, the sudden shift toward fully-fledged independence is not something that individuals could use just because they were granted the opportunity to do so, as Informant 3 would express:

> When you just tell a person: "come on, go ahead, I will just give you a thumbs up, and you go ahead and do what you want!" the other person is just going to be like: "I cannot, I do not have the time, and I do not know where to start. Help me!" and we have hedged our bets on "just do things." People are still seeking their roles.

What also became an issue was internalizing what many informants would call the "agile philosophy" or the "agile culture." Reflecting the more holistic practices and agile mindset beyond autonomy. Informant 2 would highlight how they had not been able to form a complete understanding of the agile philosophy as all the changes were rolled out simultaneously:

> We had this one-day agile course and our own material, but you know it does not happen in a second that now you can just be agile. Maybe with a slightly longer period and a more sliding scale, especially with the philosophy, it would have been more appropriate... Well, you know, they wanted changes fast. But if they wanted faster changes, you probably would need

> some more time in the beginning so that people would have some more time to read and understand how to think agile bit by bit and not just crash it all in at once.

Even in teams where the informants aimed to give their team greater access to resources, they were unsure if the team members were comfortable utilizing those resources to their full extent, as Informant 6 would note:

> I try to create resources for my team and control those resources so that we can decide on our own. There is a lot of talk about how we should become more autonomous and know what constraints our team can make decisions with and with what budget; we talk about how we should be taking it toward that direction... I feel that we are still being a bit careful. All the rules are not quite clear yet. We have been given the rights to do so but can, and do they dare to use [resources] fully, probably not.

The lack of preparedness or "maturity" due to the new culture and practices is what many informants recognized as becoming an issue. The clashing agile culture and mindsets going against the historically hierarchical leadership were seen as inhibiting the pacing of the change. Informant 3 considered that if the operating models had been given a bit more time, the adoption process could have been more easily processed:

> [If I could go back], I would increase the amount of time available for the goals and ensure we have the necessary preconditions and qualifications for [adopting] the OKR model or agile... This model we have now chosen tends to separate the wheat from the chaff fast because it does not really give instruction but rather delegates responsibility.

Informant 5 highlighted the lack of leadership and team-level self-management maturity at HR as an issue. Many were not used to setting their own goals as they were used to more hierarchical leadership. They reckoned the appropriate approach would have been with a more limited focus on what they defined as the central values of agile customer value, multidisciplinary teams, and prioritization of goals:

> We are in a bit of a chaotic situation. We are trying to do a ton of different things, and then if we look at the actual maturity level, some of the SOK's HR did not even have annual goals. This is very unclear for some people since people are not used to leading themselves and producing their [teams] own annual goals... This year, we should have just practiced more goal orientation, customer proximity, and prioritization and see how we can make this type of "leading work with data" work and employ the OKRs only later.

Even when the necessary preconditions are given for employees to act more independently, these acts do not immediately manifest as the previously learned ways persist. However, most informants viewed the issue of leadership and independence as a process of "maturing" or "developing" as an organization — a work in progress that can be overcome over time. Thus, despite the initial difficulties, most informants reflected on the future with optimism that HR would be able to overcome the legacy of hierarchy by persisting with the change and learning by doing.

4.6 Optimization of resources – defying the impossible

4.6.1 Together yet separate – misalignment of culture and incentives

The analysis of the interview findings indicates a deep separation between organizational units. The structural separation would lead to a significant cultural separation between the HR department and the other units. This would lead to a unique scenario at SOK where both occupational macro-cultures and unit-level subcultures control organizational behaviors. The HR employees often described themselves as people-oriented, but the rest of the organizational units and the parent organization were still seen as efficiency and process-driven. Cultural disparities led to a scarcity of resources and unit-level resource optimization, inhibiting cross-unit collaboration and organization-level efficiency.

During the interviews, Informant 8 described how SOK had "several organizations" as if the statement was nothing out of the ordinary. Without contextual understanding, one would easily imagine they misspoke and meant several separate units within the organization. However, as other informants later expressed, this was not the case. Indeed, the individual units operating at SOK might as well have been different organizations altogether, as they all ran with significant independence and little consideration for the other units. Unidentified Informant explained how: "the type of everyday work I have here at e-commerce versus the HR, these are like two different organizations and cultures. These are two completely different workshops."

The deep separation of the different units would lead to a unique scenario from the perspective of organizational culture. As explained by Informant 9, due to the structural separation, what differentiated the vast number of units would be a mix of organizational culture mixed in with occupational norms or occupational macro-culture that could also be a blend of several occupational cultures themselves:

> There are these industry or occupation-tied cultures [at SOK], and there could be unifying factors, such as supply-chain management and from the business side. For instance, we might also talk about how the market

> stores have a specific type of culture. It cannot cut through the whole organizational structure. For example, they [the business units] value efficiency, and they think about things and processes first and less about the individual.

Informants often contrasted the regional cooperatives and the business operations with the HR department as they saw themselves as very "people-oriented," which was helpful in the agile transformation process. In contrast, many other business units were seen as focusing on "business and numbers." The significant structural separation at SOK led to a lack of collective identity. When asked about a common culture or identity at SOK, informants were confused or disoriented, as if the question did not make sense. Later, Informant 7 would explain that they did not recognize that SOK would have a coherent collective identity and that all the different units represented their separate organizations "When I came to SOK, I felt that all these units were separate organizations and had their own things going. We did not really have a common direction at that time. But maybe we are going in that direction."

What unified the employees at the organization was the feeling of belonging to the S Group. Instead of SOK, the S Group formed a collective identity with which most informants could identify. For instance, Informant 2 would explain how they considered: "S Group as an entity is our customer whose interests we are advancing." Informant 7 would evaluate the two options and explain how they felt more connected to the S Group:

> If I had to evaluate between the two, it is definitely the S Group, so the larger entity, even if it might sound a little weird... But I feel it is much easier to connect to all the great things that the S Group does in Finland, and the SOK does not connect to it in the same way.

The effects of this would be most notable in cross-functional teams where the initial prototyping of cross-unit teams was being tested. The cultures could differ, such that it could drive the decision-making toward cost-efficiency between the teams and units, hindering collaboration or the function of another team or unit, as Informant 12 would recall: "If we look at the other business units, or what the cost-awareness there is, it leads to pretty limited development resources [for us]." As they would further explain, the combination of a missing common pool of financial resources and the desire to optimize costs at unit-level would lead to misaligned incentives and inefficiency at the organizational level:

> [It is about] cost optimization in longer [cross-unit] processes. The [financial] interests are not aligned. Our financing and resource management does not support these long cross-unit processes... We have a specific model that is financed with these service fees, and the money is siloed

> [within units]. We would need to see that it needs to be done in another way or change the model so that it would be holistically more cost-efficient. But if the money flows to another unit, it causes this [misalignment]. In discussions, there are a lot of challenges since the service fees are tracked on a unit-by-unit basis. From the benefit of the whole, it could mean that one unit's fees increase so that the overall efficiency improves. But if we say that service fees cannot increase in one unit, then we are in this type of political issue.

Though steps had been taken towards closing the cultural gap, Informant 1 would explain there was no priority for creating a common culture that would cut through SOK as S Group was still seen as the primary entity around which culture should be built:

> Internally, individuals identify with their closest group, colleagues, and whatnot. Of course, we want all the 70 or so people working here at SOK HR to feel that this is a great place to work and that it is specifically great to be at SOK HR. But above all, it is a part of fulfilling the S Group's customer promise and enabling that. To succeed in this, we need to cherish a strong culture of cooperation.

SOK operates independently from the cooperative chains. This meant the cooperatives were not part of the agile transformation as the changes were initiated internally at HR. However, the HR along with other units were financially dependent on the regional cooperatives that pay them based on service fees. Their needs would dictate the need for operational functions and set available resources for developmental work. In particular, without shared resources, this created a scenario where the various teams were operating on minimal resources with little flexibility to extend these resources, as there was also an unwillingness to increase service costs at the unit level: "The economic situation is such that we do not want to increase the service costs, which is the limiting factor in this agile change." Informant 12 would state.

The cultural chasm in the form of subcultures between the units and the regional cooperatives, as well as the lack of common organization-wide culture at SOK, would tie HR back to the culture of hierarchy and efficiency. This would further misalign the cost-optimization to the unit level instead of the organizational level. The "together yet separate" approach where SOK would create value in separated units to the S Group was deeply embedded in the organization's history. Even during the impending changes toward cross-unit collaboration, changes toward a unified organizational culture were not seen as a priority, though recognized as an area for development. This would enforce organization level siloing, as the different units would desire to protect their tight financial budgets and enforce the efficiency culture onto other units rather than seeking to collaborate.

4.6.2 Balancing act – operational versus developmental work

As I would discover during my analysis of the interviews, resource optimization would be an overarching value that would both be enforced by the top management at HR, other units and the parent organization. The resource optimization would be primarily driven by the tight and inflexible unit-level budgets and cultural misalignment. This would create a lock-in, where agile transformation both needed to happen while using minimal resources. Adding to these issues was that the changes were happening during an ongoing resource deficit due to multiple voluntary resignations and co-operational negotiations before the change. Due to the cost-optimization mindset, operative work would be heavily prioritized. This led to an inverse scenario with stronger pressure toward operative work and an ongoing resource deficit during a change requiring a significant increase in developmental work and additional resource investments for the transformation to occur.

The optimization of resources represents using as few resources as possible through cost-efficiency or, as defined by the informants, "stretching resources thin" or "optimizing costs." Resource optimization is an overarching culture at SOK. The HR's approach toward the agile transformation was an example of such resource optimization. Though some of the fundamentals were practice beforehand, the most foundational changes were imposed at the beginning of the year simultaneously. Before the changes, there had been co-operational negotiations and voluntary resignations. This meant some teams were, at worst, running on a significant resource deficit. Despite this, pressure for maintaining operational work and imposing changes was retained. Informant 1 would explain that the additional resource allocation would not necessarily help and that it was part of agile to use resources efficiently:

> Adding resources would not necessarily help, as that would just add moving parts. The main objective of agile is to create value for the customer with pre-existing resources one thing at a time. The important and hard thing is to prioritize; you adjust the goals to the resources and do fewer things at once. You learn to make room for development by optimization.

Each unit was allocated a specific budget they would have to manage. Moreover, each team was allocated a budget that the teams could prioritize autonomously. However, due to the slim resources, this would appear as a prioritization of operative work at the cost of development activities or simply additional work on top of existing work. Informant 12 would elaborate on these mindsets, explaining as their team was mainly seen as an expense, they had to minimize their expenses:

> Since we produce very little direct profit, we are just [seen as this] kind of expense. We have had to optimize [our activities] for a long time. We are running on pretty thin resources, so it has always been a balancing act [between operative and developmental work].

Many informants would describe using at least 90% (a number used by most informants) of their teams' time on operative work, leaving little time for developmental work imposed by OKRs and the organizational change. Unidentified Informant would explain how the 90/10 split would restrict their team's developmental capabilities and further disconnect their team from the developmental goals:

> In my team, there are many people for whom about 90% of the time goes into working in the field [operative work]. For example, in my role, where you work in the field with people and whatnot, there is no room for you to start thinking about development projects. Of course, in your work, you must also develop something new, like finding balance in the future. Is it then so that we are just not going to work on those five OKRs but maybe just one? Because 90% of the time, we are working on something we have not discussed [in the meetings].

Moreover, as expressed by Informant 3, due to the breadth and heterogeneity of HR, how much time one person would have for developmental work would vary significantly due to their widely differing organizational tasks. Whereas service workers would mostly be tied to operational work, the internal consultants, on the other hand, could be overwhelmed by developmental work that came on top of their previous work:

> If you go to HR telling the people who are hung up on their phones: "Hey, you are doing developmental work at 10%!" what does that even mean to them? As I said, the extreme ends have been in a turning point, like if we have someone doing a large customer project, they are doing it 120% when they are being paid for 100%. They are also probably unlikely to feel like the agile or the OKR models are of any use because they are just doing the work they have been given. I imagine the center [employees with mixed work tasks] work the best.

Informant 10 would similarly explain that due to the team-level heterogeneity, the ability to commit to developmental work varied significantly even at the team level. As they would explain, the team members would take a different level of responsibility for the goals:

> It cannot be that everyone in the team has equal responsibility. There will always be some variability. In our team, we went through this: it is okay if

> someone has a larger responsibility [over the developmental goals] and someone has 50% [of developmental work], or whatever it might be, it is okay.

Due to the diverse nature of the teams and the significant autonomy, individual teams had produced solutions that would guarantee time for emergent and developmental work. For instance, Informant 7 explained they were using a "corporate tax." As they explained, this meant saving 20% of the time each week for emergent issues and developmental work, which functioned as a baseline for the whole team:

> I can only have eight full days booked during a two-week period, and even eight is quite a lot since sometimes we get a lot of ad hoc [work]. I have tried to emphasize that we would plan for a bit of slack in the schedule so that it is possible to react if there is some interference.

However, only a few informants mentioned existing in such a "center" between developmental and operational work. Rather, most informants explained that they were too busy to do anything else but operational work or that they had at least compromised on developmental goals or activities to sustain operational work. For instance, Informant 11 reckoned that the sheer lack of time would get in the way of facilitating basic development such as cross-team collaboration or more open communications and learning from other teams, as operational work was deemed the most important: "We could just set up quick 30-minute morning coffee across the teams, and it would not be a big deal. But honestly, I feel there is just no time as we must prioritize the currently most important tasks."

Informants agreed that operational work would be favored over developmental work if necessary. This meant development or agile itself could be seen as something additional and disjointed from "regular work" if there were time on top of the operational work. Informant 2 would reflect these notions when describing their team's situation: "The biggest challenge, I think, is the use of time. A lot of our work is just day-to-day work, and then you bring the agile on top of it." Similarly, some of the members from the IT teams who had been practicing agile for longer, would report having issues allocating time for development work and echoed the sentiment that operational work comes first, as described by Unidentified Informant:

> We have had far too few resources in the team right now so that we could do developmental work. The operational work takes a lot of our time. You must assume that operational work is something you must do, and developmental work comes on top of that, depending on your role.

As described by one informant, the long-term solution would be to do operational and developmental work in cycles. Focusing on operational work primarily during the busiest periods and allocating time toward developmental work during the quieter periods, as Unidentified Informant would describe: “We have optimized this process so that, once the resources free up from the operations, the same people will put more resources into the development.“ resembling waterfall development. They would explain that their team also performed continuous improvements, though certain projects required more planning. In addition, bottlenecks in operative work and cultural differences between units would drive their team to take this approach:

> There is no situation when there would not be [need for] development. In that way, it is continuous. But we have to handle the operations simultaneously... Though I should say this sort of cost consciousness within [business units] has led to our development being quite limited, and we would then rather do these project-type larger development processes

Optimizing resources would also limit the number of agile coaches hired to support the teams. The benefit from agile coaches, as Informant 12 explained, would be: “To understand and internalize the benefits from such an organizational change and to adjust one’s mindset, the agile coach would be excellent in that, because it [adopting agile mindset] does not happen overnight.” However, the HR had hired only “three or four agile coaches, when there could be twenty or ten” as Informant 3 explained**.** Moreover, though agile coaches were viewed as beneficial for making the changes faster and more efficient, these changes were not possible due to resource limitations, as Informant 12 would later clarify:

> If we wanted to change the model fast and efficiently, then it would require that we have these [agile coaches] in use more broadly, which would require financing for it... But we do not have the money to use for the transformation, making it a difficult equation, and now we are here.

Unidentified Informant was firm in their assessment that fully-fledged changes could not materialize without larger investment in agile coaches and that despite almost two years of training, the results were slim:

> We have put some effort into it [continuous learning], but if you do not have an agile coach in the everyday work, it will not happen. We have been doing this for two years soon, and we are still practicing. You must be constantly aware, and it is not agile if you do not constantly develop your services [for your customers]. In that sense, we are not invested [in agile].

Informant 1 would explain the support was not contingent on the service fees, referring to the sufficient management support many informants felt they were receiving, as seen in the survey data. They would suggest sufficient resources were being provided and that efficiency must emerge from newly adopted practices, meaning no additional resource allocation would be necessary:

> Service fees exist in all companies. Of course, nobody wants to increase those [service fees]. Instead, you need to be able to add value for the customers and communicate it better through robotics, automation, improving instructions, making the processes leaner, etc. And we are providing time and resources for this development, and it is the teams' responsibility that the processes improve. The service fees and support for the change are two separate things.

The optimization of resources dilemma represents a traditional problem in balancing organizational exploration and exploitation – how much resources can be used toward exploiting existing resources and capabilities versus developing new capabilities as there is always a trade-off between the two. However, how HR and the broader organization approached the problem represented a paradox. Instead, the changes were imposed simultaneously with an existing resource deficit in several teams. The changes needed to happen simultaneously with the operational efficiency remaining stable, taking away as few resources as possible. HR needed to become more customer-centric and efficient while expending minimal resources on organizational exploration (access to more developmental work and agile coaches) to develop these capabilities for the future.

The cascading effects of the efficiency-striven approach would be seen at all cultural levels discussed previously. Affecting not only the developmental work but also customer-centricity and adoption of new routines and practices, as many informants felt they were too busy to take on "additional work." creating a disjoint between "regular work" and agile. Though finances were now more transparent, and teams had more autonomous access to resources at team-level. Still, due to strict optimization of resources, finances would remain strict at the unit and team levels. The inability to extend these resources would restrict team-level autonomy and collaboration while binding employees further into operational work regardless of more autonomous access to resources. The culture of efficiency would run through all parts of the organization and its culture, inhibiting development, which would serve as a reminder of the pervasiveness of basic level assumptions.

Table 6: Compilation of Cultural Enablers and Inhibitors in Agile Transformation at SOK

Level	Descrip-	Agile Enablers	Agile Inhibitors
Artifacts	Agile Structures	• Decreased team sizes • Cross-unit collaboration pilots	• Siloing of (financial) resources • Siloing between teams leading to a lack of common tools, communications and learning
	Physical & Virtual Artifacts	• Increased structural and communicational transparency	• Insufficient virtual tools and communications prevent complete transparency
	Routines & Processes	• Structuring and systemization of work practices • Mutual reinforcement of practices	• Fragmentation of process approaches and synchronization of work • Fragmentation of agile identity
Espoused Values and Beliefs	Customer Centricity	• Increased focus on customer needs • Stakeholder mapping • HR Business Partner Roles • Adoption of Design Thinking methodology	• Top-down customer need evaluations • Few value co-creation opportunities • Insufficient stakeholders need prioritization, and a fragmented customer base
	Psychological Safety	• Psychological safety in new teams seen as maturing • Team-level psychological safety high • Easily approachable culture for new employees	• Lack of creative conflict • Conflict avoidance leading to negative storytelling • Newly formed teams' psychological safety lower than personal teams
Basic Assumptions	Organizational Control	• Decreased structural hierarchy • Need for iterative strategy recognized and being developed • Improving autonomy and independence • Loosened strategic goals	• Top-down control is maintained over the change process and strategy • Increased control over development and processes at an organizational level • Lack of sufficient agile knowledge and support to become fully independent
	Operational Efficiency	• Insufficient resources recognized • "Efficiency culture" recognized in other subunits • Team-level autonomous resources allocation	• Maintaining operational efficiency during a change process • Misaligned expectations and incentives tie into the efficiency culture • Insufficient resource allocation and flexibility for development and coaching

5 Discussion

5.1 Implications for theory

The findings support Schein and Schein's (2016) description of organizational culture. In addition, social fragmentation at team, unit and organization-level would create complexity, confusion and misalignment across all cultural levels. Organizational artifacts such as tools, routines, processes, and structural changes constituted first and most visible changes in the agile transformation. Most notably, the tools and processes supported the changes by creating more systemic processes and transparency. However, a lack of systemic communications would cause further siloing even in the renewed team structures. Espoused values and beliefs, such as psychological safety and customer-centricity, showed resistance toward changes due to the previous culture, social fragmentation, and outdated competencies but were retained in active discourse. New roles such as HR business partners and developmental models such as DT were being adopted to support these values showing active development. Taken-for-granted assumptions showed the most significant resistance and paradoxical increase in their use. The organization-wide hierarchy culture would bind them through resource constraints from other units and personally taken-for-granted assumptions of operating through controlling the changing environment and operating through efficiency that would affect all cultural layers.

As was recognized by the informants, the previous culture can be further strengthened by the intertwined subcultures within large organizations that actively resist change efforts made in other parts of the organization. Moreover, while adopting the cultural artifacts was well understood and accepted, they were impeded by insufficient time and resource allocation grounded in the taken-for-granted assumptions. Different cultural levels would thus interact and strengthen the effects on one another.

5.1.1 Cultural artifacts

The findings in terms of culture from Schein and Schein (2016) are strongly aligned. Many artifact-level changes such as adopting new language, tools, processes, and structure were recognized early during the study. Artifact-level changes constitute a crucial step toward changing a culture. As recognized by Sharp (2007, 2009) and further corroborated by this work, physical artifacts facilitate and enable agile work and communications. Moreover, the various routines and processes would structure and systemize work as found in previous studies (Dikert et al., 2016; Paasivaara et al., 2018). Like the findings of Gustavsson (2019), the routines and processes were applied with a "toolbox logic," selecting the best practices. The tools and processes that stood out encouraged agile values of transparency and continuous learning, such as Kanbans and retrospectives.

However, the problem with the artifacts-first approach is that it can leave changes shallow. As these changes are the most noticeable, they can create a falsified illusion of cultural change while the organization remains the same, leading to a scenario of "façade agile" (Maximini, 2018), as described by some informants. The organizational transparency and restructuring changes were the most apparent signs of how culture allows for artifact-level changes yet actively resists deeper-level changes. While technological transparency could easily be achieved enabling organizational transparency, the communications between teams across the organization remained highly siloed due to a lack of systematic team and unit-level communications Organizational roles were restructured, and hierarchies lowered, but at the same time, would double-down on the systems of control by restricting some roles further.

A common artifact-level issue reported in large-scale agile organizations is the interdependence between teams leading to a scenario where individual teams cannot break free from the rest of the organization that is operating hierarchically or in "waterfall mode" (Kniberg & Ivarsson, 2012; Lindvall et al., 2004; Mikalsen et al., 2019; van Amelsvoort & Hootegem, 2017). The findings here highlight the opposite phenomenon of a structurally siloed organization where teams operate with independence. In contrast, the overly atomized structure can impose its challenges, as recognized in this study. Lack of existing systematic cross-team communication channels and siloed financial models can inhibit, disincentivize or make cross-team collaboration impossible. Moreover, a lack of systematic communication would inhibit team and organizational-level learning. As individual teams might have figured out solutions to existing problems, these solutions would not be communicated or learned across teams due to lack of communication.

Siloing was most apparent in larger-scale cross-functional projects that would require cross-unit collaboration. The highly siloed structure created overlapping subcultures, agile identities, and financial disincentives that would become increasingly misaligned as teams would have to collaborate on larger projects. Even if projects benefited the broader or parent organization, the atomized structure would bring the focus back to the unit level, where the bigger picture could be easily lost. These findings reflect Conklin's (2006) description of wicked problems and social complexity. Social fragmentation of language, identity, and stakeholder prioritization would cause social fragmentation through various free-form interpretations of agile methods. Also, siloing of different units would inhibit collaboration and change between departments. As Conklin (2006) suggests, organizations should have a shared understanding of problems and commitments in an ideal scenario. These findings corroborate earlier studies where a shared baseline approach supports agile adoption (Cadieux & Heyn, 2018; Dikert et al., 2016; Paasivaara et al., 2018).

5.1.2 Espoused values and beliefs

The customer existed in much of the existing language, discussions, and interviews and was strongly intertwined with SOK's identity. Customer-centricity played a less significant role in observed behaviors. This reflects how espoused values can manifest themselves as desired behavior while not reflected in observed behaviors (Schein & Schein, 2016). In this instance, the old stock of knowledge or "knowledge inventory" (Berger & Luckmann, 1966; Levinthal & March, 1993) is no longer representative of modern practices, decoupling espoused values and observed behavior (Schein & Schein, 2016). Customer-centricity was understood differently from the contemporary concept leading to a different conceptual understanding of customer-centricity.

The significant organizational complexity and fragmentation reflective of Conklin's (2006) findings would be present. The findings of this study further indicate that the complex network of different stakeholders representing different needs creates difficulties in both customer prioritization and customer value prioritization. The large size of the organization and the high number of customer groups would lead to confusion and disagreements about customer value, which customer's voice to listen to and prioritize, and who ultimately represents the key customer.

Missing customer-centricity in agile is rarely discussed as the agile model is built around customer-centricity and raising the customer voice through co-creation. The findings indicate that over-reliance on behaviors predicated on the previous culture can lead to underestimating the need for specific changes, leading to insufficient adoption of changes. Similarly, the large-scale customer complexity is rarely discussed in agile literature, only recognized in one study with similar findings (Power, 2010). Findings here reflect how complex customer bases can lead to further social fragmentation and the need for further study and inquiry on the topic.

Existing research on the study of organizational culture and psychological safety remains sparse (Edmondson & Mogelof, 2005). Some authors argue that psychological safety can exist as an organizational-level macro-culture through organizational norms (Schein, 1985; Schein & Schein, 2016). However, many authors state that psychological safety is a team-level phenomenon (Edmondson, 2002; Edmondson & Mogelof, 2005; Edmondson & Lei, 2014). Contemporary research defines psychological safety as the ability to take interpersonal risks such as admitting error, engaging in task conflict, and seeking feedback that could lead to the person being seen as ignorant, negative, or intrusive (Edmondson 2002; Edmondson & Lei, 2014).

This study's findings support both theories. Inability to take full advantage of psychological safety through task conflict was seen as a combined result of the previously hierarchical culture and team-level maturity. This led to the inability to openly disagree or engage in "creative conflict" to avoid being seen as negative or unaligned. Moreover, the hierarchical position of the person within the organization could contribute to feelings of psychological safety or lack thereof (Edmondson, 2002). This could in part explain the differences in experienced psychological safety between teams as informants in higher hierarchical positions could feel more psychologically safe in teams where their relative hierarchical position is higher.

Although psychological safety has been widely recognized as the most critical factor in team-level performance in self-management literature (Duhigg, 2016; Edmondson & Lei, 2014; Pentland, 2012), the topic has received little attention in agile literature. The findings highlight the importance and the need for very high levels of psychological safety in agile teams. Even with high levels of management support, insufficient encouragement for challenging pre-existing beliefs, opinions, or behaviors can lead to the inability to engage in “creative conflict.” This can inhibit organizational learning and open communications, as found in this study.

The espoused values and beliefs recognized in this study reflect the findings of Schein and Schein (2016). While adopting values of customer centricity and psychological safety showed more resistance, they remained a part of the conscious discourse. Psychological safety was actively being developed and seen as an issue of a team and cultural “maturity” and a part of the culture that everyone took a conscious part in improving. Similarly, new roles such as HR business partner roles, DT tools, and more conscious customer-prioritization were undertaken to enhance customer-centricity in the future

5.1.3 Taken for granted assumptions

The culture of control and efficiency is fundamental to hierarchical organizational cultures (Cameron & Quinn, 2006; Mintzberg et al., 1998; Nerur & Balijepally, 2007) and would resist the changes the most. Radical changes can often cause intense anxiety and drive the organizational members to prior organizational identities (Elsbach & Kramer, 1996; Gioia et al., 2013; Schein & Schein, 2016). During the early phases of the change, the individual agile teams and HR relied strongly on previous cultural values in the face of adversity to reduce change-related uncertainty. This would create a paradoxical relationship where dismantling structures of hierarchy would lead to a stricter form of hierarchy and control during the early phases of an agile transformation meant to provide autonomy. The findings are reflected by authors across different fields of literature, who have described historically hierarchical organizations relying on further hierarchy during organizational change that provokes uncertainty (Barlow et al., 2011; Conklin, 2006; de Sitter et al., 1997; Dikert et al., 2016; Iivari & Iivari, 2011). However, the underlying reasons or mechanisms are still poorly understood and explained, especially in agile literature. Though the SOK HR was restructured to become less hierarchical, instead of loosening control, many reported being under an even tighter frame of control through restructured organizational roles giving less freedom to enact job roles and partake in the organizational change with cascading objectives and guidelines.

The OKR framework used at SOK suggests retaining early control; however, it also emphasizes the importance of bottom-up OKRs and warns about the potential disconnect that can happen without them (Hämäläinen & Sora, 2020). Indeed, insufficient team-level involvement in bottom-up OKRs would create a disconnect between the strategic goals and work due to tight framing and cascading top-down OKRs. The teams most successful in adopting the OKR model followed the Hämäläinen & Sora (2020) approach of aligning team-level OKRs with the annual organizational OKRs or creating iterative strategic goals, which the authors recommend.

Change management literature has widely recognized the lack of employee-level involvement in organizational and strategic change, creating a disconnect between the changes and weakening employee-level buy-in (Ford et al., 2008; Jarzabkowski & Spee, 2009). The study's findings further support the early involvement of employees in (strategic) change initiatives, as the inability to loosen control would alienate employees from the strategic goals and further entrench the organization in hierarchical decision-making.

Employees can also re-enact top-down control structures. Many employees themselves would act on these frames of control bottom-up, indicating a lack of change readiness and employee empowerment (Armenakis et al., 1993; Eilers et al., 2020; Malik et al., 2021; Rigby et al., 2018; Spreitzer & Doneson, 2005). Uncertainty felt by the employees would lead to a yearning for structure and guidance. These behaviors would manifest as falling back on old learned behaviors and being afraid to take full advantage of freed-up resources or to make more autonomous decisions without direct guidance, facilitating independent work. Empowerment and agile literature highlight the importance of continuous coaching, resource allocation, and sufficient access to resources and control as a crucial part of achieving autonomy (Eilers et al., 2020; Malik et al., 2021; Spreitzer & Doneson, 2005; Thomas & Velthouse, 1990) that is further supported by this study's findings.

The culture of efficiency would similarly be enforced. Lack of sufficient allocation has been recognized in previous studies in the form of lacking coaching, training, or inability to ease prior commitments (Dikert et al., 2016; Hoda & Noble, 2017; Pikkarainen, 2012). Reasons why or how this happens have not been thoroughly explored. In this study, the efficiency framework would be firmly embedded in the organization's culture and individual subcultures that would actively resist changes in HR representing organization-wide cultural fragmentation. The SOK HR would be further tied to the efficiency culture enforced by other units and inflexible resource allocation at the organization level. As all units acted financially, structurally, and culturally independently, it would lead to resource inflexibility, creating misaligned unit-level cost-optimization and enforcement of efficiency culture on HR by other units and the cooperatives.

The efficiency culture at SOK resembled traditional models of operation favoring organizational exploitation over exploration (Cameron & Quinn, 2006; March, 1991). However, as March and Levinthal (1993) recognized, lack of exploration can lead to a focus on narrow optimization of specific competencies, hurting the organization's long-term viability in favor of short-term financial gain. In other words, the efficiency culture at SOK could be compared to the competence traps described by March and Levinthal (1993), wherein the positive feedback loop of continuous successes and immediate feedback is favored over long-term learning and adaptation. This would create organizational myopia driven by rigid and strict finances and resource allocation that actively undermines the purpose of agile.

In practice, the efficiency culture meant that teams would be given little extra resources by giving additional time for developmental work or hiring more coaches. The tight budgets and inability to extend resources through increased service costs or shared resources across units would lead to prioritization of operational work and efficiency. Several teams would also report working understaffed while undertaking the agile transformation. However, organizational ambidexterity literature has long recognized that new explorative capabilities must come at the cost of organizational exploitation (March, 1991; O'Reilly & Tushman, 2008, 2013). Unwillingness to engage in this tradeoff would mean limited explorative capabilities at the unit level, as was most apparent at higher cultural levels. As was recognized by the informants, the lack of resources would minimize the time available for developmental goals, compromising the adoption of even the basic routines that were performed haphazardly, slowing down changes, and learning new routines and processes adopted as part of the change.

As Schein and Schein (2016) recognized, the taken-for-granted assumptions are rarely acknowledged directly, making them even more challenging to change. Issues were identified, but in most instances, operational work was seen as "something one must do" with little compromise. In this way, the chosen process becomes reified (Berger & Luckmann, 1966). Despite active efforts to transition into an agile culture where effectiveness emerges from rapid experimentation, change, and bottom-up leadership (Nerur & Balijepally, 2007; Schwaber & Sutherland, 2020), SOK and by extension its HR unit would become culture-bound by its previous culture, the subcultures from other units, and the regional cooperatives enforcing these values, actively resisting changes in cost structures or hierarchy.

5.2 Implications for practice

The study's findings suggest practitioners should start with smaller changes focusing on the most important values and deeper cultural assumptions.

Focusing on surface-level artifacts can create feelings of "quick wins," but mean changes never manifest beyond surface-level adoption (Maximini, 2018). A focused transformation will create a clear prioritization and understanding across the organization of the most desired values in the transformation and a lower amount of context-switching, creating higher efficiency change (Weinberg, 1992). Though changing everything at once or doing a "big-bang" change can seem appealing, a big-bang change is challenging and unlikely to succeed (Paasivaara et al., 2018; Rigby et al., 2018).

Large hierarchical organizations should start from small incremental changes in dismantling hierarchies and means of control early in the change process. This makes the changes materialize by gradually deconstructing control and culture of hierarchy, helps employees connect to the changes being made, and allows employees to learn how to become more independent during the change process (Bass & Riggio, 2006; Nerur & Balijepally, 2007; Jarzabkowski & Balogun, 2009). Control can be granted in different forms of bottom-up initiatives, such as allowing the employees to partake in the organizational change (Bass & Riggio, 2006), strategy process (Jarzabkowski & Spee, 2009), strategic venturing (Mintzberg et al., 1998), or by providing teams with less restricted access to financial resources and decision-making (Hastings, 2009). The most important part is facilitating early employee-level independence and self-organization (Nerur & Balijepally, 2007). Top management should provide common direction through bottom-up facilitation and remove any change impediments (Rigby et al., 2018).

Teams should be given sufficient resources to engage in the changes and act autonomously, as recognized by Dikert et al. (2016) and further reinforced by the findings of this study. Resource allocation in the form of time to learn basic practices, agile coaches, and development time to engage in active practice are necessary for the changes to occur. With a gradual transition and enough time, team members can internalize agile values better than with an all-at-once change (Rigby et al., 2018). The findings highlight the agile coaches' role is detrimental in day-to-day activities as facilitators of independent work and self-actualization, which is important even in developed agile teams, as recognized by Bäcklander (2019). Moreover, freeing up developmental resources is necessary for an organizational transformation (March, 1991) and for the changes to be sustainable in the long run (Dikert et al., 2016). Management must ensure access to sufficient material and financial resources that allow for bottom-up initiatives and changes to take place (Conger & Kanungo, 1988; Spreitzer & Doneson, 2005) while providing coaching, mental, and psychological support with task complexity that matches employee skills appropriately (Malik et al., 2021; Spreitzer & Doneson, 2005; Thomas & Velthouse, 1990).

The findings of this work indicate the importance of creating systematic tools for vertical and horizontal information exchange. Most importantly, facilitating bottom-up communications becomes essential as it enables knowledge sharing (Cohn, 2010), customer-centricity, as most customers' insights emerge from the field (Vargo & Lusch, 2004), and provides stronger motivation and commitment towards changes taking place (Ford et al., 2008). Facilitating vertical communications, for instance, through communities of practice (Kniberg & Skarin, 2012) becomes crucial for effective organizational learning and information exchange (Kane & Alavi, 2007; Pentland, 2012). For communication to be as open as possible, managers must facilitate psychological safety at both the team and organizational levels. Managers can facilitate psychological safety by setting an example of fallibility and openness, promoting an organization-wide culture of psychological safety, and adopting commitment based HR-practices that recognize team-level achievements and long-term commitment at the organizational level (Collins & Smith, 2006; Edmondson, 2002; Schein & Schein, 2016).

Creating common guidelines and shared identity in a large-scale organizational change where the organization is split into smaller individual working teams is necessary. Atomization of work practices makes cross-team collaboration and cooperation unfeasible in the long run if the teams do not share a common language, practices, and agile identity (Conklin, 2006; Dikert et al., 2016; Paasivaara et al., 2018). In large-scale organizations with varying needs and tasks, it is better to create flexible guidelines where different activities are prioritized and controlled on a spectrum between stricter alignment in core activities and free choice in peripheral activities. This ensures organizational-level (strategic) alignment without restricting or controlling team-level freedom or agility (e.g., Futurice, 2019; Hastings, 2009). Synchronization of activities in mutually timed iterations is required to ensure flexible overlap of work activities and reduction of waste, so teams do not have to wait for other teams' iterations, and that collaboration remains feasible.

In brief, based on the study's findings, large-scale agile transformations should be done through focused stepwise delivery starting from the lower-level tacit assumptions and gradually moving toward practices to retain focus and avoid unnecessary context-switching (Weinberg, 1992). In large-scale hierarchical organizations, this implies focusing on changing the assumptions of control and optimization (Cameron & Quinn, 2006; Mintzberg et al., 1998) toward empowering bottom-up leadership and communications (Barman et al., 2021; Holtzhausen & de Klerk, 2018) and organizational ambidexterity (March, 1991; O'Reilly & Tushman, 2013) through autonomous resource allocation (Dikert et al., 2016) and continuous team-level coaching and psychological support (Bäcklander, 2019; Edmondson & Lei, 2014; Malik et al., 2021). Prioritizing agile values that are most important for the organization should take priority. For instance, in customer-facing organizations practicing customer-centricity through value co-creation and customer experience management should take priority. Processes and practices should be seen as instruments of change toward tacit beliefs and values, not as an intrinsic part of the change or agile itself.

5.3 Limitations

Constructivist qualitative research does not aim for generalizability. As the case organization studied in this thesis presents a highly unique organizational structure embedded in a specific macroculture that is embedded in a different history in work, organization design, and worker's rights (de Sitter, 1997; den Hertog, 1977; Hofstede, 2001) the findings are likely not generalizable. However, the findings proposed here are highly grounded in data providing a thick description from the different participants that aim to deliver transferability of the findings in various settings.

Due to time limitations imposed on a master's thesis, longitudinal studies on this topic have been omitted. The study follows an early iteration of agile transformation efforts. It describes the early phases of cultural change, limiting what Iivari and Iivari (2011) described as a cultural diffusion of agile culture over time. While the effects of some of the changes can be seen at the early onset, the firmly held values and tacit beliefs take significantly more time to change, assuming they can be changed (Schein & Schein, 2016). For instance, many informants would describe the situation as "maturing," indicating long-term cultural change could be more effective. This meant I could not assess the full longitudinal effectiveness of the changes in the agile transformation. For instance, how the new roles, practices, and agile culture diffusion over time would manifest in a large-scale organization and if the culture of hierarchy could be fully dismantled over time.

The size of SOK as an organization and the highly-nested subcultures would create a significantly intertwining web of cultures. Traditional studies of culture are often performed as ethnographic studies with sustained long-term observations that can be complemented with different research methods (Charmaz, 2006). As Geertz (1973) explains, the goal of the ethnographer is to untangle these superimposed structures and layers of culture into a coherent narrative. To retain the quality of the findings, this study focused strictly on the HR organization and the cross-functional agile teams partaking in the agile transformation. To untangle this complex intertwined web of cultures would require interviewing several people from each team and long-term exposure to the different parts of the organization, which was outside this thesis's scope.

5.4 Future research

Several new areas for future research were discovered during the writing of this thesis. SOK utilized both iterative strategic management and agile models. Other agile organizations, such as Google and Intel, use OKR models (Doerr, 2018; Niev & Lamorte, 2016), but little research exists on integrating iterative strategic management frameworks with agile. Strategy plays an integral role in the top management team's ability to create guidelines for behavior (Moran, 2016; Nerur & Balijepally, 2007) and organizational culture (Schein & Schein, 2016). Better understanding the role of iterative strategy in forming agile culture could prove a valuable next step in agile development.

As very few studies have been conducted on agile practices in non-software intensive organizations, this thesis is only the beginning of what should be extended into a wider range of literature. Recent authors have shown interest in HR (Cappelli & Tavis, 2018; McMackin & Heffman, 2021) and finance (Barton et al., 2018), but more areas need to be covered for transferable findings. Studies across different contexts and industries would also allow for a more extensive study of the differences between agile culture and practices in different industrial subcultures. Dikert et al. (2016) recognized that the refusal to adopt agile practices by other functions is the single most common point of failure for agile transformations. Therefore, understanding the cultural differences between different organizational functions and the interactions between subcultures within organizations would provide valuable information for theory and practice.

As national cultures were consciously omitted from this study, the impact of national culture on agile culture and practices offers a promising research area. Most of the existing agile research is developed around western literature, and the study here is no exception. Western countries score high on individualism and low on power distance and uncertainty avoidance (Hofstede, 2001). However, many eastern cultures conflict with these values significantly. Traditionally, eastern cultures tend to score higher on uncertainty avoidance and collectivism, often having a strong culture of saving face that does not allow for similar openness (Hofstede, 2001; Schein & Schein, 2016), which could impede agile adoption. Many large organizations operate internationally. Thus, studying differences between agile cultures and culture adoptions for internationally operating organizations would provide valuable information for theory and practice. The study on global software engineering has done preliminary research on agile practices globally, but the overall effects of culture have not been fully considered. Especially little research exists on the interactions between non-western cultures and agile culture.

6 Summary

This thesis has been a qualitative study of how organizational culture affects the adoption of large-scale agile practices in non-software intensive organizations. The study was done at SOK, a cooperative subsidiary of S Group, which oversees the operative functions and strategic management of the S Group, Finland's largest retailer employing over 40,000 employees. The primary focus of the study has been the SOK's HR unit and cross-functional agile teams partaking in the agile transformation. The agile transformation in the organization at the beginning of the year in January 2022, simultaneously with the start of this study.

The study was performed as a qualitative constructivist grounded theory study over six months using observations, interviews, and secondary data. The interviews were primarily focused on members of a planning group at SOK who partook in the design and planning of the agile transformation efforts before they took place and were part of the agile transformation.

Large-scale organizations often have a significant history. They are deeply embedded in their existing organizational culture. The study findings align with the Schein and Schein (2016) explanation of organizational culture. Findings indicate that large-scale organizations can easily undertake changes that affect surface-level cultural artifacts, such as adopting new tools, language, processes, and structures. However, the deeper-level espoused values, beliefs, and taken-for-granted assumptions resist change and can easily become unnoticed.

As organizations rely on their existing stock of knowledge and culture in the form of "the way we do things" (Gioia et al., 2013; Scott, 2013; Schein & Schein, 2016), the adversity and uncertainty faced by organizations during large-scale organizational transformation bind organizations back toward this learned stock of knowledge, paradoxically tightening the deeper-levels of pre-existing culture. This means adopting an even stronger hierarchy and efficiency to compensate for the loss of control over uncertainty and resources. As agile or "adhocracy" cultures represent the opposite of hierarchical cultures (Cameron & Quinn, 2006), the reliance on the pre-existing stock of knowledge will create active resistance that is easily hidden in the implicit assumptions of organizational culture.

While many of the surface-level mechanics of cultural inertia in organizational change are well understood, the reasons for behind this are not. This study extends agile practice and literature by creating a deeper-level understanding of the underlining interactions between organizational culture and agile transformations and their mutually reinforcing relationship. Culture is often highlighted as one of the most common issues in agile transformations (Digital.ai, 2021). This study brings value to academics and practitioners by linking the empirical findings to actionable practices practitioners can undertake.

References

Aasland, K., & Blankenburg, D. (2012, June 18–20). An analysis of the uses and properties of the Obeya. In *2012 18th International ICE Conference on Engineering, Technology, and Innovation* (pp. 1–10). IEEE. https://doi.org/10.1109/ICE.2012.6297660

Abdelnour-Nocera, J., & Sharp, H. (2007). *Adopting agile in a large organization: balancing the old with the new*. Technical report 2007/12, Milton Keynes, UK. https://doi.org/10.1007/978-3-540-68255-4_5

Abrahamsson, P., Babar, M. A., & Kruchten, P. (2010). Agility and architecture: Can they coexist? *IEEE Software*, *27*(2), 16–22. https://doi.org/10.1109/MS.2010.36

Adler, P. S. (1993). Time-and-motion regained. *Harvard Business Review, 71*(1), 97–108.

Aghina, W., De Smet, A., & Weerda, K. (2015). Agility: It rhymes with stability. *McKinsey Quarterly*, *51*(4), 2–9.

Aghina, W., Ahlback, K., De Smet, A., Lackey, G., Lurie, M., Muraka, M., & Handscom., C. (2018, January 22) The five trademarks of agile organizations. *McKinsey & Company*. https://www.mckinsey.com/business-functions/people-and-organizational-performance/our-insights/the-five-trademarks-of-agile-organizations

Aghina, W., Handscomb, C., Ludolph, J., West, D., & Yip, A. (2019, December 20). How to select and develop individuals for successful agile teams: A practical guide. *McKinsey & Company*. https://www.mckinsey.com.br/~/media/McKinsey/Business%20Functions/Organization/Our%20Insights/How%20to%20select%20and%20develop%20individuals%20for%20successful%20agile%20teams%20A%20practical%20guide/How-to-select-and-develop-individuals-for-successful-agile-teams.pdf

Alukal, G. (2007). Lean kaizen in the 21st century. *Quality progress, 40*(8), 69–-70.

Amelsvoort, P. V., & Hootegem, G. V. (2017). Towards a total workplace innovation concept based on sociotechnical systems design. In *Workplace Innovation* (pp. 281–299). Springer, Cham. https://doi.org/10.1007/978-3-319-56333-6_17

Anthony, S. D., Viguerie, S. P., Schwartz, E. I., & Van Landeghem, J. (2018). 2018 Corporate longevity forecast: Creative destruction is accelerating. *INNOSIGHT Holdings, LLC, Boston, MA, Feb*.

Argyris, C. (1995). Action science and organizational learning. *Journal of managerial psychology, 10,* 20–26

Armenakis, A. A., Harris, S. G., & Mossholder, K. W. (1993). Creating readiness for organizational change. *Human relations*, *46*(6), 681–703. https://doi.org/10.1177/001872679304600601

Babinet, E., & Ramanathan, R. (2008, August 04–08). Dependency management in a large agile environment. In Agile 2008 Conference (pp. 401–406). IEEE. https://doi.org/10.1109/Agile.2008.58

Barlow, J. B., Giboney, J., Keith, M. J., Wilson, D., Schuetzler, R. M., Lowry, P. B., & Vance, A. (2011). Overview and guidance on agile development in large organizations. *Communications of the Association for Information Systems*, *29*(2), 25–44. https://doi.org/10.2139/ssrn.1909431

Barman, F., Riederer, G., & Salo., O. (2021, October 21). Agile talent: How to revamp your people model to enable value through agility. *McKinsey & Company*. https://www.mckinsey.com/business-functions/people-and-organizational-performance/our-insights/agile-talent-how-to-revamp-your-people-model-to-enable-value-through-agility

Barney, J. B. (1986). Organizational culture: can it be a source of sustained competitive advantage? *Academy of management review*, *11*(3), 656–665. https://doi.org/10.5465/amr.1986.4306261

Barton, D., Carey, D., & Charan, R. (2018). One bank's agile team experiment: How ING revamped its retail operation. *Harvard Business Review, 96*(2), 59–61.

Bass, B. M., & Riggio, R. E. (2006). *Transformational leadership*. Psychology Press.

Bass, J. M., & Salameh, A. (2020). Agile at scale: a summary of the 8th International Workshop on Large-Scale Agile Development. In *Agile Processes in Software Engineering and Extreme Programming–Workshops* (p. 68). https://doi.org/10.1007/978-3-030-58858-8

Baudrillard, J. (1981). *Simulacra and simulation*. University of Michigan press.

Beck, K. (2000). Embracing change with extreme programming. *Computer*, *32*(10), 70–77. https://doi.org/10.1109/2.796139

Beck, K., Hendrickson, M., & Fowler, M. (2001). *Planning extreme programming*. Addison-Wesley Professional.

Beck, K., Beedle, M., Van Bennekum, A., Cockburn, A., Cunningham, W., Fowler, M., ... & Thomas, D. (2001). The agile manifesto.

Beedle, M., Devos, M., Sharon, Y., Schwaber, K., & Sutherland, J. (1999). SCRUM: An extension pattern language for hyperproductive software development. *Pattern languages of program design*, *4*(1), 637–651.

Bennis, W. G., & O'Toole, J. (2005). How business schools have lost their way. *Harvard business review, 83*(5), 96–104.

Berger, P. L., & Luckmann, T. (1966). *The social construction of reality: A treatise in the sociology of knowledge*. Anchor.

Bernstein, E., Bunch, J., Canner, N., & Lee, M. (2016). Beyond the holacracy hype. *Harvard business review*, *94*(7), 38–49.

Best, M., & Neuhauser, D. (2006). Walter A Shewhart, 1924, and the Hawthorne factory. *BMJ quality & safety*, *15*(2), 142–143. https://doi.org/10.1136/qshc.2006.018093

Bevins, F., & De Smet, A. (2013). Making time management the organization's priority. *McKinsey Quarterly*, *1*, 26–41.

Beyer, H., Holtzblatt, K., & Baker, L. (2004, August 15–18). An agile customer-centered method: rapid contextual design. In Conference on extreme programming and agile methods (pp. 50–59). Springer. https://doi.org/10.1007/978-3-540-27777-4_6

Bhakoo, V., & Choi, T. (2013). The iron cage exposed: Institutional pressures and heterogeneity across the healthcare supply chain. *Journal of Operations Management*, *31*(6), 432-449. https://doi.org/10.1016/j.jom.2013.07.016

Birkinshaw J., & Ridderstråle J. (2015, December 01). Adhocracy for an agile age. *McKinsey & Company*. https://www.mckinsey.com/~/media/mckinsey/business%20functions/people%20and%20organizational%20performance/our%20insights/adhocracy%20for%20an%20agile%20age/adhocracy%20for%20an%20agile%20age.pdf

Birshan, M., Engel, M., & Sibony, O. (2013). Avoiding the quicksand: Ten techniques for more agile corporate resource allocation. *McKinsey Quarterly*, *4*, 60–63.

Boynton, P. M., & Greenhalgh, T. (2004). Selecting, designing, and developing your questionnaire. Bmj, 328(7451), 1312–1315. https://doi.org/10.1136/bmj.328.7451.1312

Brenner, L. A., Koehler, D. J., & Tversky, A. (1996). On the evaluation of one-sided evidence. *Journal of Behavioral Decision Making, 9*(1), 59–70. https://doi.org/10.1002/(SICI)1099-0771(199603)9:1<59::AID-BDM216>3.0.CO;2-V

Brown, T. (2008). Design thinking. *Harvard business review, 86*(6), 84–92.

Bryan, L. (2009). Dynamic management: Better decisions in uncertain times. *McKinsey Quarterly*, *1*, 32–40.

Buch, K., & Wetzel, D. K. (2001). Analyzing and realigning organizational culture. *Leadership & Organization Development Journal*, 22(1), 40–44. https://doi.org/10.1108/01437730110380219

Bäcklander, G. (2019). Doing complexity leadership theory: How agile coaches at Spotify practise enabling leadership. *Creativity and Innovation Management*, *28*(1), 42–60. https://doi.org/10.1111/caim.12303

Cabrera, E. F., & Bonache, J. (1999). An expert HR system for aligning organizational culture and strategy. *Human Resource Planning*, *22,* 51–61.

Cadieux, S., & Heyn, M. (2018, April 13). The journey to an agile organization at Zalando. *McKinsey & Company*. https://mck.co/2JoSLwP

Cameron, K. S., & Quinn, R. E. (2006). *Diagnosing and changing organizational culture: Based on the competing values framework*. John Wiley & Sons.

Cappelli, P., & Tavis, A. (2018). HR goes agile. Spotlight series on the new rules of talent management. *Harvard Business Review. 96*(2), 46–52

Carl, D., Gupta, V., & Javidan, M. 2004. Power distance. In R. House, P. Hanges, M. Javidan, P. Dorfman, V. & Gupta, V. (Eds.), Culture, leadership, and organizations: The Globe study of 62 societies: 513–563. Thousand Oaks, CA: Sage.

Carmeli, A., Brueller, D., & Dutton, J. E. (2009). Learning behaviours in the workplace: The role of high-quality interpersonal relationships and psychological safety. *Systems Research and Behavioral Science: The Official Journal of the International Federation for Systems Research*, *26*(1), 81–98. https://doi.org/10.1002/sres.932

Carson, J. B., Tesluk, P. E., & Marrone, J. A. (2007). Shared leadership in teams: An investigation of antecedent conditions and performance. *Academy of management Journal*, *50*(5), 1217–1234. https://doi.org/10.2307/20159921

Catmull, E. (2008). *How Pixar fosters collective creativity. Harvard Business Review, 86*(9), 65–72

Charmaz, K. (2006). *Constructing grounded theory: A practical guide through qualitative analysis*. Sage.

Chatman, J. A., & O'Reilly, C. A. (2016). Paradigm lost: Reinvigorating the study of organizational culture. *Research in Organizational Behavior*, *36*, 199–224. https://doi.org/10.1016/j.riob.2016.11.004

Cockburn, A. (2002). Agile software development joins the" would-be" crowd. *Cutter IT Journal*, *15*(1), 6–12.

Cockburn, A. (2006). *Agile software development: the cooperative game*. Pearson Education.

Cohn, M. (2004). *User stories applied: For agile software development*. Addison-Wesley Professional.

Cohn, M. (2005). *Agile estimating and planning*. Pearson Education.

Cohn, M. (2010). *Succeeding with agile: software development using Scrum*. Pearson Education.

Collins, C. J., & Smith, K. G. (2006). Knowledge exchange and combination: The role of human resource practices in the performance of high-technology firms. *Academy of management journal*, *49*(3), 544–560. https://doi.org/10.5465/AMJ.2006.21794671

Comella-Dorda, S., Garg, L., Thareja, S., & Vasquez-McCall, B. (2020, April 28). Revisiting agile teams after an abrupt shift to remote. *McKinsey & Company*. https://www.mckinsey.com/business-functions/people-and-organizational-performance/our-insights/revisiting-agile-teams-after-an-abrupt-shift-to-remote

Conboy, K., & Carroll, N. (2019). Implementing large-scale agile frameworks: challenges and recommendations. *IEEE Software*, *36*(2), 44–50. https://doi.org/10.48550/arXiv.1901.08130

Conger, J. A., & Kanungo, R. N. (1988). The empowerment process: Integrating theory and practice. *Academy of management review*, *13*(3), 471–482. https://doi.org/10.2307/258093

Conklin, J. (2006). *Wicked problems & social complexity* (Vol. 11). Napa, USA: CogNexus Institute.

Cusumano, M. A., & Yoffie, D. B. (1999). Software development on Internet time. *Computer, 32*(10), 60–69. 482. https://doi.org/10.1109/2.796110

Da Silva, T. S., Martin, A., Maurer, F., & Silveira, M. (2011, August 07–13). User-centered design and agile methods: a systematic review. In 2011 AGILE conference (pp. 77–86). IEEE. https://doi.org/10.1109/AGILE.2011.24

Dailey, S. L., & Browning, L. (2014). Retelling stories in organizations: Understanding the functions of narrative repetition. *Academy of Management Review*, *39*(1), 22–43. https://doi.org/10.5465/amr.2011.0329

Dana, W. H. (1993). The X-15 lessons learned. NASA Dryden Resident Facilcity, Technological Report AIAA-93-0309. Updated 01 March 2008. Retrieved 11 January 2022 from https://web.archive.org/web/20201027011745/https://www.nasa.gov/centers/dryden/history/Speeches/x-15_speech/x15-1spch.html

De Sitter, L. U., Den Hertog, J. F., & Dankbaarl, B. (1997). From complex organizations with simple jobs to simple organizations with complex jobs. *Human Relations*, *50*(5), 497–534. https://doi.org/10.1023/A:1016987702271

Deal, T. E., & Kennedy, A. A. (1982). *Corporate Cultures: The Rites and Rituals of Corporate Life*. Addison Wesley Publishing Company.

Deci, E. L., Koestner, R., & Ryan, R. M. (1999). A meta-analytic review of experiments examining the effects of extrinsic rewards on intrinsic motivation. *Psychological Bulletin*, *125*(6), 627–668. https://doi.org/10.1037/0033-2909.125.6.627

Deci, E. L., Olafsen, A. H., & Ryan, R. M. (2017). Self-determination theory in work organizations: The state of a science. *Annual review of organizational psychology and organizational behavior*, *4*(1), 19–43. https://doi.org/10.1146/annurev-orgpsych-032516-113108

Den Hertog, J. E. (1977). The search for new leads in job design: The Philips case. *Journal of Contemporary Business, 6*(2), 49–67.

Denning, S. (2015). Agile: it's time to put it to use to manage business complexity. *Strategy & Leadership*, *43*(5), 10–17. https://doi.org/10.1108/SL-07-2015-0057

Denning, S. (2018). *The age of agile: How smart companies are transforming the way work gets done*. Amacom.

Deshpande, A., Sharp, H., Barroca, L., & Gregory, P. (2016, September 22). Remote working and collaboration in agile teams. In *International conference on information systems*, (pp. 11–14). AIS Electronical Library.

Detert, J. R., & Edmondson, A. C. (2011). Implicit voice theories: Taken-for-granted rules of self-censorship at work. *Academy of management journal*, *54*(3), 461–488. https://doi.org/10.5465/AMJ.2011.61967925

DiCicco-Bloom, B., & Crabtree, B. F. (2006). The qualitative research interview. *Medical education*, *40*(4), 314–321. https://10.1111/j.1365-2929.2006.02418.x

Digital.ai. (2021). 15th Annual State of agile Report. Retrieved 6 February 2022 from
https://info.digital.ai/rs/981-LQX-968/images/RE-SA-15th-Annual-State-Of-agile-Report.pdf

Dikert, K., Paasivaara, M., & Lassenius, C. (2016). Challenges and success factors for large-scale agile transformations: A systematic literature review. *Journal of Systems and Software*, *119*, 87–108. https://doi.org/10.1016/j.jss.2016.06.013

DiMaggio, P. J., & Powell, W. W. (1983). The iron cage revisited: Institutional isomorphism and collective rationality in organizational fields. *American sociological review*, *48*(2), 147–160. https://doi.org/10.2307/2095101

Dimitrijević, S., Jovanović, J., & Devedžić, V. (2015). A comparative study of software tools for user story management. *Information and Software Technology, 57*, 352–368. https://doi.org/10.1016/j.infsof.2014.05.012

Dixon-Woods, M., Shaw, R. L., Agarwal, S., & Smith, J. A. (2004). The problem of appraising qualitative research. *BMJ Quality & Safety*, *13*(3), 223–225. http://doi.org/10.1136/qshc.2003.008714

Doerr, J. (2018). *Measure what matters: How Google, Bono, and the Gates Foundation rock the world with OKRs*. Penguin.

Drath, W. H., & Palus, C. J. (1994). *Making common sense: Leadership as meaning-making in a community of practice* (Technical Report No. 156). NC: Center for Creative Leadership. https://doi.org/10.35613/ccl.1994.2004

Drucker, P. (1954). *The practice of Management*. Harper & Row.

Duhigg, C. (2016, February 25). What Google learned from its quest to build the perfect team. *The New York Times Magazine*. http://www.nytimes.com/2016/02/28/magazine/what-google-learned-from-its-quest-to-build-the-perfect-team.html

Dybå, T., & Dingsøyr, T. (2009). What do we know about agile software development? *IEEE Software, 26*(5), 6–9. https://doi.org/10.1109/MS.2009.145

Eco, U. (1973). *Travels in hyper reality: Essays*. Houghton Mifflin Harcourt.

Edmondson, A. (1999). Psychological safety and learning behavior in work teams. *Administrative science quarterly*, *44*(2), 350–383. https://doi.org/10.2307/2666999

Edmondson, A. C. (2002). *Managing the risk of learning: Psychological safety in work teams* (pp. 255-275). Cambridge, MA: Division of Research, Harvard Business School. https://doi.org/10.1002/9780470696712.ch13

Edmondson, A. C., & Mogelof, J. P. (2005). Explaining psychological safety in innovation teams: Organizational culture, team dynamics, or personality? In L. Thompson., & C. Choi. (Eds.), Creativity and innovation in organizational teams (pp. 109–136). Mahwah, NJ: Lawrence Erlbaum Associates. https://10.4324/9781410615732

Edmondson, A. C., & Lei, Z. (2014). Psychological safety: The history, renaissance, and future of an interpersonal construct. *Annual review of organizational psychology and organizational behavior*, *1*(1), 23–43. https://10.1146/annurev-orgpsych-031413-091305

Eilers, K., Simmert, B., & Peters, C. (2020, December 13–16). Doing Agile vs. Being Agile - Understanding Their Effects to Improve agile Work. In *International Conference on Information Systems (ICIS).*

Eisenhardt, K. M. (1989). Building theories from case study research. *Academy of management review, 14*(4), 532–550. https://doi.org/10.2307/258557

Eisenhardt, K. M., & Graebner, M. E. (2007). Theory building from cases: Opportunities and challenges. *Academy of management journal, 50*(1), 25–32. https://doi.org/10.5465/amj.2007.24160888

Elsbach, K. D., & Kramer, R. M. (1996). Members' responses to organizational identity threats: Encountering and countering the Business Week rankings. *Administrative science quarterly*, *41*(3), 442–476. https://doi.org/10.2307/2393938

Emery, F. E., Thorsrud, E., & Trist, E. (1969). *Form and content in industrial democracy*. Van Gorcum.

Endrissat, N., & von Arx, W. (2013). Leadership practices and context: Two sides of the same coin. *Leadership*, *9*(2), 278–304. https://doi.org/10.1177/1742715012468786

Fairhurst, G. T., & Grant, D. (2010). The social construction of leadership: A sailing guide. *Management communication quarterly*, *24*(2), 171–210. https://doi.org/10.1177/0893318909359697

Farrow, A., & Greene, S. (2008, August 04–08). Fast & predictable a light-weight release framework promotes agility through rhythm and flow. In *Agile 2008 Conference* (pp. 224–228). IEEE. https://doi.org/10.1109/Agile.2008.83

Felipe, C. M., Roldán, J. L., & Leal-Rodríguez, A. L. (2017). Impact of organizational culture values on organizational agility. *Sustainability*, *9*(12), 2354. https://doi.org/10.3390/su9122354

Ford, J. D., Ford, L. W., & D'Amelio, A. (2008). Resistance to change: The rest of the story. Academy of Management Review, 33(2), 362–377. https://doi.org/10.5465/AMR.2008.31193235

Frazier, M. L., Fainshmidt, S., Klinger, R. L., Pezeshkan, A., & Vracheva, V. (2017). Psychological safety: A meta-analytic review and extension. *Personnel Psychology*, *70*(1), 113–165. http://doi.org/10.1111/peps.12183

Frow, P., & Payne, A. (2007). Towards the ‘perfect’ customer experience. *Journal of Brand Management*, *15*(2), 89–101. http://doi.org/10.1057/palgrave.bm.2550120

Futurice (2019). Lean Johtaminen. https://lci.fi/wp-content/uploads/2019/03/1-Tuomas-Syrj%C3%A4nen-Lean-Johtaminen-Jakoversio.pdf

Gabarro, J. J. (1990). The development of working relationships. In J. Galegher, R. E. Kraut, & C. Egido (Eds.), *Intellectual teamwork: Social and technological foundations of cooperative work* (pp. 79–110). Lawrence Erlbaum Associates, Inc. (Originally appeared in the "Handbook of Organizational Behavior" (Prentice-Hall, 1987), Lorsch, ed., pp. 172-189)

Gagné, M., & Deci, E. L. (2005). Self-determination theory and work motivation. *Journal of Organizational Behavior*, *26*(4), 331–362. http://doi.org/10.1002/job.322

Gandomani, T. J., Zulzalil, H., Ghani, A.A.A., Bakar, A., & Sharif, K. Y. (2014). Exploring facilitators of transition and adoption to agile methods: a grounded theory study. *Journal of Software*, *9*(7), 1666–1678. http://doi.org/10.4304/jsw.9.7.1666-1678

Garfield, C. (1993). Employee empowerment. *Executive Excellence, 10(3)*, 20–22.

Geertz, C. (1973). *The Interpretation of Cultures*. London, GB: Hutchinson & C

Gerstner, C. R., & Day, D. V. (1997). Meta-analytic review of leader-member exchange theory: Correlates and construct issues. *Journal of Applied Psychology, 82*(6), 827–844. http://doi.org/10.1037//0021-9010.82.6.827

Ghoshal, S. (2005). Bad management theories are destroying good management practices. *Academy of Management learning & education*, *4*(1), 75–91. https://doi.org/10.5465/amle.2005.16132558

Gibbs, G. R. (2013, February 4). *A Discussion with Prof Kathy Charmaz on Grounded Theory*. [Video]. Youtube. https://www.youtube.com/watch?v=D5AHmHQS6WQ

Gioia, D. A., & Pitre, E. (1990). Multiparadigm perspectives on theory building. *Academy of management review*, *15*(4), 584–602. https://doi.org/10.5465/amr.1990.4310758

Gioia, D. A., Patvardhan, S. D., Hamilton, A. L., & Corley, K. G. (2013). Organizational identity formation and change. *Academy of Management Annals*, *7*(1), 123–193. https://doi.org/10.1080/19416520.2013.762225

Glaser, B. G., & Strauss, A. L. (1967). *The discovery of grounded theory: Strategies for qualitative research*. Routledge.

Glaser, B. G. (1978). *Theoretical sensitivity*. MillValley, CA: The Sociology Press.

Gómez, C., & Rosen, B. (2001). The leader-member exchange as a link between managerial trust and employee empowerment. *Group & Organization Management*, *26*(1), 53–69. https://doi.org/10.1177/1059601101261004

Graham, J. R., Harvey, C. R., Popadak, J., & Rajgopal, S. (2017). Corporate Culture: Evidence from the Field. *Working Paper*, Duke University. https://doi.org/10.3386/w23255

Grass, A., Backmann, J., & Hoegl, M. (2020). From empowerment dynamics to team adaptability: exploring and conceptualizing the continuous agile team innovation process. *Journal of Product Innovation Management*, *37*(4), 324–351. https://doi.org/10.1111/jpim.12525

Greenleaf, R. K. (1977). *Servant leadership: A journey into the nature of legitimate power and greatness*. Paulist Press.

Gren, L., Torkar, R., & Feldt, R. (2017). Group development and group maturity when building agile teams: A qualitative and quantitative investigation at eight large companies. *Journal of Systems and Software*, *124*, 104–119. https://doi.org/10.1016/j.jss.2016.11.024

Groysberg, B., Lee, J., Price, J., & Cheng, J. (2018). The leader's guide to corporate culture. *Harvard business review*, *96*(1), 44–52.

Gruber, M., De Leon, N., George, G., & Thompson, P. (2015). Managing by design. *Academy of management journal, 58*(1), 1–7. https://doi.org/10.5465/amj.2015.4001

Gustavsson, T. (2019, May 21–25). Voices from the teams-impacts on autonomy in large-scale agile software development settings. In *International Conference on Agile Software Development* (pp. 29–36). Springer, Cham. https://doi.org/10.1007/978-3-030-30126-2_4

Gustavsson, T. (2021, June 14–18). Institutional Logics in Large-Scale Agile Software Development Transformations. In *International Conference on Agile Software Development* (pp. 12–19). Springer, Cham. https://doi.org/10.1007/978-3-030-88583-0_2

Hall, S., Lovallo, D., & Musters, R. (2012). How to put your money where your strategy is. *McKinsey Quarterly*, *2*, 27–38.

Hansen, M. T., & Baggesen, H. (2009, August 24–28). From CMMI and isolation to Scrum, Agile, Lean, and collaboration. In *2009 Agile Conference* (pp. 283–288). IEEE. https://doi.org/10.1109/AGILE.2009.18

Hastings, R. (2009, August 01). Netflix Culture: Freedom & Responsibility. [PowerPoint slides]. SlideShare. https://www.slideshare.net/reed2001/culture-1798664

He, Z., & Wong, P. (2004). Exploration vs. Exploitation: An Empirical Test of the Ambidexterity Hypothesis. *Organization Science, 15*(4), 481–494. https://doi.org/10.1287/orsc.1040.0078

Herzberg, F. W. (1968). One More Time; How Do You Motivate Employees? *Harvard Business Review, 56*(1), 53–62.

Himmelman, A. T. (2001). On coalitions and the transformation of power relations: Collaborative betterment and collaborative empowerment. *American journal of community psychology*, *29*(2), 277–284. https://doi.org/10.1023/A:1010334831330

Hoda, R. (2011). Self-organizing agile teams: A grounded theory.

Hoda, R., Noble, J., & Marshall, S. (2012). Developing a grounded theory to explain the practices of self-organizing agile teams. Empirical Software Engineering, 17(6), 609–639. https://doi.org/10.1007/s10664-011-9161-0

Hoda, R., & Noble, J. (2017). Becoming agile: a grounded theory of agile transitions in practice. In 2017 IEEE/ACM 39th International Conference on Software Engineering (ICSE) (pp. 141-151). *IEEE.* https://doi.org/10.1109/ICSE.2017.21

Hoda, R., Salleh, N., & Grundy, J. (2018). The rise and evolution of agile software development. IEEE Software, 35(5), 58–63. https://doi.org/10.1109/10.1109/MS.2018.290111318

Hofstede, G. (2001). *Culture's consequences: International differences in work-related values* (Vol. 2). Sage.

Hogan, S. J., & Coote, L. V. (2014). Organizational culture, innovation, and performance: A test of Schein's model. *Journal of business research*, *67*(8), 1609-1621. https://doi.org/10.1016/j.jbusres.2013.09.007

Holtzblatt, K., & Beyer, H. (1993). Making customer-centered design work for teams. *Communications of the ACM*, 36(10), 92–103. https://doi.org/10.1145/163430.164050

Holtzhausen, N., & de Klerk, J. J. (2018). Servant leadership and the Scrum team's effectiveness. *Leadership & Organization Development Journal*, 39(7), 873–882. https://doi.org/10.1108/LODJ-05-2018-0193

Holweg, M. (2007). The genealogy of lean production. *Journal of operations management*, 25(2), 420–437. https://doi.org/10.1016/j.jom.2006.04.001

Honold, L. (1997). A review of the literature on employee empowerment. *Empowerment in organizations, 5*(4), 202–212. https://doi.org/10.1108/14634449710195471

Hotten, R. (2015, December 10). Volkswagen: The scandal explained. *BBC.* https://www.bbc.com/news/business-34324772

Hummel, M., Rosenkranz, C., & Holten, R. (2013). The role of communication in agile systems development. *Business & Information Systems Engineering*, *5*(5), 343–355. https://doi.org/10.1007/s12599-013-0282-4

Hämäläinen, J., Sora, H. (2020). *Strategia arkeen OKR-mallilla: käytännönläheinen opas OKR-mallin käyttöönottoon*. Kauppakamari.

Iivari, J., & Iivari, N. (2011). The relationship between organizational culture and the deployment of agile methods. *Information and software technology*, *53*(5), 509–520. https://doi.org/10.1016/j.infsof.2010.10.008

Jalali, S., & Wohlin, C. (2012). Global software engineering and agile practices: a systematic review. *Journal of Software: Evolution and Process*, *24*(6), 643–659. https://doi.org/10.1002/smr.561

Jaramillo, F., Grisaffe, D. B., Chonko, L. B., & Roberts, J. A. 2009. Examining the impact of servant leadership on salesperson's turnover intention. *Journal of Personal Selling and Sales Management*, 29, 351–365. https://doi.org/10.2753/PSS0885-3134290404

Jarzabkowski, P., & Spee, A. P. (2009). Strategy-as-practice: A review and future directions for the field. *International Journal of Management Reviews*, 11(1), 69–95. https://doi.org/10.1111/j.1468-2370.2008.00250.x

Jarzabkowski, P., & Balogun, J. (2009). The practice and process of delivering integration through strategic planning. *Journal of Management Studies*, *46*(8), 1255–1288. https://doi.org/10.1111/j.1467-6486.2009.00853.x

Jørgensen, M., & Moløkken, K. (2002, July 15–19). Combination of software development effort prediction intervals: why, when, and how? In Proceedings of the 14th international conference on Software engineering and knowledge engineering (pp. 425–428). https://doi.org/10.1145/568828.568833

Kane, G. C. & Alavi M., (2007). Information Technology and Organizational Learning: An Investigation of Exploration and Exploitation Process. *Organization Science, 18*(5), 796–812. http://doi.org/10.1287/orsc.1070.0286

Kanter, R.M. (1977). *Men and Women of the Corporation*. New York: Basic Books.

Kniberg, H., & Skarin, M. (2010). *Kanban and Scrum-making the most of both*. Lulu.com

Kniberg, H., & Ivarsson, A. (2012, October). *Scaling Agile @ Spotify with Tribes, Squads, Chapters & Guilds*. https://blog.crisp.se/wp-content/uploads/2012/11/SpotifyScaling.pdf

Kurtessis, J. N., Eisenberger, R., Ford, M. T., Buffardi, L. C., Stewart, K. A., & Adis, C. S. (2017). Perceived organizational support: A meta-analytic evaluation of organizational support theory. *Journal of Management*, *43*(6), 1854–1884. http://doi.org/10.1177/0149206315575554

Larman, C., & Basili, V. R. (2003). Iterative and incremental developments. a brief history. *Computer, 36*(6), 47–56. http://doi.org/10.1109/MC.2003.1204375

Lawler III, E. E. (1992). *The ultimate advantage: Creating the high-involvement organization*. Jossey-Bass.

Lee, E. C. (2008, August 04–08). Forming to performing: Transitioning large-scale project into agile. In Agile 2008 Conference (pp. 106–111). IEEE. http://doi.org/10.1109/Agile.2008.75

Lee, G., DeLone, W., & Espinosa, J. A. (2006). Ambidextrous coping strategies in globally distributed software development projects. *Communications of the ACM, 49*(10), 35–40. http://doi.org/10.1145/1164394.1164417

Lemon, K. N., & Verhoef, P. C. (2016). Understanding customer experience throughout the customer journey. *Journal of Marketing*, *80*(6), 69–96. https://doi.org/10.1509/jm.15.0420

Lenberg, P., & Feldt, R. (2018, May 27). Psychological safety and norm clarity in software engineering teams. In *Proceedings of the 11th international workshop on cooperative and human aspects of software engineering* (pp. 79–86). https://doi.org/10.1145/3195836.3195847

Leung, L. (2015). Validity, reliability, and generalizability in qualitative research. *Journal of family medicine and primary care*, *4*(3), 324–327. https://doi.org/10.4103/2249-4863.161306

Levinthal, D. A., & March, J. G. (1993). The myopia of learning. *Strategic management journal*, *14*(2), 95–112. https://doi.org/10.1002/smj.4250141009

Levy, S. R., Chiu, C. Y., & Hong, Y. Y. (2006). Lay theories and intergroup relations. *Group Processes & Intergroup Relations*, *9*(1), 5–24. https://doi.org/10.1177/1368430206059855

Lewis, J., Ritchie, J., Ormston, R., & Morrell, G. (2003). Generalising from qualitative research. *Qualitative research practice: A guide for social science students and researches. SAGE Publications.*

Lincoln, Y. S., & Guba, E. G. (1985). *Naturalistic inquiry.* Sage.

Lindvall, M., Basili, V., Boehm, B., Costa, P., Dangle, K., Shull, F., ... & Zelkowitz, M. (2002, August 04–07). Empirical findings in agile methods. In *Co ference on extreme programming and agile methods* (pp. 197–207). Springer, Berlin, Heidelberg. https://doi.org/10.1007/3-540-45672-4_19

Lindvall, M., Muthig, D., Dagnino, A., Wallin, C., Stupperich, M., Kiefer, D., May J., & Kähkönen, T. (2004). Agile software development in large organizations. *Computer*, *37*(12), 26–34. https://doi.org/10.1109/MC.2004.231

Luff, P., Heath, C., & Greatbatch, D. (1992, December 01). Tasks-in-interaction: paper and screen based documentation in collaborative activity. In *Proceedings of the 1992 ACM conference on Computer-supported cooperative work* (pp. 163–170). https://doi.org/10.1145/143457.143475

Malik, M., Sarwar, S., & Orr, S. (2021). Agile practices and performance: Examining the role of psychological empowerment. *International Journal of Project Management*, *39*(1), 10–20. https://doi.org/10.1016/j.ijproman.2020.09.002

Malone, T. W. (1997). Is empowerment just a fad? Control, decision making, and IT. *MIT Sloan Management Review*, *38*(2), 23. https://doi.org/10.1023/A:1009663512936

Manos, A. (2007). The benefits of Kaizen and Kaizen events. *Quality progress*, *40*(2), 47–48.

Maples, C. (2009, August 24–28). Enterprise agile transformation: the two-year wall. In *2009 Agile Conference* (pp. 90–95). IEEE. https://doi.org/10.1109/AGILE.2009.62

March, J. G., 1991. Exploration and Exploitation in Organizational Learning. *Organization Science, 2*(1), 71–87. https://doi.org/10.1287/orsc.2.1.71

Marchenko, A., & Abrahamsson, P. (2008, August 04–08). Scrum in a multi-project environment: An ethnographically-inspired case study on the adoption challenges. In *Agile 2008 Conference* (pp. 15–26). IEEE. https://doi.org/10.1109/Agile.2008.77

Maximini, D. (2018). *Scrum Culture.* Springer International Publishing AG, part of Springer Nature. https://doi.org/10.1007/978-3-319-11827-7

McHugh, O., Conboy, K., & Lang, M. (2011). Agile practices: The impact on trust in software project teams. *IEEE Software, 29*(3), 71–76. https://doi.org/10.1109/MS.2011.118

McMackin, J., & Heffernan, M. (2021). Agile for HR: fine in practice, but will it work in theory? *Human Resource Management Review*, *31*(4). https://doi.org/10.1016/j.hrmr.2020.100791

Medinilla, Á. (2012). Lean and agile in a Nutshell. In *Agile Management* (pp. 19–52). Springer, Berlin, Heidelberg.

Melnik, G., & Maurer, F. (2006, June 17–22). Comparative analysis of job satisfaction in agile and non-agile software development teams. In *International conference on extreme programming and agile processes in software engineering* (pp. 32–42). Springer, Berlin, Heidelberg. https://doi.org/10.1007/11774129_4

Memmel, T., Gundelsweiler, F., & Reiterer, H. (2007). Agile human-centered software engineering. In *BCS-HCI'07: 21st British HCI Group Annual Conference on People and Computers* (pp. 167–175). https://doi.org/10.1145/1531294.1531317

Menon, S. T. (1995). *Employee empowerment: Definition, measurement, and construct validation*. Faculty of Management, McGill University.

Meyer, B. (2014). *Agile! The Ugly, the Hype and the Good: an assessment of the agile approach*. Springer, Cham.

Mikalsen, M., Næsje, M., Reime, E. A., & Solem, A. (2019, May 21–25). Agile Autonomous Teams in Complex Organizations. In *XP Workshops* (pp. 55–63). https://doi.org/10.1007/978-3-030-30126-2_7

Mintzberg, H. (1979). *The structuring of organizations*. Pearson.

Mintzberg, H., Ahlstrand, B., & Lampel, J. B. (1998). *Strategy safari: A guided tour through the wilds of strategic management*. Free Press.

Mishra, D., Mishra, A., & Ostrovska, S. (2012). Impact of physical ambiance on communication, collaboration, and coordination in agile software development: An empirical evaluation. *Information and Software Technology*, *54*(10), 1067–1078. https://doi.org/10.1016/j.infsof.2012.04.002

Moe, N. B., Dingsyr, T., & Kvangardsnes, O. (2009, January 05–08). Understanding shared leadership in agile development: A case study. In *2009 42nd Hawaii international conference on system sciences* (pp. 1–10). IEEE. https://doi.org/10.1109/HICSS.2009.480

Moran, A. (2016). *Managing Agile*. Springer International PU.

Morgan, J. M., & Liker, J. K. (2006). The Toyota product development system: integrating people, process, and technology. Productivity press.

Nembhard, I. M., & Edmondson, A. C. (2006). Making it safe: The effects of leader inclusiveness and professional status on psychological safety and improvement efforts in health care teams. *Journal of Organizational Behavior: The International Journal of Industrial, Occupational and Organizational Psychology and Behavior*, *27*(7), 941–966. https://doi.org/10.1002/job.413

Nerur, S., & Balijepally, V. (2007). Theoretical reflections on agile development methodologies. *Communications of the ACM*, *50*(3), 79–83. https://doi.org/10.1145/1226736.1226739

Niven, P. R., & Lamorte, B. (2016). *Objectives and key results: Driving focus, alignment, and engagement with OKRs*. John Wiley & Sons.

North, D. (1990). *Institutions, Institutional Change and Economic Performance* (Political Economy of Institutions and Decisions). Cambridge: Cambridge University Press. https://doi.org/10.1017/CBO9780511808678

O'Connor, C. P. (2010, October 17–21). Letters from the edge of an agile transition. In *Proceedings of the ACM international conference companion on Object-oriented programming systems languages and applications companion* (pp. 79–84). https://doi.org/10.1145/1869542.1869557

Oliva, F. L., Couto, M. H. G., Santos, R. F., & Bresciani, S. (2018). The integration between knowledge management and dynamic capabilities in agile organizations. *Management Decision, 57*(5). https://doi.org/10.1108/MD-06-2018-0670

O’Reilly III, C. A., & Tushman, M. L. (2008). Ambidexterity as a dynamic capability: Resolving the innovator's dilemma. *Research in organizational behavior*, *28*, 185–206. https://doi.org/10.1016/j.riob.2008.06.002

O'Reilly III, C. A., & Tushman, M. L. (2013). Organizational ambidexterity: Past, present, and future. *Academy of Management Perspectives*, *27*(4), 324–338. https://doi.org/10.5465/amp.2013.0025

Oviatt, S. (2006, October 23–27). Human-centered design meets cognitive load theory: designing interfaces that help people think. In *Proceedings of the 14th ACM international conference on Multimedia* (pp. 871–880). https://doi.org/10.1145/1180639.1180831

Paasivaara, M., Durasiewicz, S., & Lassenius, C. (2008, August 17–20). Distributed agile development: Using scrum in a large project. In *2008 IEEE International Conference on Global Software Engineering* (pp. 87–95). IEEE. https://doi.org/10.1109/ICGSE.2008.38

Paasivaara, M., Behm, B., Lassenius, C., & Hallikainen, M. (2018). Large-scale agile transformation at Ericsson: a case study. *Empirical Software Engineering*, *23*(5), 2550–2596. https://doi.org/10.1007/s10664-017-9555-8

Patton, M. Q. (2015). *Qualitative research and evaluation methods (4th ed.)*. Sage publications.

Payne, A. F., Storbacka, K., & Frow, P. (2008). Managing the co-creation of value. *Journal of the academy of marketing science*, *36*(1), 83–96. https://doi.org/10.1007/s11747-007-0070-0

Pentland, A. S. (2012). The new science of building great teams. *Harvard business review, 90(*4), 60–69.

Pereira, J. C., & de FSM Russo, R. (2018). Design thinking integrated in agile software development: A systematic literature review. *Procedia computer science, 138*, 775–782. https://doi.org/10.1016/j.procs.2018.10.101

Piccoli, G., & Ives, B. (2005). IT-dependent strategic initiatives and sustained competitive advantage: a review and synthesis of the literature. *MIS Quarterly*, 747–776. https://doi.org/10.2307/25148708

Pikkarainen, M., Salo, O., Kuusela R., & Abrahamsson, P. (2012). Strengths and barriers behind the successful agile deployment-insights from the three software-intensive companies in Finland. *Empirical Software Engineering, 17*(6), 675–702. https://doi.org/10.1007/s10664-011-9185-5

Pine, B. J., Pine, J., & Gilmore, J. H. (1999). *The experience economy: work is theatre & every business a stage*. Harvard Business Press.

Pisano, G. P. (2019). The hard truth about innovative. *Harvard Business Review*, *97*(1), 62–71.

Poppendieck, M., & Cusumano, M. A. (2012). Lean software development: A tutorial. *IEEE Software*, *29*(5), 26–32. https://doi.org/10.1109/MS.2012.107

Poppendieck, M., & Poppendieck, T. (2003). *Lean software development: an agile toolkit*. Addison-Wesley.

Power, K. (2010, August 09–13). Stakeholder identification in agile software product development organizations: A model for understanding who and what really counts. In *2010 Agile Conference* (pp. 87–94). IEEE. https://doi.org/10.1109/AGILE.2010.17

Prahalad, C. K., & Ramaswamy, V. (2004a). Co-creation experiences: The next practice in value creation. *Journal of interactive marketing*, *18*(3), 5–14. https://doi.org/10.1002/dir.20015

Prahalad, C. K., & Ramaswamy, V. (2004b). Co-creating unique value with customers. *Strategy & leadership, 32*(3). https://doi.org /10.1108/10878570410699249

Probst, T. M. (2003). Exploring employee outcomes of organizational restructuring: A Solomon four-group study. *Group & Organization Management*, *28*(3), 416–439. https://doi.org /10.1177/1059601102250825

Pruitt, J., & Grudin, J. (2003, June 06). Personas: practice and theory. In *Proceedings of the 2003 conference on Designing for user experiences* (pp. 1–15). https://doi.org/10.1145/997078.997089

PTY, (2021, June 21). Finnish Grocery Trade 2021. *PTY*. https://www.pty.fi/wp-content/uploads/2021/08/Finnish-Grocery-trade-2021.pdf

Raelin, J. (2011). From leadership-as-practice to leaderful practice. *Leadership*, *7*(2), 195–211. https://doi.org/10.1177/1742715010394808

Raffaelli, R., Glynn, M. A., & Tushman, M. (2019). Frame flexibility: The role of cognitive and emotional framing in innovation adoption by incumbent firms. *Strategic Management Journal*, *40*(7), 1013–1039. https://doi.org/10.1002/smj.3011

Rattray, J., & Jones, M. C. (2007). Essential elements of questionnaire design and development. *Journal of clinical nursing*, *16*(2), 234–243. https://doi.org/10.1111/j.1365-2702.2006.01573.x

Ritter, F. E., Baxter, G. D., & Churchill, E. F. (2014). User-centered systems design: a brief history. In Foundations for designing user-centered systems (pp. 33–54). Springer, London. https://doi.org/10.1007/978-1-4471-5134-0_2

Rigby, D. K., Sutherland, J., & Noble, A. (2018). Agile at scale. *Harvard Business Review*, *96*(3), 88–96.

Rodgers, R., Hunter, J. E., & Rogers, D. L. (1993). Influence of top management commitment on management program success. *Journal of Applied Psychology*, *78*(1), 151–155. https://doi.org/10.1037/0021-9010.78.1.151

Rodríguez, P., Mikkonen, K., Kuvaja, P., Oivo, M., & Garbajosa, J. (2013, May 18–19). Building lean thinking in a telecom software development organization: strengths and challenges. In *Proceedings of the 2013 international conference on software and system process* (pp. 98–107). https://doi.org/10.1145/2486046.2486064

Rolfe, G. (2006). Validity, trustworthiness, and rigour: quality and the idea of qualitative research. *Journal of advanced nursing*, *53*(3), 304–310. https://doi.org/10.1111/j.1365-2648.2006.03727.x

Rosenthal, R., & Jacobson, L. (1966). Teachers' expectancies: Determinants of pupils' IQ gains. *Psychological reports*, *19*(1), 115–118. https://doi.org/10.2466/pr0.1966.19.1.115

Rousseau, D. M. (1990). Normative beliefs in fund-raising organizations: Linking culture to organizational performance and individual responses. *Group & Organization Studies*, *15*(4), 448–460. https://doi.org/10.1177/105960119001500408

Sahota, M. (2012). *An agile Adoption and Transformation Survival Guide*.

Schein, E. H. 1985. *Organizational culture and leadership*. Jossey-Bass.

Schein, E. H., & Schein, P. A. (2016). *Organizational culture and leadership*. John Wiley Sons Inc.

Schraeder, M., Tears, R. S., & Jordan, M. H. (2005). Organizational culture in public sector organizations: Promoting change through training and leading by example. *Leadership & Organization Development Journal*, 26(6), 492–502. https://doi.org/10.1108/01437730510617681

Schwaber, K. (2004). *Agile project management with Scrum*. Microsoft press.

Schwaber, K., & Sutherland, J. (2020, November). The 2020 Scrum Guide. *Scrum Guides*. https://scrumguides.org/docs/scrumguide/v2020/2020-Scrum-Guide-US.pdf

Scott, W. R. (2013). *Institutions and organizations: Ideas, interests, and identities*. Sage publications.

Segelström, F., & Holmlid, S. (2011). Service design visualisations meet service theory: strengths, weaknesses, and perspectives. *Proceedings of Art & Science of Service, San Jose, California*.

Sekitoleko, N., Evbota, F., Knauss, E., Sandberg, A., Chaudron, M., & Olsson, H. H. (2014, May 26–30). Technical dependency challenges in large-scale agile software development. In *International conference on agile software development* (pp. 46–61). Springer, Cham. https://doi.org/10.1007/978-3-319-06862-6_4

S Group (2021a). S Group’s key figures. https://s-ryhma.fi/en/finance-and-administration/key-figures

S Group (2021b, March 22). SOK-Corporation Financial Satetements 1 Jan - 31 Dec 2020. https://assets.ctfassets.net/8122zj5k3sy9/2hN1ghYihDVpJ8qxVX2qay/26e8e237b0625da01e0a37fbbf1c5fb9/sok_tilinpaatos_2020_en.pdf

Sharp, H. (2007, September). The role of physical artefacts in agile software development team collaboration. In *Second International Workshop on Physicality*, 61–64. https://doi.org/10.1016/j.intcom.2008.10.006

Sharp, H., Robinson, H., & Petre, M. (2009). The role of physical artefacts in agile software development: Two complementary perspectives. *Interacting with Computers*, *21*(1-2), 108–116. https://doi.org/10.1016/j.intcom.2008.10.006

Sharp, H., Giuffrida, R., & Melnik, G. (2012, May 21–25). Information flow within a dispersed agile team: a distributed cognition perspective. In *International Conference on agile Software Development* (pp. 62–76). Springer, Berlin, Heidelberg. https://doi.org/10.1007/978-3-642-30350-0_5

Siakas, K. V., & Siakas, E. (2007). The agile professional culture: A source of agile quality. *Software Process: Improvement and Practice*, *12*(6), 597–610. https://doi.org/10.1002/spip.344

Siano, A., Vollero, A., Conte, F., & Amabile, S. (2017). “More than words”: Expanding the taxonomy of greenwashing after the Volkswagen scandal. *Journal of Business Research*, *71*, 27–37. https://doi.org/10.1016/j.jbusres.2016.11.002

Spradley, J. P. (1980). Participant observation. New York: Holt, Rinehart, and Winston.

Spreitzer, G., & Doneson, D. (2005). Musings on the Past and Future of Employee Empowerment. Forthcoming in T. Cummings, Handbook of Organizational Development (pp. 311-324). Thousand Oaks, CA: Sage.

Sonenshein, S. (2010). We're changing—Or are we? Untangling the role of progressive, regressive, and stability narratives during strategic change implementation. *Academy of Management Journal*, *53*(3), 477–512. https://doi.org/10.5465/amj.2010.51467638

Sommerville, I. (2016). *Software Engineering*. Pearson Australia Pty Limited.

Spear, S., & Bowen, H. K. (1999). Decoding the DNA of the Toyota production system. *Harvard business review, 77(5)*, 96–106.

Steen, M. (2012). Human-centered design as a fragile encounter. Design Issues, 28(1), 72–80. https://doi.org/10.1162/DESI_a_00125

Sudman, S., & Bradburn, N. M. (1982). *Asking questions: A practical guide to questionnaire design*. Jossey-Bass.

Surowiecki, J. (2004). *The wisdom of crowds: Why the many are smarter than the few and how collective wisdom shapes business, economies, societies, and nations*. Doubleday & Co.

Takeuchi, H., & Nonaka, I. (1986). The new product development game. *Harvard business review*, *64*(1), 137–146.

Taylor, F. W. (1911). *The principles of scientific management*. New York: Harper & Brothers.

Taylor-Powell, E., & Steele, S. (1996). Collecting evaluation data: Direct observation. *Program Development and Evaluation. Wiscounsin: University of Wisconsin-Extension*, 1–7.

Teece, D. J. (2007). Explicating dynamic capabilities: the nature and microfoundations of (sustainable) enterprise performance. *Strategic management journal*, *28*(13), 1319–1350. https://doi.org/10.1002/smj.640

Tessem, B., & Maurer, F. (2007, June 18–22). Job satisfaction and motivation in a large agile team. In *International Conference on Extreme Programming and agile Processes in Software Engineering* (pp. 54–61). Springer, Berlin, Heidelberg. https://doi.org/10.1007/978-3-540-73101-6_8

Tessem, B. (2014). Individual empowerment of agile and non-agile software developers in small teams. *Information and software technology*, *56*(8), 873–889. https://doi.org/10.1016/j.infsof.2014.02.005

Thomas, K. W., & Velthouse, B. A. (1990). Cognitive elements of empowerment: An “interpretive” model of intrinsic task motivation. *Academy of management review*, *15*(4), 666–681. https://doi.org/10.2307/258687

Thorgren, S., & Caiman, E. (2019). The role of psychological safety in implementing agile methods across cultures. *Research-Technology Management, 62*(2), 31–39. https://doi.org/10.1080/08956308.2019.1563436

Tolfo, C., Wazlawick, R. S., Ferreira, M. G. G., & Forcellini, F. A. (2009). Agile methods and organizational culture: Reflections about cultural levels. *Journal of Software Maintenance and Evolution: Research and Practice, 23*(6), 423–441. https://doi.org/10.1002/smr.483

Uotila, J., Maula, M., Keil., T. & Zahra, A. S., (2009). Exploration, Exploitation, and Financial Performance: Analysis of S&P 500 Corporations. *Strategic Management Journal, 30(*2), 221–231. https://doi.org/10.1002/smj.738

Valentine, M. A., & Edmondson, A. C. (2015). Team scaffolds: How mesolevel structures enable role-based coordination in temporary groups. *Organization Science*, *26*(2), 405–422. https://doi.org/10.1287/orsc.2014.0947

Valve. (2012, March). Handbook for New Employees. https://steamcdn-a.akamaihd.net/apps/valve/Valve_NewEmployeeHandbook.pdf

Van Dierendonck, D. (2011). Servant leadership: A review and synthesis. *Journal of Management*, *37*(4), 1228–1261. https://doi.org/10.1177/0149206310380462

Van Maanen, J. E., & Schein, E. H. (1977). Toward a theory of organizational socialization.

Van Maanen, J., & Barley, S. R. (1982). Occupational communities: Culture and control in organizations. *Research in Organizational Behavior, 6*, 287–365.

Van de Ven, A. H., & Poole, M. S. (1995). Explaining development and change in organizations. *Academy of management review*, *20*(3), 510-540. https://doi.org/10.2307/258786

Vargo, S. L., & Lusch, R. F. (2004). The four service marketing myths: remnants of a goods-based, manufacturing model. *Journal of service research*, *6*(4), 324–335. https://doi.org/10.1177/1094670503262946

Verhoef, P. C., Lemon, K. N., Parasuraman, A., Roggeveen, A., Tsiros, M., & Schlesinger, L. A. (2009). Customer experience creation: Determinants, dynamics, and management strategies. *Journal of retailing*, *85*(1), 31–41. https://doi.org/10.1016/j.jretai.2008.11.001

Vinekar, V., Slinkman, C. W., & Nerur, S. (2006). Can agile and traditional systems development approaches coexist? An ambidextrous view. *Information systems management, 23*(3), 31–42. https://doi.org/10.1201/1078.10580530/46108.23.3.20060601/93705.4

Vuori, T., & Huy, Q. (2015). Distributed attention and shared emotions in the innovation process: How Nokia lost the smartphone battle. *Administrative Science Quarterly*, *61*(1), 9–51. https://doi.org/10.13140/RG.2.1.1123.3764

Wageman, R. (2001). How leaders foster self-managing team effectiveness: Design choices versus hands-on coaching. *Organization Science, 12*(5), 559–577. https://doi.org/10.1287/orsc.12.5.559.10094

Warren-Findley, J. (2001, January 01). The Collier as Commemoration: The Project Mercury Astronauts and the Collier Trophy. https://history.nasa.gov/SP-4219/Chapter7.html

Warrick, D. (2017). What leaders need to know about organizational culture. *Business Horizons*, *60*(3), 395–404. https://doi.org/10.1016/j.bushor.2017.01.011

Weinberg, G. M. (1992). *Quality software management systems thinking*. Dorset House Publishing Co., Inc.

West, M. A. (2000). Reflexivity, revolution, and innovation in work teams. In *Product development teams* (pp. 1–29). Jai Press.

Whittaker, S., & Schwarz, H. (1999). Meetings of the board: The impact of scheduling medium on long term group coordination in software development. *Computer Supported Cooperative Work (CSCW)*, *8*(3), 175–205. https://doi.org/10.1023/A:1008603001894

Wilkins, A. L. (1984). The creation of company cultures: The role of stories and human resource systems. *Human Resource Management*, *23*(1), 41–60. https://doi.org/10.1002/hrm.3930230105

Yin, R. K. (1981). The case study crisis: Some answers. *Administrative science quarterly, 26*(1), 58–65. https://doi.org/10.2307/2392599

Yin, R. K. (2018). *Case study research and applications*. Sage.

A. Semi-structured interview questionnaire base, Finnish

1. Mitä ketterä (organisaatio) merkitsee sinulle?
2. Jos verrataan vuoden alkuun, kuinka sanoisit, että teidän toimintanne on muuttunut vuoden alusta
   a. Mitkä ovat isoimmat muutokset?
3. Kuinka kuvailisit SOK:n (HR:n) organisaatiokulttuuria tällä hetkellä?
   a. Onko kulttuuri muuttunut?
4. Kuinka kuvailisit johtamiskulttuuria?
5. Kuinka kuvailisit:
   a. Tiimien sisäistä kommunikaatioita?
   b. Tiimien välistä kommunikaatioita?
   c. Ylemmän johdon kommunikaatioita?
6. Mitkä ovat teidän keskeiset tavoitteenne ketterässä organisaatiomuutoksessa?
7. Kuinka jatkuvaa oppimista on tuettu?
8. Minkälaisia rituaaleja ja seremonioita teillä on käytössänne?
9. Kuinka kuvailisit rekrytointikäytäntöjänne?
10. Millä tavoin ketterien toimintamallien oppimista on tuettu?
    a. Onko saamasi tuki ollut mielestäsi ollut riittävää?
11. Kuinka avoimesti koet voivasi ilmaista mielipiteesi ja antaa palautetta?
12. Millaisia kannustimia/palkitsemismenetelmiä käytätte työntekijöiden toiminnan tukemiseksi?
13. Onko vaihtuvuus vaikuttanut ketterän käyttöönottoon?
14. Kuinka tiimitason OKR:t on saatu integroitua strategiaan?
    a. Onko käytössä alhaalta ylöspäin suuntautuvia OKR:iä
15. Kuinka hyvin koet ymmärtäväsi SOK:n (HR:n) keskeisimmät strategiset tavoitteet ja vision?
16. Kuinka työskentely tapahtuu tiimitasolla?
17. Kuinka organisaatiorakenteita on muutettu?
18. Kuinka asiakaskeskeisyys/suhde on muuttunut ketterien käyttöönoton jälkeen?
    a. Kuinka asiakkaan ääni nostetaan esiin käytännössä?
    b. Kuinka laaja asiakaskanta vaikuttaa asiakaskeskeisyyteen?
19. Onko etätyöskentely vaikuttanut muutoksen läpivientiin?
20. Millä tavoin organisaation läpinäkyvyyttä on pyritty kehittämään?
21. Millaisia mahdollisuuksia vaikuttaa päivittäisiin työtehtäviin ja rooleihin?
22. Kuinka lähestytte uusia ongelmia tiimitasolla?

23. Onko ketterän suhteen tehty yhteistyötä muiden liiketoimintayksiköiden kanssa?
24. Onko ongelmia, joihin johdon on täytynyt puuttua?
    a. Oletko havainnut ongelmia, joihin ei mielestäsi puututa?
25. Onko jotain muuta, jota minun olisi pitänyt kysyä?
26. Onko jotain, jota olisit halunnut kysyä minulta?

B. Semi-structured interview questionnaire base, English (translated)

1. What does an agile (organization) mean to you?
2. Suppose we compare the situation to the start of the year. How would you describe your operations have changed?
    a. What have been the most significant changes?
3. How would you describe SOK’s (HR’s) organizational culture at this point?
    a. Has the culture changed?
4. How would you describe the management culture?
5. How would you describe:
    a. Communication within teams?
    b. Communication across teams?
    c. Top management’s communications?
6. What do you think are the central goals in the agile transformation?
7. How is continuous learning supported?
8. What kind of rituals and ceremonies are you using?
9. How would you describe your recruitment practices?
10. How have agile learning models been supported?
    a. Do you think the support you have received has been sufficient?
11. How openly can you give feedback (regarding the agile transformation) up and down the organizational hierarchy?
12. What kind of motivators/rewards do you use to support employee behaviors?
13. Has organizational turnover affected the adoption of Agile?
14. How have you integrated team-level OKRs into the strategy?
    a. Do you have bottom-up OKRs?
15. How well do you understand SOK’s (HR’s) strategic goals and vision?
16. How is work performed at the team level?
17. How have the organizational structures been changed?
18. How has customer-centricity/customer relations changed after adopting agile?
    a. How is the customer's voice elevated?
    b. How has the high number of customer groups affected customer-centricity?
19. Has remote work affected the organizational transformation?
20. How have you been developing organizational transparency?
21. Do you have opportunities to affect daily tasks?
22. How do you approach new problems at the team level?
23. Have you been collaborating with other business units about the change?

24. Have there been problems in which the (top) management has had to interfere?
    a. Are there problems that the (top) management ignores?
25. Is there something else that I should have asked you?
26. Is there something you would have wanted to ask me?

C. Coding scheme

Level of Analysis	Description	Example	Example Quote
Category	An abstraction of several codes with overarching significance in terms of common patterns or themes.	Managing social complexity	"What I am interested in my own role is that when we look at these long processes that go beyond cross-functional teams and business areas and how we develop those. At the group level, we require that these cross-functional teams do different things in synch. How can we find those types of structures here that support these longer development processes so that they all happen at the right time when we deploy them? So that one team would not have to wait for one thing after the other team so that it is in their OKR so that we can move forward in that greater whole. Here I think we have challenges and things that we need to challenge, and I think on some level, we have noticed this while we have been piloting this [cross-unit collaboration] is that we have very varying practices. One team has two-month OKRs, another three [months], and some might even have four months. Even if they were the same length, there are situations where some started [the iteration cycle] in January and others in February. In some way, we should be able to connect it [management infrastructure] to these OKR cycles, and then we would need to combine these [OKR] planning cycles in-house so that we could do cross-team projects." (Informant 12)
Focused Code	Single or several initial codes data that best represent larger portions of the data.	Structural siloing	"The money is sort of siloed, and when these long processes go beyond these siloes financing those projects. And well, this financing model that we have, when these processes do not support each other, there is a bit of an inclination that it becomes part of SOK's internal politics… Our financing and resource management does not support these long cross-unit processes that go beyond business units, which harms agile development." (Informant 12)
Initial Code	Piece of raw data given a simplified label that best represents that data. Individual line, sentence, or paragraph of raw data.	Siloing communications	"The siloing has caused that we know far too little about what each team is doing." (Informant 6)