Facilitators and Inhibitors in Large-Scale Agile Transformations

– A Case Study in a Software Organization in the Automotive Industry Focusing on Change Management and Cultural Aspects

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Abstract

There are many difficulties in agile transformations, and a majority of the transformation efforts fail. However, companies continue to pursue the agile path, pushed by forces, both in their environments and internally. The purpose of this study is to explore what facilitators and inhibitors are present in an agile transformation. This is to try and understand agile transformations better, and a lens of change management and culture will be utilized to focus on some essential aspects. To succeed in this, two research questions are to be answered: How does culture facilitate or inhibit change in agile transformations in a software organization in the automotive industry? And, how does change management facilitate or inhibit change in agile transformations in a software organization in the automotive industry?

This thesis is a case study on a software organization in the automotive industry, and provides a retrospect on the transformation. The firm originates from the automotive industry, resulting in the industry-related culture to continue affecting the firm today, both internally and externally. To understand the organizational context, the history of the organization, and the culture, the case study try to go in depth by exploring solely a single case.

The thesis results are that multiple facilitators and inhibitors are identified for each of the aspects. However, most facilitators and inhibitors relates to both change management and culture, touching upon the interplay between these aspects. Further, the transformation effort is identified to be dependent on both the organizational culture and the organizational context, implicating that transformations efforts are rather unique.

Keywords— Agile transformation, large-scale agile transformation, organizational culture, organizational context, organizational change, change management, organizational cultural change, facilitators, inhibitors, agile mindset

Acknowledgments

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Chapter 1
Introduction

"... [agile] solves problems completely auto-magically"

— Agile Coach

The following chapter aims to introduce the concept of *agile transformation* by first introducing *agile* and following, present transformation efforts towards agile. Thereafter, common issues in agile transformation initiatives are presented, problematizing the topic. Following, the purpose of the thesis, the proposed research questions, and approach on how to answer the research questions will be presented. Lastly, the disposition of the thesis will be presented.

1.1 Agile and Agile Transformations

Originally, agile was designed for small development teams working on separate projects or products. The last couple of years, there has been a trend of popularizing agile in varying forms. Both as a management change method (Naslund & Kale, 2020) and in organizational, project, and team settings (Sarangee et al., 2022; Aghina et al., 2021). More generally, agile can be seen as "... loosely structured solution development paradigm ..." where focus is on adaptability, being value driven, collaboration, and empowerment of teams (A. Moran, 2015, p. 3). In a report by Digital.ai. (2021) on Software enterprises, it is found that there has been a steady increase of organization adopting agile methods and practices the last 15 years, with 94% of their respondents practicing agile today, and that it spreads throughout the organizations beyond the software departments. There are many drivers for transforming to agile organizations: adaptation to market conditions and needs, managing uncertainties, reduced time for market delivery, increased adaptability, and quick decision-making (Sarangee et al., 2022; Anand et al., 2021). Adaptability, quick decision-making, and operational efficiency is of special importance in a setting of high uncertainty, such as with the coronavirus outbreak, with firms facing situations no manual can assist them in (Andrea et al., 2020). A collaborative team structure can assist in managing these situations, allowing the organization to become more agile and dynamic, enabling for learning to take place in real-time (Andrea et al., 2020; Anand et al., 2021). In a study conducted by McKinsey partners in collaboration with Harvard Business School, it was found that the Covid-19 pandemic was better managed by companies having agile practices as a central part of their operations model (Handscomb et al.,

2020), which further emphasize the benefits of working agile. However, agile has its issues, one being the scaling of agile methodologies (Kalenda et al., 2018).

Agile has its benefits, but how does one become agile? The process of transforming into a more agile organization, project, or team is what is often referred to as an *agile transformation*. It is an essential step for organizations wanting to go agile, or scale up the extent agile is utilized. Still, the agile transformation is not an easy task, according to a survey study of more than 2000 respondents conducted by McKinsey and including a variety of industries and firms, around two thirds fail to find their transformation successful (Aghina et al., 2021), representing a significant majority of the initiatives. There are many factors influencing these transformations, which affects the agile transformation and the chance of success, or risk of failure. There are a few of challenges commonly brought up in the agile transformation-literature: Culture, People, Organization, Management, Communication, and Processes. Where the people challenge is the one frequently brought up as the most important obstacle (Nishijima & Dos Santos, 2013; Pinton & Torres Junior, 2020; Gandomani, Zulzalil, Ghani, Sultan, & Nafchi, 2013; Conboy, Coyle, et al., 2011), possibly depending on the mindset change required. Many of these challenges are not mutually exclusive. The most significant barriers related to these agile adoptions are inconsistencies in processes and practices, cultural clashes, and that the organization is resisting the change as a whole (Digital.ai., 2021), aligning with identified challenges in the literature. Inhibitors may also be related to the strengths of previous ways of working, weaknesses with agile, lack of structure, and process related flaws with agile (Sarangee et al., 2022). Although not directly affecting the agile transformation negatively, critical success factors are factors identified in the literature, which may be of importance for organizations to have in mind when initiating a transformation. In the literature, the most significant reoccurring critical factors tend to be top management support, engaging people, and changing the culture, although complemented by several others (Russo, 2021; Sarangee et al., 2022; Naslund & Kale, 2020).

However, even though there have been studies on challenges and success factors, there is a lack of academic research in this topic. For instance, the included papers in Dikert et al. (2016) were 90 % experience reports. Furthermore, most of these studies only explains what type of success factors and challenges that were involved, while not going in depth how they affected the transformation process (Brynildsen, 2021). It is therefore interesting to explore these factors and challenges more in depth, and understand how they affect the transformation process.

Throughout the variety of factors, inhibitors, facilitators, and challenges, two of themes are central: culture and management. The first one, culture, is both represented by itself, and through many others factors, such as: mindset, people, and resistance to change, making it one of the most important factors, if not the most important one. The second one is management. However, due to its size, we will delimit ourselves to focusing on change management. This is because of change management relationship with culture. Change management can be utilized to change the culture (Schein, 2010), manage resistance to change, and generally facilitate the agile transfor-

mation. However, it is not solely a one-way relationship, culture affects change management in multiple ways. First, how change management is utilized depends on the organizational culture, for instance, if the culture is more command-and-control, there may be less bottom-up initiatives. Second, what approach to change may be dependent on the organizational culture, such as where most resistance to change will appear. Lastly, the culture at management level affects how change efforts, or just initiatives, may inhibit an agile transformation. To manage this relationship, the factors will be explored both by themselves, and together, focusing on their relationship.

Furthermore, change management is of interest to understand the agile transformation as a change effort. In the literature, there have been some attempts at creating models for agile transition and adoption (Sidky et al., 2007; Qumer & Henderson-Sellers, 2008; Gandomani & Nafchi, 2015; Russo, 2021). However, many of them have received critique due to the proposed lack of agility and lack of compatibility with agile approaches (Gandomani, Zulzalil, & Nafchi, 2014). Outside these in the literature, none of which has become well-spread, there has been attempts by established consultancy firms and professionals to develop steps and recommendations for agile transformations (Elk et al., 2021; BCG, 2022; Brosseau et al., 2021). Due to this lack of established models and frameworks in the agile transformation literature, utilizing more general change frameworks, such as Lewin's change model (introduced in Section 2.2.3), can assist in understanding how to successfully change organizations, by observing change on an individual level, and possibly provide opportunities in driving or facilitating change in the agile transformation context.

With culture being strongly connected to the organizational context, such as the organization history and its current industry, and organizational change being heavily context dependent (Hughes, 2011), it puts the organizational context as an important aspect to understand. Vice-versa, culture is of importance in understanding the organizational context, as is the organizational change, in understanding how the context changes over time. The case in this thesis is thereby of interest to understand in depth, especially due to its cultural history originating from the automotive industry, and that they today have to work agile, requiring many aspects of their mindset and practices to change. Furthermore, agile originates from software development, and is commonly seen as a collection of software development methodologies. Thereby, the industry and the organizational characteristic is of importance when exploring the agile transformation.

The literature field of agile originates from the manifesto for agile software development, initially developed in 2001 (Fowler, Highsmith, et al., 2001). Additionally, agile is related to other previous methods, mainly: just in time, six sigma, and lean (Naslund & Kale, 2020). Although agile is not new in itself, the literature field on agile transitions, adoptions, and transformations has seen an increase in number of published articles the last few years (Naslund & Kale, 2020). However, while the number of articles increase, the literature field seems to be lacking case studies with multiple articles asking for, and recommending, further research in the format of case studies (Dikert et al., 2016; Paasivaara et al., 2018). Additionally, challenges and factors

identified in the literature could benefit from being investigated together with larger firms (Kalenda et al., 2018), such as with case studies. With these requests within the literature field and agile transformations heavy dependence on individuals and culture, and thereby organizational context, motivating why a case study is of interests. Furthermore, many success factors and challenges have been identified in the literature thus far (Kalenda et al., 2018; Dikert et al., 2016), where common challenges that are presented can be connected to change management and culture. However, often these challenges are only presented on the surface, thus investigating these in depth can provide more detail in this area. This study aims to contribute to the field of agile transformation, and the study has two main contributions. Firstly, the study aims to provide more case studies and academic research to the literature of agile transformation. Secondly, the study aims to provide more detail on what affects change and how, in an agile transformation, expanding on the literature on success factors and challenges that already exist.

1.2 Purpose and Research Questions

The purpose of this study is to explore what facilitators and inhibitors are present in an agile transformation. To succeed with the purpose of the study and to concretize, the following two research questions are proposed:

1. How does culture facilitate or inhibit change in agile transformations in a software organization in the automotive industry?

2. How does change management facilitate or inhibit change in agile transformations in a software organization in the automotive industry?

1.3 Delimitations

The first delimitation is to focus on a single case study in the automotive industry. This allows the study to go more in-depth in the case, and to provide more insight and perspectives on presented topics.

The second delimitation is to delimit the number of interviews and to focus on different roles and perspectives in the selection of interviewees. We wanted to get a few different perspectives by interviewing at least two persons for each role or with different experiences. In total, we aimed for about ten interviewees. All roles in the organization could not be interviewed, thus we chose to focus on a few roles that we had access to and appeared important. The lack of multiple perspectives on certain roles and individuals that were not interviewed may lead to a narrower view in some areas of the transformation.

The third delimitation is to focus on change management and cultural aspects in the transformation. Naturally, this gives a more limited view on the transformation, but on the other hand it allows us to dive deeper to understand culture and change management. However, we found other areas that also seemed important based on

our data collected, for instance, leadership and knowledge management. Leadership is present in several success factors in the current agile transformation literature, such as change leaders, engaging people, and communication (Dikert et al., 2016; Naslund & Kale, 2020). Respectively, knowledge management is related to the success factor of training and coaching (Dikert et al., 2016). These other areas were not investigated in depth because of this delimitation.

Finally, the last delimitation is to focus on the agile transformation and the changes which has occurred, stepping away from going in depth in agile methodologies in itself. However, providing an understanding of the basics of relevant agile methodologies is relevant to the extent that the major changes made on this level can be understood in the context of the agile transformation.

1.4   Approach

To answer the research questions, a qualitative single case study was conducted at a large automotive company. The case company had initiated a large-scale agile transformation in 2018 in their development organization. However, changes and adaptations are still being made to the organization. Arguably, their agile transformation journey is still ongoing. This case is interesting to study partly because of their context in the automotive industry, where agile is not as common, coming from a more traditional product development context.

The transformation is considered successful in retrospect due to the many benefits identified, such as increased efficiency, less pressure on individuals, better handling of changes in requirements, and people thrive at the workplace while becoming more agile. However, the transformation have also faced many challenges, which could be beneficial when identifying facilitators and inhibitors, as e.g., a case with many positives would not lead to as many inhibitors. The transformation was also initiated quite recent in time, which could be favorable, as the likelihood for interviewees to forget or misremember should be lowered.

This study takes an interpretative stance, where mainly the principles of Klein and Myers (1999) have been applied, as a way to increase quality and validity, and to provide guidance throughout the study. Furthermore, a single case study allows for more in-depth analysis and deeper understanding (Dyer Jr & Wilkins, 1991), which is something we aimed for in this study. To analyze our findings in the empirics, we use the theoretical lens of change management and culture. Change management will mainly draw on more general change theory based on Lewin's work (Lewin, 1947), but will also be complemented by more recent change management models such as the one presented by Kotter et al. (1995) and Schein (2010). Drawing from the work of Schein (Schein, 1991; Schein, 1996; Schein, 2010), we will analyze organizational culture in the case organization.

1.5 Disposition

The remainder of this paper is structured as follows: Chapter 2 presents the frame of reference, and analytical model. This chapter gives background information to the topics agile, large scale agile development, agile transformation and large-scale agile transformation. The frame of reference also serves as the theoretical framework which mainly consists of theory about change, change management and organizational culture. Chapter 3 outlines the research design, research process, personal experiences, as well as research quality, validity, and ethics. Chapter 4 presents the empirical findings. First, the context to the transformation and the case company are introduced. Thereafter, the actual transformation is described more in detail and different events are presented. In Chapter 5 we analyze and discuss the findings in the empirics with a theoretical lens of culture and change management. Lastly, in Chapter 6, we present our conclusions and issues remaining for future research.

Chapter 2
Frame of Reference

The purpose of this chapter is to present current literature to build upon the purpose and to assist in providing answers to the research questions. Initially, agile, agile methodologies, and the large-scale agile framework LeSS will be presented to build a foundation of understanding for large-scale agile transformations. Thereafter, agile transformations and large-scale transformations will be defined, and common challenges and success factors will be introduced which will be utilized in the theoretical lens when analyzing. Following, change management literature and methods will be introduced, providing a management perspective on organizational change, and in turn large-scale agile transformations, adding to the theoretical lens. Subsequently, cultural aspects during change are introduced, followed by a model of how to manage culture in the process of change, providing a theoretical lens that will be utilized in analyzing the empirics. Lastly, the frame of reference will be summarized into an analytical model, describing: how we will structure the agile transformation, the theoretical lens, and how it relates to the research questions.

2.1 Agile

This section aims to both provide a basic understanding of agile and, to the case, relevant methodologies and frameworks. As well as adding concepts to our theoretical lens, utilized to identify facilitators and inhibitors. This will be done by first presenting the agile methodology to understand the basics of what agile is, to in turn enabling an understanding of an agile transformation. Within this, the Scrum framework is presented, since it is the methodology in focus in the case organization and will thereby assist in understanding how teams are working. Furthermore, the LeSS framework is presented to assist in understanding how the case company is structured, and how work is conducted between teams and requirement areas. Adoption principles in LeSS are also presented, and will be utilized in the theoretical lens in identifying facilitators and inhibitors. To understand large-scale agile development, and common issues with it, and its scaling, the section of large scale agile development is introduced. Lastly, agile transformation will be introduced, where different views will build a foundation for the concept. Within this, success factors and challenges with agile transformation will be presented, adding to the theoretical lens.

2.1.1 Agile Methodology and Mindset

Agile methodology was introduced as a reaction to more traditional ways of developing software (Cohen et al., 2004). Traditionally, methods for developing software were based on up-front planning, and more strict approach when it comes to change (Dikert et al., 2016). Cohen et al. (2004) explains that these traditional methods usually began by identifying a "complete" set of requirements, and then followed by architecture, high-level design, development and lastly inspection. The problem with this approach, as highlighted by Highsmith and Cockburn (2001), is that requirements and plans generally change during the project's life span, making it hard to plan in advance. Another problem was that the pace of change in the business environment was increasing, making traditional methods less useful (Cohen et al., 2004; Highsmith & Cockburn, 2001).

As mentioned, plan-driven approaches have many challenges, but agile also has its own set of challenges. Dingsøyr et al. (2014) claim that some common criticism to agile is that there is a lack of architectural decisions and that methods usually are suitable for smaller teams (Dingsøyr et al., 2014). One potential contributor to the architectural issues, is that agile relies more on tacit knowledge in the team than in more plan driven approaches, where knowledge may exist in plans (Boehm, 2002). One issue with tacit knowledge is that architectural mistakes could more easily be made in agile development methods, as it relies more on the developer's own knowledge rather than documentation or plans (Boehm, 2002). This shows also in refactoring, which is a way to remake and improve code that is lacking. According to Boehm (2002) with larger systems and more developers, refactoring efforts increase, partly because of less experienced developers working on the product. Boehm (2002) also explains that from their analysis, a majority of refactoring comes from architectural mistakes. Waterman et al. (2015) views architectural design and agility as a trade-off which does not have a clear solution. Increasing the agility may reduce the architectural design, while increasing the architecture may reduce the agility, as more upfront planning may be needed. The other problem, that agile is suitable for smaller teams, is related to scaling agile practices. This issue will be elaborated more in Section 2.1.5, which discusses large scale agile development.

Agile methodology is based on the Agile Manifesto, which consists of 12 principles and four statements. The Agile Manifest was created in the early 2001 when 17 agile proponents formulated it together (Cohen et al., 2004). The Agile Manifesto contains the following four statements that represent the values of agile:

> "We are uncovering better ways of developing software by doing it and helping others do it. Through this work we have come to value:
>
> - Individuals and interaction over process and tools
> - Working software over comprehensive documentation
> - Customer collaboration over contract negotiation
> - Responding to change over following a plan"

(Fowler, Highsmith, et al., 2001)

These values can be seen as a form of guidance and priority when it comes to processes for developing software. In Table 2.1 there is value to items on the right, but the Agile Manifesto values the items on the left more (Fowler, Highsmith, et al., 2001). It is important to note, that only because the right items are considered less important, does not mean it should not be done. The 12 principles are illustrated in Table 2.1.

Table 2.1: Twelve agile principles (Fowler, Highsmith, et al., 2001)

1. Our highest priority is to satisfy the customer through early and continuous delivery of valuable software.	7. Working software is the primary measure of progress.
2. Welcome changing requirements, even late in the development. Agile processes harness change for the customer's competitive advantage	8. Agile processes promote sustainable development. The sponsors, developers, and users should be able to maintain a constant pace indefinitely.
3. Deliver working software frequently, from a couple of weeks to a couple of months, with a preference to the shorter timescale.	9. Continuous attention to technical excellence and good design enhances agility.
4. Business people and developers must work together daily throughout the project.	10. Simplicity–the art of maximizing the amount of work not done–is essential.
5. Build projects around motivated individuals. Give them the environment and support they need, and trust them to get the job done.	11. The best architectures, requirements, and designs emerge from self-organizing teams.
6. The most efficient and effective method of conveying information to and within a development team is face-to-face conversation.	12. At regular intervals, the team reflects on how to become more effective, then tunes and adjusts its behavior accordingly.

In Agile there are a lot of frameworks such as Scrum, Extreme Programming, and there are a lot of practices such as pair programming, test-driven development. However, Agile Software development can be seen as an umbrella term for frameworks and practices based on the values and principles defined in the Agile Manifesto (Alliance, 2022a). Something worth noting is that being Agile is more than just following practices and frameworks, it is having a mindset based on the values and principles of Agile methodology (Cohen et al., 2004; Alliance, 2022a). That is, being Agile is not about following a certain framework or practices, it is about having a mindset based on the Agile principles and statements. It is more important to adjust different practices to the specific context, rather than following exact practices that exist in a framework. Moreira (2013) explains this difference between "do Agile" and "being

Agile". Where "do Agile" is focused on mechanically applying particular practices in, for example, Scrum, Extreme Programming, and "being Agile" is to learn how to live Agile values to transform to an Agile mindset, which is more important (Moreira, 2013).

2.1.2 Scrum

Scrum is the most popular agile methodology (Sharma & Hasteer, 2016), and in this section, Scrum will be introduced to provide a basic understanding of the framework. Scrum was developed by Ken Schwaber and Jeff Sutherland in 1995 based on the 12 agile principles (see Table 2.1), which Schwaber and Sutherland assisted in developing (Schwaber & Sutherland, 2011; Fowler, Highsmith, et al., 2001). The latest official scrum guide is of 2020, and is presented in Schwaber and Sutherland (2011), and it has been continuously developed since 2010. "Scrum is a lightweight framework that helps people, teams and organizations generate value through adaptive solutions for complex problems." (Schwaber & Sutherland, 2011, p. 3), where a significant part is the mindset of the developers, the team members. Simplified, the Scrum process consists of three steps which are repeated: the Product Owner orders the work of the actual problem into a Product Backlog, the Scrum Team works with a selection of the work, an increment, during a Sprint, and the Scrum Team and Stakeholders review the results and adjust for the next sprint (Schwaber & Sutherland, 2011). To succeed in utilizing Scrum and working well in the Scrum Teams, Schwaber and Sutherland (2011) presents five values of importance: commitment, focus, openness, respect, and courage. Scrum can be divided into three important areas: scrum team, scrum events, and scrum artifacts (Schwaber & Sutherland, 2011), where the values fit into the scrum team context, and how the team and individuals work, act, and behave, thereby laying the foundation of building trust.

Scrum consists of three main areas: the scrum team, events, and scrum artifacts (Schwaber & Sutherland, 2011), which all have several subcomponents:

- **Scrum Team:** Developers, Product owner, Scrum master

- **Events:** Sprint, Sprint planning, Daily Scrum, Sprint review, Sprint retrospective

- **Scrum artifacts:** Product backlog, Sprint backlog, Increment

According to Schwaber and Sutherland (2011), Scrum Teams usually consists of 10 or fewer people, with no subteams or hierarchical structures. Further, the self-organized scrum team is built up by developers, one scrum master, and one product owner focusing on one individual product goal at a time. The developers are the active people in the scrum team, contributing with any aspect to the increment of the sprint. The product owner is one person who is responsible for maximizing the product value from the work done, and has accountability to manage the product backlog. The scrum master of each team is in charge of enforcing the scrum framework and is

therefore responsible for the efficiency of the team. The scrum master may take the role of coaching, teaching, assisting in work, and more of a controller in terms of the framework being followed, serving the team, the product owner, and the organization.

See Figure 2.1 for more details of how different scrum artifacts interact and the process of scrum.
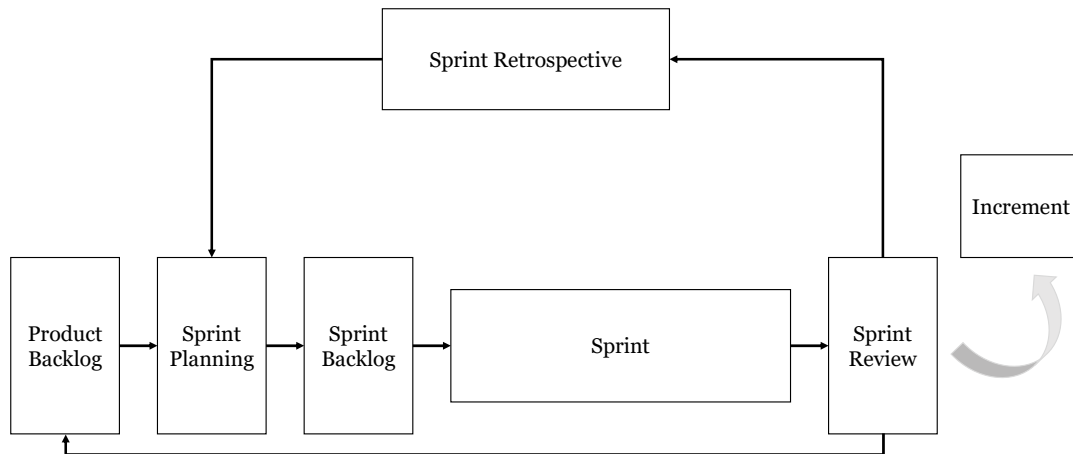
Figure 2.1: The basics of Scrum, altered from Schwaber and Sutherland (2011)

2.1.3   Large-Scale Scrum (LeSS)

Agile methods were originally designed for small projects and teams, but have shown their potential in large scale environments such as larger projects or companies (Dikert et al., 2016). Furthermore, in industry scale software, the agile manifesto and small scale agile methods typically did not fit this environment, and other industry trends required agile to be scaled (Ebert & Paasivaara, 2017). However, scaling agile is a difficult task as projects can be global and numerous teams and people have to collaborate and coordinate (Paasivaara, 2017). To help with the scaling, consultants often propose frameworks such as Large-Scale Scrum (LeSS), the Scaled Agile Framework (SAFe), and Disciplined Agile Delivery (DAD) (Paasivaara, 2017). Different frameworks vary in popularity as well as in characteristics. SAFe is the most popularly used framework according to a survey by Digital.ai. (2021). Comparing the two frameworks, SAFe and LeSS, SAFe has more complexity and costs and more rules and formality, while LeSS is less complex and lower costs and provides more flexibility and mainly suggestions instead of rules (Ebert & Paasivaara, 2017). The difference between these frameworks is that SAFe is a framework that tries to incorporate a lot of best practices, but some criticize it for being too heavy and complex (Ebert & Paasivaara, 2017). On the other hand, LeSS tries to be more minimalistic and focus more on values and fit with the organization (Ebert & Paasivaara, 2017).

The information about LeSS, which will be presented in the following sections, is taken from the official website that is co-created with the authors of the framework (Vodde et al., 2022). As mentioned previously, LeSS is not an improved Scrum, but rather LeSS is Scrum but applied to many teams that collaborate on the same product. Since 2005, Craig Larman and Bas Vodde have worked with clients to scale up Scrum, which led to the development of LeSS. LeSS can be broken down in 4 areas: Experiments, Guides, Frameworks and Principles, these are depicted in Figure 2.2.
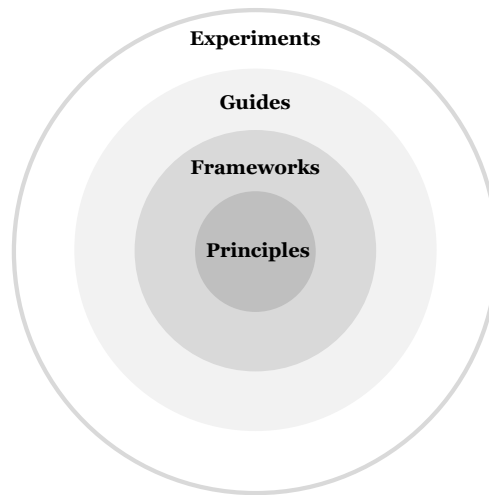
Figure 2.2: Illustration of LeSS broken down in four areas, adapted from Vodde et al. (2022)

Principles

There are ten principles to LeSS that define the framework, but these are only general and do not apply to specific contexts, but serves as core values. The principles emphasize that LeSS is not a new Scrum but rather Scrum applied in a large-scale setting. The other principles cover areas such as customer-centric, focus on the whole product (Not only individual parts), continuous improvement. The principle also emphasize empirical process control, meaning there should be continuous inspection & adaption of product, processes and organizational design based on what works and what does not work.

Frameworks

There are two frameworks for LeSS: Less (2-8 teams) and Less Huge (8+ teams). However, both of these frameworks can be seen as a scaled up version of Scrum. Many practices and ideas from Scrum remain, such as:

- A single Product Backlog

- The same Definition of Done for teams

- A potentially shippable product increment at the end of each sprint

- One product owner

- Cross-functional teams

Guides & Experiments

There are guides and experiments to help implement LeSS, these are described in books (Larman & Vodde, 2008; Larman & Vodde, 2010; Larman & Vodde, 2016) written by the authors of LeSS Craig Larman and Bas Vodde, and some chapters have been published on the website for LeSS (Vodde et al., 2022). However, the guides and experiments are considered optional when adopting LeSS, and therefore will not be elaborated on.

2.1.4 LeSS Adoption

In the LeSS guides (Vodde et al., 2022), three principles are mentioned as especially important when adopting LeSS:

1. Deep and narrow over broad and shallow

2. Top-down and bottom-up

3. Use volunteering

The first principle emphasize the need to focus on "quality over quantity". That is, the priority should be on adopting LeSS well in one area/product rather than applying LeSS poorly in many groups. The reason for this is because it reduces the risk of a product group to fail and also gives a more focused learning. It can also lead to a positive "word on the floor", if the adoption is successful.

The second principle is whether adoption of LeSS should be driven from top-down or bottom-up. The recommendation is not to have a purely bottom-up or top-down approach, but rather doing both. There needs to be both support from the top, e.g., to drive through structural changes. However, there also needs to be bottom-up drive, as it otherwise may lead to a lot of resistance and perhaps failure.

Moreover, the management support should be supporting. Management should be educated about LeSS, and understand this initiative. Also, it is important with clear communication about the intention of adopting LeSS. It is also important to do the required structural changes. Lastly, it is important to provide education and coaching.

The third and final principle is to use volunteering. What this means is that for many decisions and initiatives such as initial teams, team formation, and communities of

practice[1], it should come from voluntary participation within the organization. The reason is that this gives empowerment in for the people in the teams. A crucial part of volunteering is to provide the necessary education for people in the organization, so that they understand what they are volunteering for.

2.1.5 Large Scale Agile Development

The potential for scaling agile is especially interesting for larger projects and larger companies that are increasingly adopting large-scale agile development (Dikert et al., 2016). Scaling agile is also getting more traction in the industry, as there is increasing awareness today of opportunities and challenges when it comes to scaling agile practices (Digital.ai., 2021). But before diving deeper, it is important to sort out a definition of scaling agile and large scale agile development.

Definition of Large Scale Agile Development

So, what exactly does it mean to scale agile? This is a difficult question to answer definitely, because there is no exact agreement in the literature (Kalenda et al., 2018). Some interpretations of scale can be as project costs, code base size, project time, and number of people and teams (Dikert et al., 2016). On the other hand, Dingsøyr et al. (2014) provided a taxonomy of scale for agile development projects based on number of teams, while Dikert et al. (2016, p. 88) defines large-scale in the context of agile as:

> "Software organizations with 50 or more people or at least six teams."
> (Dikert et al., 2016)

In this definition, Dikert et al. (2016) explain that all the people in the software organization do not have to be developers, but they have to belong to the same development organization or project. Dumitriu et al., 2019 categorizes two dimensions of large-scale, individual level, meaning team or project, and organizational level often referred to large or mature organizations. In this perspective, team level often means applying agile methodology close to the development, for instance with agile development teams, while the organization may remain quite similar as before. On the other hand, when applied in the organizational level this may imply larger organizational structural changes or being agile in different areas of the organization that is not only focused on development such as HR and management. Dikert et al. (2016) and Dingsøyr et al. (2014) highlights in their definitions that the number of people is most relevant. Since agile is largely people focused, and many large scale agile frameworks focus on ways for a large number of people to coordinate and collaborate, this seems like an important dimension. Because there are many interpretations, we choose to define large-scale agile development in line with Dikert et al. (2016) as their definition is based around the taxonomy of Dingsøyr et al. (2014) and it is also in line with our interpretation.

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[1]Communities of practice is a way to promote self-organization and to deepen knowledge and expertise in different areas. Communities of practice are often voluntary.

Issues in Large Scale Agile Development

Even though scaling agile is becoming more popular, there are challenges that need to be addressed. Conboy and Carroll (2019) mentions three challenges with scaling agile: communication issues, lack of flexibility and coordination. To address the issues of communication, flexibility and coordination, more and more companies are utilizing large-scale agile frameworks for their implementation of large-scale agile development (Conboy & Carroll, 2019). Another issue mentioned by Reifer et al. (2003) is that scaling agile methods must not sacrifice the underlying principles of the Agile Manifesto. This is difficult for a number of reasons. First, the agile manifesto does not mention anything of scaling agile, and thus gives no guidance in that area. Secondly, traditional agile methods were designed for single teams, and thus did not face the issues of scaling (Kalenda et al., 2018), meaning they are not adapted for larger settings. This issue is partly solved by the use of large scale frameworks, which could act as guidance in large scale agile development. However, there are not only issues in practicing large scale agile development, it also often requires a change or transformation to the organization, which we refer to as an agile transformation.

2.1.6 Agile Transformation and Large-Scale Agile Transformations

There is no clear definition on what exactly is meant with an agile transformation or a large-scale agile transformation. In the conference, *International Conference on Agile Software Development*, which was one of the first Agile conferences in the world that was held focusing on Agile (Alliance, 2022b), they state that agile transformation is an emerging research field and that there are different understandings of what an agile transformation is (Barroca et al., 2019). This corresponds with a lot of literature where a clear definition of the term agile transformation or large-scale agile transformation is often not stated, thus leading to different views and interpretations.

Different Views on Agile Transformation

One way to see agile transformation is focused on the actual development methods, where it can be seen as a transition from a former plan-driven development to agile development methods (Russo, 2021; Gandomani, Zulzalil, Ghani, & Sultan, 2013). Paasivaara et al. (2018) describes this type of transformation in the case of Ericsson, where they went from a plan-driven process to an agile one, and scaled up the number of teams and people involved in the development organization. In the article *Large-scale Agile Frameworks: Challenges and Recommendations* Conboy and Carroll (2019) compares and discusses 13 agile transformation cases, where the transformation was companies implementing large-scale agile development methods, based on different frameworks. However, it is unclear what type of development paradigm was used in the case companies before the scaling of agile, but the transformation, seems to be the selection and implementation of large-scale agile development methods in the organization, often with the help of a framework such as SAFe.

Transformation and scaling up agile practices are closely related, and also sometimes they are the same (Dikert et al., 2016). In a literature review of large-scale agile transformation by (Dikert et al., 2016), success factors and challenges were identified in

large-scale agile transformations. The type of transformation in most case companies included in the study went from a more sequential approach (Such as waterfall) to agile methodology such as Scrum, Extreme Programming (XP) or Lean. The number of people and teams still was considered large-scale according to the definition by (Dikert et al., 2016). All included studies were dated after 2000 and most transformations started between 2000 and 2010. The effect of this may be that for many organizations they may transform from a plan-driven approach to an agile approach, while today when agile is a lot more popular and widely used, many organizations may have some experience with agile but want to scale up their agile ways of working. With these different views, three types of transformations could be identified, these are depicted in Figure 2.3. The types of transformations are denoted with numbers inside black circles.
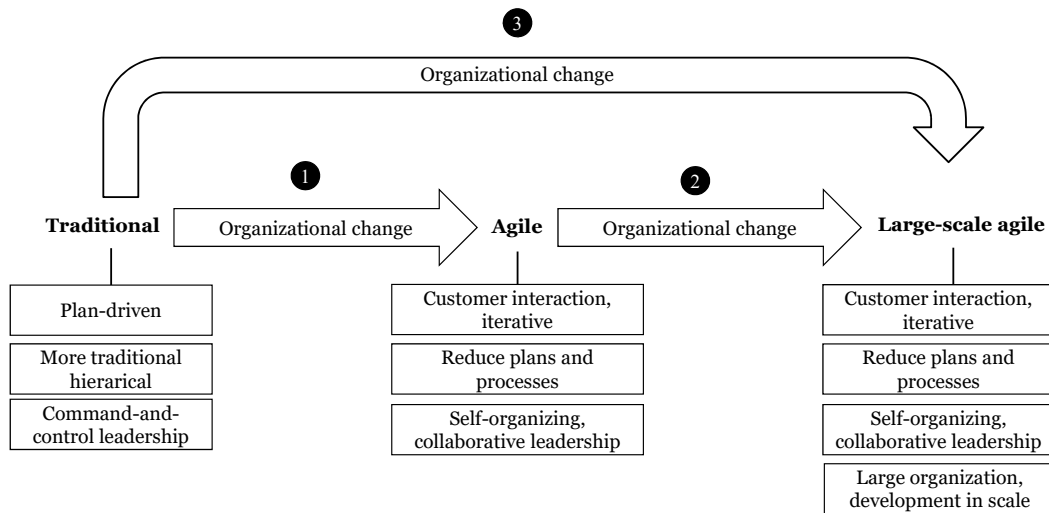
Figure 2.3: Different types of agile transformations based on the initial state of the organization

The way an agile transformation looks may also depend on the organizational type. If a transformation is done in a project differs from a transformation done in a department (Gandomani, Zulzalil, & Nafchi, 2014). However, a project can be seen as a temporary organization and may have its own structure, but often the border between a project and the rest of the organization may be vague (Tonnquist, 2008). As a project can be seen as a temporary organization, and the borders between a project and an organization can be unclear, this thesis will not focus on the difference between these types of organizations.

Another view on agile transformation, often discussed from a more practical point of view, is when agile transformation means the transformation to an agile organization. Agile organizations are according to Brosseau et al. (2021) organizations that give decision rights and information closer to teams and combine velocity and adaptability with stability and efficiency. This perspective is also highlighted by Naslund

and Kale (2020), where they state that two common views are that agile belongs in the IT/IS/software field as a way to manage projects, or as a change method to change the entire organization. The latter perspective, focuses on agile organizations that are characterized by speed and flexibility (Naslund & Kale, 2020). Agile organizations should consider all aspects of business operations and apply agile values such as cyclical processes where customer value is key (Aghina et al., 2021; Werder et al., 2017; Anand et al., 2021). Although agile organizations are an interesting topic, the scope of this thesis focuses on agile transformation limited to the development organization.

Success Factors and Challenges

There are quite extensive literature on success factors and challenges in agile transformation. The main literature that was used was the literature review from Dikert et al. (2016), but complementary articles from Kalenda et al. (2018) and Naslund and Kale (2020) were also compared. This literature will be briefly explained and summarized.

The literature review made by Dikert et al. (2016) identified success factors and challenges for large-scale agile transformations. Another important finding was that 90% of the included papers in the review were experience reports, which indicates that there is lack of academic research. 35 challenges in 9 categories and 29 success factors in 11 categories were identified and classified based on frequency mentioned in the number of cases included in the study (Dikert et al., 2016). This allows the reader to interpret more success factors and challenges that are more frequent and may also be more important to consider in a large-scale agile transformation. Kalenda et al. (2018) provides an action research, based on the literature on success factors and challenges, to further identify practices, challenges and success factors. In the study from Kalenda et al. (2018), the focus is on the frameworks LeSS and SAFe. Lastly, Naslund and Kale (2020) provides a review of success factors in agile transformation.

A summary of challenges presented by Dikert et al. (2016) and Kalenda et al. (2018) are presented in Table 2.2, which also shows the overlapping challenges between the two articles. A similar summary of success factors of Naslund and Kale (2020), Kalenda et al. (2018) and Dikert et al. (2016) are presented in Table 2.3.

Table 2.2: Summary of challenges

Challenge	Examples	Dikert et al. (2016)	Kalenda et al. (2018)
Change resistance	Scepticism to new ways of working, top-down mandate, management unwilling to change, forcing people to change	x	x
Quality assurance issues	Lack of automated testing, requirements ambiguity, lack of interaction between development teams	x	x
Integrating non-development parts of organization	Other functions unwilling to change, reward model not team-centric	x	x
Too fast roll-out	Not utilizing a pilot project, gradual changes		x
Lack of investment	Lack of coaching, training, too high workload, challenges in rearrange physical spaces	x	
Agile difficult to implement	Misunderstand agile, lack of guidance from literature, lack of customization of agile	x	
Coordination challenges	Autonomous teams challenging, achieve technical consistency, coordination between teams	x	
Different approaches in multi-team environment	Different interpretation of agile, using old and new ways of working side by side	x	
Hierarchical management	Unclear role of middle management, waterfall management, old bureaucracy issues	x	
Requirements engineering	Estimating is hard, gap between long term and short-term planning, requirement refinement difficult	x	

Table 2.3: Summary of success factors

Success factor	Examples	Dikert et al. (2016)	Kalenda et al. (2018)	Naslund and Kale (2020)
Management support	Buy-in, help with adoption, actively involved, being visible	x	x	x
Culture and mindset	Focus on agile values, use agile communities, agile mindset	x	x	x
Choosing and customize agile approach	Adapting to organization, being pragmatic, watch out for customizations that contradict the principles	x		x
Engage people	Engaging everyone in the organization, get feedback	x		x
Change leaders	Importance of change leaders, use newly hired or external change leaders	x		x
Communication	Communicate change, new communication tools	x		x
Team autonomy	Allow teams to self-organize, allow grass root empowerment	x		x
Transformation planning	Create vision and strategy for transformation, assess costs, benefits, and risks			x
Align organization structure with agile	Restructure teams, map structure to needs of customer			x
Incentives and measures	Measure transformation to desired outcomes, performance evaluation			x
Tools	Non-human resources, IT systems, new software systems			x
Role definition	Define and communicate new roles			x
Training and coaching	Coach while teams learn by doing, provide training	x		
Requirement management	Understand importance of product owner, learn to refine requirements	x		
Piloting	Test agile in specific organization, gather insights, getting acceptance	x		
Prior agile experience	Knowledge in agile, coaching others		x	

2.2 Change

In this section, we will first explore organizational change literature to understand the fundamentals of how organizations change in general and the emphasis on individuals, to in turn understand agile transformations. It will first be introduced with a short background, aiming towards understanding what the field comes from, as well as Lewin's background. This in turn aims to provide more understanding of the later models, both by Lewin and others building on his model. Thereafter, we will present change management literature, focusing on change management models which will be utilized to both structure the transformation when identifying facilitators and inhibitors, and as a theoretical lens for identifying facilitators and inhibitors. Lastly, we will explore change management in the context of organizational cultural change, further building on the theoretical lens, and connecting change management to culture.

2.2.1 Background

Lewin (1947) initiated the change literature, and inspired a generation of literature incorporating the human and group aspects in the context of organizations and organizational change (Al-Haddad & Kotnour, 2015). Lewin put emphasis on viewing change as a process where groups continuously adapt and change due to external and internal forces, (Lewin, 1947). Change can be both planned and non-planned (T. G. Cummings & Worley, 2014), where change in this thesis will mainly be in terms of planned change where it from our pre-study can be concluded that the case is planned, intended, and to a large extent managed. By no means is this a delimitation, but rather a clarification of the concepts, implying that other types of change will be included as well, and general change literature will be utilized.

Change can be divided into four main areas in the change literature: change types, change enablers, change methods, and change outcomes (Al-Haddad & Kotnour, 2015). In this report, the focus will be on change methods with change management and change management methods being central, although other areas will be touched upon as well.

2.2.2 Definitions of Organizational Change

In the literature, the most common organizational change definition and view is rather individual emphasized (Lewin, 1947; Schein, 1996; Duck, 1993; Morrison, 1994; Schneider et al., 1996; Harung, 1997; T. G. Cummings & Worley, 2014), where a contrasting view is that of Jacobsen et al. (2014), viewing change as something on an organizational-level. These definitions will in the following section be introduced, compared, and elaborated upon.

Lewin (1947) introduced the concept of force field analysis, encompassing what forces affect groups in certain situations. Following, he introduced the concept of quasi-stationary social equilibrium in the case of groups, which is present when forces in the force field are equal in each direction and thereby hindering the current state from changing. The equilibrium will first occur when the driving and restrain-

ing forces are of sufficiently equal size, and change will first take place when forces in one direction are sufficient to remove the equilibrium (Lewin, 1947). Schein (1996, p. 28) claims that the key to understanding Lewin's model, and in utilizing it, is "... to see that human change, whether at the individual or group level, was a profound psychological dynamic process that involved painful unlearning without loss of ego identity and difficult relearning as one cognitively attempted to restructure one's thoughts, perceptions, feelings, and attitudes.". Aligning with our interpretation of Lewin (1947), where focus is not only on external factors, but also on how individuals are affected by both of these, and of other internal factors, in turn leading to assisting in building an understanding of change on a group level. T. G. Cummings and Worley (2014) views change, similar to Lewin (1947), as dependent on both internal and environmental disruptions, corresponding to the internal and external forces presented by Lewin, and how shifts in these may cause change due to their no longer being a quasi-stationary social equilibrium. However, T. G. Cummings and Worley (2014, p. 506) defines change as "Organization transformation implies radical changes in how members perceive, think, and behave at work", where their explicit emphasis on perception, thoughts, and behavior differentiate them from others. Additionally, they categorize change into three types: transformational, continuous, and transorganizational with transformational being the more radical change, affecting the foundations of the people in the organization, such as in agile transformation, requiring a shift in mindset.

We interpret Morrison (1994), Schneider et al. (1996), and Duck (1993) as having an even more significant explicit emphasis on individuals in their view of change. Duck (1993) views change as something strongly personal and that each employee needs to be won over by the change leaders, one by one. "For change to occur in any organization, each individual must think, feel, or do something different" (Duck, 1993, p. 109), further displaying the emphasis on individuals in organizational change. His definition aligns with (T. G. Cummings & Worley, 2014), although with a slight difference of feeling versus perceiving, and his explicit focus on winning over individuals one by one. Additionally, Duck (1993) brings up the perspective of managing each element, not only individually, but in relation to each other as well. This could be how changes in one element may cause, or require, changes in another, displaying the importance of taking their relation into consideration. "For organizations to change, people must change. For leaders to help people change they do not need to understand change, they need to understand people" (Morrison, 1994, p. 353), emphasizing that organizational change requires people to change and that understanding people and their responses is essential. Where the explicit emphasis on understanding individuals differentiate Morrison. "Organizations as we know them are the people in them; if the people do not change, there is no organizational change" (Schneider et al., 1996, p. 7). Schneider et al. (1996) argues that changes in elements, such as hierarchy, technology, and communication, are effective to a certain degree in terms of shifting employees' psychology, but are not enough to create sustained change. Instead, focus should be on people, and changing their psychology, aligning with Duck (1993) and Morrison (1994) thoughts, but differentiating with an explicit focus on creating sustained change.

Harung (1997) breaks down change into three components: "the subject who performs the action, the change process, and the object which is changed" (Harung, 1997, p. 194). However, in line with previous authors, he believes that change is dependent on the individual, since he claims that change is always based in the person, or subject, which performs the action. Therefore, the actor component can be considered the most important, and the component which most focus should be on transforming or changing (Harung, 1997). What separates Harung (1997), is his explicit focus on solely changing behavior, and especially the focus on action and behavior, rather than taking other aspects into consideration as well, such as feelings, perception, and thoughts, delimiting his definition.

In contrast to all previous, more individually-emphasized views and definitions, Jacobsen et al. (2014) views organizational change from a purely organizational perspective. They define change as something that occurs when organizations display different attributes and characteristics at different points in time. Although the definition of Jacobsen et al. (2014) is not inherently in conflict with previous, individual-focused definitions, it offers an alternative perspective and puts emphasis on organizations rather than individuals.

Although the organizational change is in focus, it needs to be broken down into team and individual levels to be understood. On the individual level, it is not solely the behavior, but also in perception and how people think, adding to the importance of understanding individuals and their context in how they react and behave when facing change, whereas culture and mindset is a key factor.

2.2.3 Change Management

Lewin is what many considers not only the founding father of change, but also in building the foundation for change management and change management methods, with his Change As Three Step (CATS) Unfreezing-Moving-Refreezing model. When looking back at Lewin's work, the CATS model appears in 1947; "Changing as Three Steps: Unfreezing, Moving, and Freezing of Group Standards" (Lewin, 1947, p. 34). S. Cummings et al. (2016) dived into Lewin's original work and drew the conclusion that many which refer to Lewin in actuality only refers to others interpretation of his work, with lacking clarity when referring to the CATS model. Especially, it is argued that the last step, refreezing, never is explicitly presented by Lewin, and the hypothesis of it possibility being constructed post hoc of Lewin's death is presented (S. Cummings et al., 2016).

There are both people who support "Lewin's model" and many critics. What many critics refer to is that the model is outdated and not suitable for the ever-changing environment today (Burnes, 2004). However, looking back at Lewin's original work (Lewin, 1947), considering his model as with the perspective of viewing groups as steady or in a frozen state does not align with his work (S. Cummings et al., 2016), nor in line with our interpretation of Lewin's view on change. Instead, what Lewin put emphasis on was a continual process of adaptation when observing groups (Lewin, 1947), contradicting how some literature interpret it, and instead providing a solid

foundation on which new change management models could be developed. The CATS-model, whether developed by Lewin or post his death, will hereafter be referred to as Lewin's model.

Regardless if the model was developed by Lewin or by other scholars, the fact remains that it acts as a foundation for much of the work, and for many of the change management models presented (Al-Haddad & Kotnour, 2015). Following, many models, both based upon Lewin's model and more standalone, has been developed, many with varying perspectives, steps, and focal points. In this section, change management will be defined as viewed in the context of this report. Thereafter, change management methods will be presented and additional relevant theories included.

Definition of Change Management

Al-Haddad and Kotnour (2015) gather change methods into two groups: systematic change methods and change management methods. The former methods tend to share processes such as: assessing the current situation, planning and communicating change, and implementing the change (Al-Haddad & Kotnour, 2015). Additionally, systematic change methods comes with a set of tools and processes to assist the management team in making decisions on how to manage change (Al-Haddad & Kotnour, 2015). In contrast, change management methods are broader, and can be seen as one component in large-scale organizational change initiatives, complemented by strategy, business processes, and technology (Worren et al., 1999), assisting in making change a part of the organizational culture (Al-Haddad & Kotnour, 2015). Overall, change management methods focuses more on the context and its environment, making them more general compared to systematic change methods, which is more targeted towards tools and processes.

Another view on change management is: "Change management is the process of continually renewing the organization's direction, structure, and capabilities to serve the ever-changing needs of the marketplace, customers and employees" (J. W. Moran & Brightman, 2000, p. 73). The emphasis is, however, on people and how they face change, with J. W. Moran and Brightman (2000) claiming that managing change is not on the change itself, but rather about managing people, and the impact of certain change on these people, aligning with individual-focused views of change.

In the book, Cameron and Green (2019), many aspects of change management are presented, both in theory and its relation to practice. To understand change management, the authors divide change into three main categories: individual change, team change, and organizational change. Individual change can be viewed from multiple perspectives, creating a holistic view of change on the individual level (Cameron & Green, 2019), much in line with previous definitions of change, with a focus on the individual and a change in thinking, feeling, and doing something differently, rather than just changing the behavior (Duck, 1993; Morrison, 1994; Schneider et al., 1996). The change on this level is complemented by change in teams, where focus is both on the team as a whole, but also on how individuals affect the team and contributes with both strengths and weaknesses in managing change, overall viewing how teams

adapt to changes internally (e.g. new members) and in their environment (e.g. organizational change) (Cameron & Green, 2019). Organizational change focuses on how organizations work and how change can be managed on the organizational level, more towards Jacobsen et al. (2014) definition of organizational change, with a multitude of models, some of which will be presented in Section 2.2.3 (Cameron & Green, 2019). Aligning with the organizational perspective, stepping away from the individual-emphasized is Galli (2018) the definition of change management, where it can be seen as evolving from one state to another, desired, one (Galli, 2018).

Different change management methods are based on different theories, and provides varying perspectives, making them suitable for different kinds of contexts (Galli, 2018). However, Galli (2018, p. 131) presents his thoughts based on a comparative analysis of five well-known change management methods: "my final thoughts on the topic of change management: people are the changes, not the models, and people will only change if they see and feel the need to do so.", displaying the importance of the human perspective, and what he believes is the most important factor in change.

Change Management Methods

As mentioned previously, Lewin's CATS model lay the foundation for many later models presented in the field of change management. These models utilize his rather general model of Unfreezing, Moving, and Freezing group standards, where the last step often is referred to as refreezing (T. G. Cummings & Worley, 2014; S. Cummings et al., 2016; Galli, 2018).

Kotter et al. (1995) model is based on Lewin's (Galli, 2018; T. G. Cummings & Worley, 2014), he developed the 8-step model based on common critical errors found in an assortment of many firms in different industries and in a variety of situations. Kotter view change as a process which takes time, and no matter if it is successful or not, initiatives are commonly messy and full of surprises (Kotter et al., 1995). In relation to Lewin's model, the steps align in terms of (Galli, 2018): steps 1-4 relating to unfreezing, steps 5-7 representing the change in itself, and step 8 corresponding to refreezing the change. Kotter's 8-step model consists of (Kotter et al., 1995):

1. Establish a sense of urgency

2. Form a powerful enough guiding coalition

3. Create a vision

4. Communicate the vision

5. Empower others to act on the vision

6. Planning for and creating short-term wins

7. Consolidating improvements and producing still more change

8. Institutionalizing new approaches

2.2.4 Organizational Cultural Change

Schein (2010) divides organizational cultural change into two categories: organizational cultural change that occurs naturally, and organizational cultural change that is managed and planned, where the focus will be on the latter to find what has been done to facilitate respectively inhibited the change. Another perspective is of categorizing cultural change into intended cultural change and cultural change in general (Alvesson & Sveningsson, 2015). Whereas, organizational cultural change that are both managed and planned are intended. However, intended organizational cultural change may not always be planned and managed, and could at times be viewed as a resulting change of behavior due to organizational change (e.g. structural or process changes). While the change in itself is intended, it is not always planned nor managed.

Further, Alvesson and Sveningsson (2015) identifies three types of cultural change: preceding, following from, or intertwined with certain "substantive changes". Where an issue that can be considered is if cultural change mainly is in terms of changing values, ideas, and beliefs, or if the focus is more on substantive matters and how they shape the culture as an implication. Here, two main line of thoughts are present: that people's ideas and values need to change to enable other "real" change, while another is that it is a change in behavior that matters, and that culture will change and adapt thereafter (Alvesson & Sveningsson, 2015).The former tend to be most common in the literature, where emphasis is on articulating visions, rituals, training, leaders' focus, control, and reward (Alvesson & Sveningsson, 2015). The former aligning with Schneider et al. (1996) thoughts on change, where changing elements are not enough, e.g. substantive changes, to create sustained change, but also requiring more fundamental underlying changes. Although, Alvesson and Sveningsson (2015) emphasizes that the interplay between these two line of thoughts should be considered in larger cultural change initiatives, the authors' perspective tend to lean more towards the cultural focus; "In order for behavioural change, unless referring to simple and technically easily controlled behaviours (such as mechanical smiling in service work), to be possible, it most be preceded by and accompanied by cultural reorientations" (Alvesson & Sveningsson, 2015, p. 48, 49). However, the importance of substantive changes remains, with the authors emphasizing their importance in communicating effectively.

Managed and Planned Organizational Cultural Change

Alvesson and Sveningsson (2015) brings up several difficulties with changing organizational culture, both in general and in cases where cultural change is intended. It is mentioned that intended cultural change must be supported from multiple directions: managers must have a clear will, and employees must be open to new ideas, values, and meanings, one or the other is not sufficient for radical change. They continue, some shared beliefs of problems, feeling of significance, and possibly a certain level of urgency will assist in facilitating making cultural change, and may in some cases be necessary.

Schein (2010) presents a model on managed cultural change which is based both on the beliefs of Lewin and on his CATS-model, which Schein elaborates on and adds complementary components to. The three main steps remain somewhat similar: unfreezing/disconfirmation, cognitive restructuring, and refreezing, this is complemented by additional aspects encompassing survival anxiety versus learning anxiety and psychological safety (Schein, 2010).

Unfreezing/Disconfirmation builds on Lewin (1947) belief of force fields causing enough disequilibrium to motivate change. However, Schein (2010) breaks down the stage into three processes: creating enough disconfirming data to cause disequilibrium and discomfort with how things are, connecting this data to relevant goals and ideals creating anxiety and/or guilt, and enough psychological safety in being able to see a possibility of solving the problem without too significant drawbacks (Schein, 2010). Disconfirming data are a type of information that display issues for organizations in reaching their goals, and it can be economic, political, social, or personal (Schein, 2010). However, the data does not display what is wrong, thereby causing unconformability and anxiety within the organization. It is of importance to connect the data to relevant goals to avoid rationalizing or denying the negative information, likely due to learning anxiety, displaying how the data in itself does not provide motivation to change (Schein, 2010), and rather that it needs to be utilized. Before starting to try and understand culture, one must have a clear definition of the operational problem, or issue, which initiated the change process, and to formulate new and specific behavioral goals (Schein, 2010).

Following, unlearning is of significant importance in transformative change, which lay the foundation for most resistance to change due to the feeling of loss in terms of personal and group identity (Schein, 2010). This puts emphasis on leaders to developing psychological safety, making people feel safe learning something without losing integrity or identity, facilitating the change significantly (Schein, 2010).

Cognitive restructuring, corresponding to the change step presented by Lewin (1947), is the cognitive redefinition of core concepts part of the "assumption set" which is present in most change processes (Schein, 2010). This includes learning new concepts and learning new meanings for old concepts, which is crucial in changing the way of thinking. Additionally, there are two main mechanisms in which way new concepts are learned: imitation and identification, as well as scanning and trial-and-error learning (Schein, 2010). Imitation and identification are commonly related to following a role model, which could be specific teams or a leader behaving in the new expected way, and is a method most suitable when the new way of working is clear and the concepts to be taught are clear. However, if the change does not fit into the personality of the person learning, the change risks reverting (Schein, 2010). To avoid the issue of fitting change to personality is the second approach of scanning and trial-and-error learning, allowing for employees to develop their own solutions as a means in reaching a certain goal, which management and leaders needs to be clear about (Schein, 2010). Overall, identification and imitation will allow for quicker learning, but is heavily dependent on the leader. In contrast, scanning and trial-and

error learning may take more time, but it allows for real internalization of knowledge if encouraged from the outset (Schein, 2010).

Refreezing refers to the need of producing confirming data, gradually stabilizing and enforcing the new behavior and conditions, otherwise the change process will continue (Schein, 2010).

Present throughout the three stages are two types of anxiety: survival anxiety and learning anxiety, which are key for the unfreezing stage, where the learners' will feel experience the two when they understand the disconfirming data (Schein, 2010). While learning anxiety is related to working and learning something new, and performing worse to a start, survival anxiety is related to a feeling of something bad happening unless you change. Thereby, learning anxiety can be viewed as a force hindering people of changing with resisting the validity of the disconfirming data, and survival anxiety can be viewed as a force pushing for change. Learning anxiety is built up by four different fears: fear of temporary incompetence, fear of punishment for incompetence, fear of loss of personal identity, and fear of loss of group membership (Schein, 2010). Learning anxiety's resistance consists of three different stages (Coghlan (1996) as referred to in Schein (2010)): (1) Denial, (2) Scapegoating, passing the buck, dodging, and (3) Maneuvering, Bargaining, which is of importance when managing resistance to understanding disconfirming data.

As for managing the forces of survival anxiety and learning anxiety Schein (2010, p. 331) presents two principles: (1) Survival anxiety or guilt must be greater than learning anxiety, and (2) learning anxiety must be reduced rather than increasing survival anxiety, which both acts as keys to how to succeed in changing people. The second principle is introduced to manage the risk of people avoiding the threat or pain associated with learning, which may be increased with increased survival anxiety, putting that approach at risk of worsening the situation (Schein, 2010).

To complement the two anxieties, the third component of the first stage (unfreezing), psychological safety, are introduced by Schein (2010), which are strongly related to principle two, and is a cause to why increasing survival anxiety is not enough by itself. The change leader is of great importance in creating psychological safety when trying to make employees change and learn, and Schein (2010, p. 332) introduces eight, almost simultaneous, steps key to creating real, lasting, and significant change and cultural change:

1. A compelling positive vision

2. Formal training

3. Involvement of the learner

4. Informal training of relevant "family" groups and teams

5. Practice fields, coaches, and feedback

6. Positive role models

7. Support groups in which learning problems can be aired and discussed

8. A reward and discipline system and organizational structures that are consistent with the new way of thinking and working

Lastly, three more principles are introduced focusing on how to organize change which in turn may include or cause cultural change (Schein, 2010, p. 334, 335): (3) : The change goal must be defined concretely in terms of the specific problem you are trying to fix, not as "culture change", (4) Old cultural elements can be destroyed by eliminating the people who "carry" those elements, but new cultural elements can only be learned if the new behavior leads to success and satisfaction, and lastly, (5) Culture change is always transformative change that requires a period of unlearning that is psychologically painful.

2.3 Organizational Culture

In this section, the focus will be on organizational culture and presenting the foundation of the literature. This aims to provide a basic understanding of organizational culture to enable an understanding of how culture fit into the agile transformation. Following, a model for analysis and categorization of organizational culture will be presented. In combination with this, insight from a practitioner's perspective is added to the model, assisting in identifying cultural aspects in the case, and in turn how it has facilitated and inhibited the transformation. Whereas, multiple aspects of culture will be presented and their relation to culture clarified. Lastly, a subsection on leadership in the context of culture will be touched upon to present the relation between the two, which in turn will be utilized to understand their relationship in the case.

2.3.1 Defining Organizational Culture

The difference between organizational culture and culture is, as the name suggests, one is in the context of organizations while the other is not (Jacobsen et al., 2014). One important aspect of culture is that it is a property of a human group, and if you cannot define the group, you cannot define the culture (Schein, 1991). There are a lot of different definitions of culture, but one of the most cited definition is from Schein:

"a pattern of shared basic assumptions that was learned by a group as it solved its problems of external adaption and internal integration, that has worked well enough to be considered valid and, therefore, to be taught to new members as the correct way to perceive, think, and feel in relation to those problems." (Schein, 2010, p. 17)

Edgar Schein is not only known for his cultural definition, but also for his work in organizational culture in general and often referred to as the "father" of organizational culture (Schein, 2010). For his work in organizational development, including organizational culture, Schein have won numerous awards, published multiple books

and consulted to major corporations (Schein, 2010). In this study, our definition and theory of organizational culture will mainly draw on the work of Schein.

To explain the cultural definition more in depth, Schein (1991) has divided the definition in 6 parts:

1. "A pattern of shared basic assumptions.

2. invented, discovered, or developed by a given group,

3. as it learns to cope with its problems of external adaptation and internal integration,

4. that has worked well enough to be considered valid, and, therefore,

5. is to be taught to new members of the group as the

6. correct way to perceive, think, and feel in relation to those problems."

(Schein, 1991, p. 247)

The first point of the definition highlights that the importance lies in the shared beliefs in a group, which means that there is a social aspect between people but also shared values and ideas (Jacobsen et al., 2014). The second point in the definition is that culture is built on learning and bases new experiences and changes to how things have been done before in the organization (Jacobsen et al., 2014). The third point, addresses two fundamental issues all groups face, external adaptation and internal integration and concern issues regarding what the learning focus is and how a group has solved different problems and experiences building their own culture (Schein, 1991). The fourth point concerns validation that occurs both externally and internally, where external validation is about achieving tasks successfully, and internally is about reducing anxiety with unpredictability and meaninglessness (Schein, 1991). The fifth point concerns socialization, which in the definition refers to that culture is taught to new members as the right way to perceive, think and feel regarding different problems and situations (Jacobsen et al., 2014). The sixth and final point highlights that the culture is only considered correct as long as it is perceived as correct (Jacobsen et al., 2014). That is, in culture there occurs continuous learning and adaptation, and if something that has worked before stops working numerous times, the culture is likely to be adapted to this new knowledge.

Something reoccurring in this definition is that there is a focus on learning within a group, and that this is what develops the culture, and also what differentiates different cultures from each other. What the group has learned is what shared assumptions it probably will hold, which is particular interesting in the case of an agile transformation where a lot of behavior change and mindset shift may need to occur to apply the agile principles.

2.3.2 How Culture Can Be Analyzed - Three Levels of Culture

Culture is not as tangible as for example organizational structure, which can be formalized in documents. Of course, culture can be written about in the organization, but in the end it is the people that create the culture and their perceptions and ideas. Culture cannot be studied directly, but it can be analyzed at different levels (Jacobsen et al., 2014; Schein, 2010). The three levels of culture is a model by Schein (2010) and is often used to analyze culture from the more tangible to the more intangible, this model is depicted in Figure 2.4.
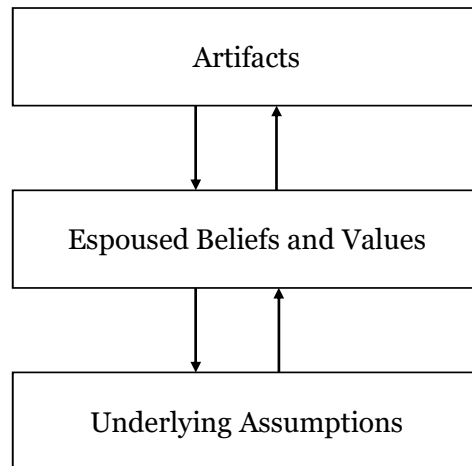
Figure 2.4: Three levels of culture, adapted from Schein (2010)

Artifacts are the surface level and the things that often are observable when you encounter a group with an unfamiliar culture (Schein, 2010). Artifacts can for instance be physical objects, texts, and behavior, and can be connected to the underlying beliefs, values, and assumptions (Jacobsen et al., 2014). artifacts can be categorized in three main groups: what people say, what people do, and physical objects (Jacobsen et al., 2014). What people say can for example be symbolic stories, such as when a manager threw its jacked to help when machines broke down, which could symbolize that everyone needs to collaborate (Jacobsen et al., 2014). What people do can for instance be if managers often are seen on the floor, which could signal that the distance between managers and employees is small (Jacobsen et al., 2014). Lastly, physical objects, which is everything physical that is related to the culture such as the building, logotype, uniforms and more (Jacobsen et al., 2014).

Espoused believes and values is the middle level, which could be described as their sense of what is supposed to be (Schein, 2010). Beliefs and values could be seen as something that is desirable and ideals that people are supposed to follow (Jacobsen et al., 2014). Values in an organization mediates what the organization thinks is good and implicitly what is bad (Jacobsen et al., 2014). Beliefs and values, if they are conscious, they can often predict behavior that you see at the artifact level (Schein, 2010).

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However, it could also be the case that people say that they will act in a certain way, but it may differ what they will actually do in that situation (Schein, 2010).

Underlying assumptions is according to Schein (2010) assumptions that have become so taking for granted there is little variation within the group. These underlying assumptions are the common interpretation within the group, which makes it harder to question or change (Jacobsen et al., 2014).

A. Moran (2015) presents a comparison with agile and the three levels of culture by Schein (2010). In this comparison, artifacts, espoused beliefs & values, and basic assumptions are put in an agile context. This comparison is illustrated in Table 2.4. Of course, this table provides one view of agile and how it relates to culture, it does not mean that it is the only correct one. However, it illustrates some examples on how agile can be related to culture.

Table 2.4: Three levels compared to agile, adapted from A. Moran (2015)

Level	Description	Agile examples
Artifacts	All visible, auditory and tangible phenomena of the culture including physical environment, language, technology, presentation (e.g., clothing, style), mannerisms, processes, documents, observable rituals and ceremonies	Agile team (as empowered, motivated and self-organised), events (e.g., stand-up meetings, adaptive planning), techniques (e.g., pair programming, test driven development, refactoring, MoSCoW prioritisation, workshop facilitation), technologies (e.g., continuous integration, daily build, deployment pipeline), practices (e.g., iterative development, incremental delivery, customer integration) and documentation (e.g., agile charting, risk walling, burndown charts, prioritized requirements list)
Espoused Beliefs and Values	Shared understandings that grow from group learning. Though some beliefs and values will later transform into basic assumptions, many will not as they are neither entirely reliable nor testable	The preferences and principles enshrined in the agile manifesto, self-organization, inspection and adaptation, reflection and continual improvement, feedback integration, trust, openness, communication, collaboration, continuous learning and technical excellence
Basic Assumptions	Those beliefs and understandings that over time have been reliably validated through collective action and deemed to have general validity at which point they become taken for granted	Focus on business need, significance of personal responsibility, strength in diversity, importance of communication and collaboration, positive attitude towards change and uncertainty

2.3.3 Leadership and Culture

According to Schein (2010), culture and leadership can be considered two sides of the same coin, in that you cannot properly understand one without the other. Leadership depends on how the organization define it and who is selected to be leaders, which in

turn is affected by its culture and norms. Simultaneously, leaders form and manage the culture, making them both dependent on each other.

2.4 Analytical Model

This section will first present an overview of the analytical model. Following, we will summarize the literature in the two focus areas of culture and change management. Lastly, we will place the focus areas in the context of the purpose and connect it to the research questions, where the relation between the focus areas of culture and change management will be touched upon.

Change management will be utilized as a lens in identifying facilitators and inhibitors, and to structure the analysis. Culture will have a similar role in terms of being used as a lens, but in addition, it will also be utilized to categorize parts of the culture to understand it. Additionally, we will explore culture in relation to the timeline, in terms of how it has developed over time and what events may be related. Similar, culture in relation to change management and change management facilitators and inhibitors will be considered, touching upon how these aspects' interplay. Lastly, culture in relation to the organizational context will be considered, both currently and the organizations' history. More details on these two aspects, and what they consist of, in Section 2.4.2.

2.4.1 Overview of Analytical Model

In Figure 2.5, the three stages of Lewin's model are presented. This is to provide a structure to the agile transformation, and to assist in identifying facilitators and inhibitors for each of the stages. The timeline and events represents the structure of the empirics, where we develop an overview of the timeline and describes critical events identified. The natural forces / Substantive change block in the figure represents different forces affecting the agile transformation outside the change management and cultural factors. These include interests from external stakeholders and how substantive changes lead to more changes.
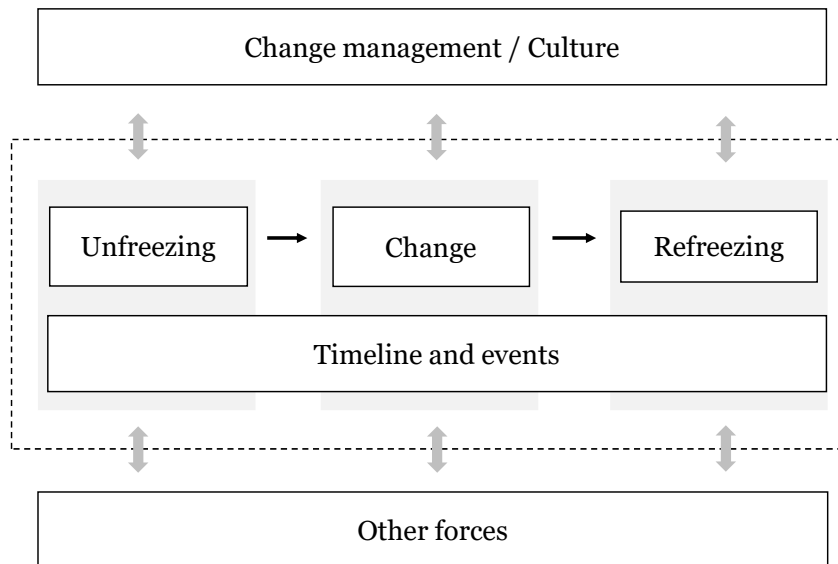
Figure 2.5: An overview of the analytical model

2.4.2 Focus Areas

In this section, we will summarize the two focus areas of culture and change management. The main theory will also be explained to what it will be used in the context of the analysis. Both focus areas include a figure with an overview of the main theory and how it relates to culture, change management, and the facilitators and inhibitors to be identified.

Culture

In Figure 2.6, an overview of the culture aspect is presented. First off, three levels of culture (Schein, 1991; Schein, 1996; Schein, 2010) will be the main literature to explore the culture and understand how it has changed over time. The first level, is artifacts, which consist of things that are observable. The second level is espoused beliefs & values, these can be described as something desirable and ideals that people generally follow (Schein, 2010). However, these believes & values may not be accepted by all individuals or groups in the organization (Schein, 2010). The last level is basic assumptions, which are assumptions that have become taken for granted that few individuals or groups in the organization disagree with them (Schein, 2010). To complement the three levels (Schein, 1991; Schein, 1996; Schein, 2010), A. Moran (2015) provides a description of three levels based on agile. This will be used to focus on descriptions of the culture that are related to agile, rather than identifying the entire culture of the case company.

In summary, the empirics will be analyzed and classified with the three levels (Schein, 1991; Schein, 1996; Schein, 2010). To focus the classification of culture on things related to agile, comparison with the three levels of A. Moran (2015) will be made. The result of this will be a cultural description of the case company. An illustration of this

part of the process is made in Figure 2.6, and is represented by the first two circles to the left and the box that is labeled "Classification of culture".
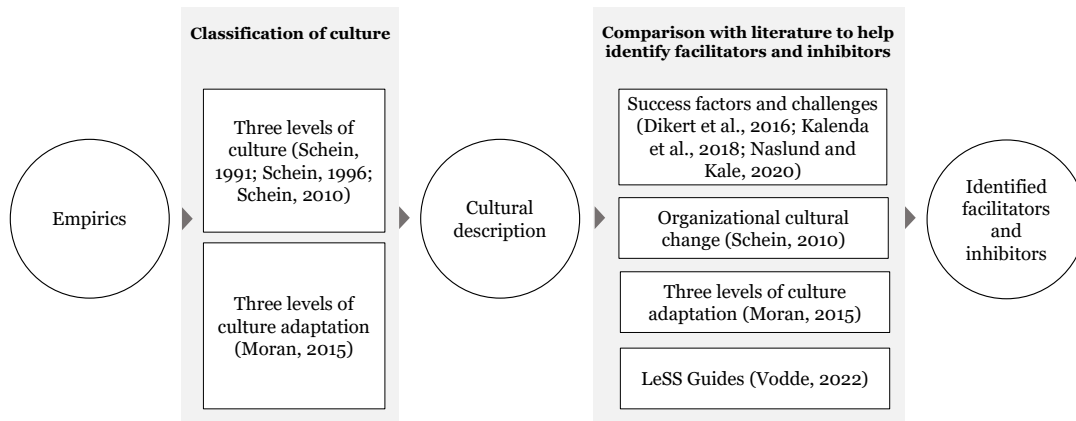
Figure 2.6: Process to analyze cultural aspects in the analytical model

When the culture have been classified, comparison with literature on success factors and challenges will assist in identifying facilitators and inhibitors. Success factors and challenges are closely related to facilitators and inhibitors, as both are either things that are beneficial or disadvantageous to the transformation. A. Moran (2015) and Vodde et al. (2022) provides a more practical perspective on agile transformation, which will also be used to nuance the analysis and identification of facilitators and inhibitors. From Vodde et al. (2022), the three principles: (1) Deep and narrow over broad and shallow, (2) Top-down and bottom-up, and (3) Use volunteering, will be utilized. Lastly, Schein (2010) provides a model for organizational cultural change. This will mainly be used in the change management part of the analysis, which will be described more in-depth in the next section. This part of the analysis process is illustrated in 2.6 with the two circles to the right and the second box.

Change Management

As for change management, an overview of the literature can be seen in Figure 2.7. As for the foundation of the change management literature used, we use Lewin's three step model of unfreeze, change, and refreeze (Lewin, 1947). First, because it acts as a base to much of the later literature, such as the wide-spread model of Kotter and Schein's cultural change model. Thereby, Lewin's more general model will be utilized to structure the agile transformation. It will provide a structure as to identifying facilitators and inhibitors throughout the three stages.
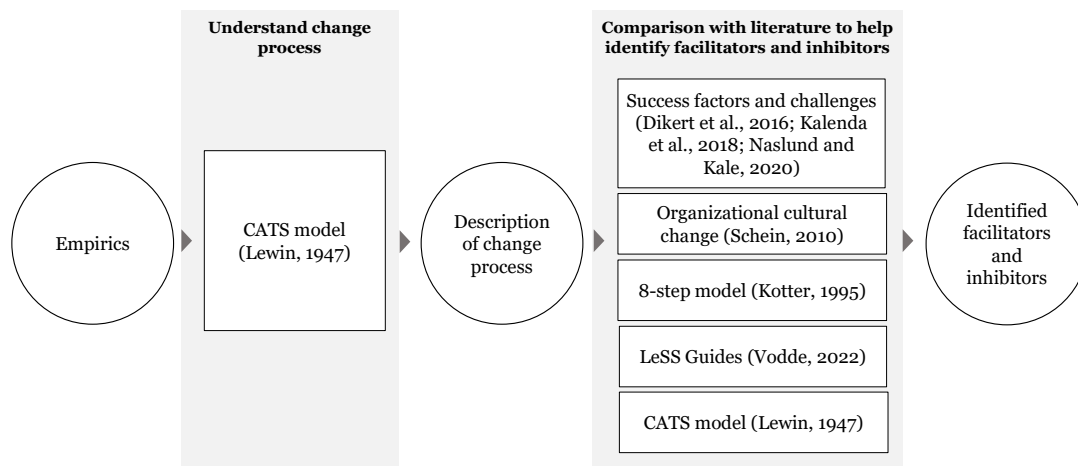
Figure 2.7: Process to analyze change management aspects in the analytical model

As for Kotter's model 8-step model built upon Lewin's, it will be used as a lens to identify facilitators and inhibitors to organizational change in general. To summarize: (1) Establish a sense of urgency, (2) Form a powerful enough guiding coalition, (3) Create a vision, (4) Communicate the vision, (5) Empower others to act on the vision, (6) Planning for and creating short-term wins, (7) Consolidating improvements and producing still more change, and (8) Institutionalizing new approaches.

Similarly, Schein's model, which also is built upon Lewin's CATS model, adding survival and learning anxiety aspects to consider in the change efforts. Furthermore, his 8 steps are also central: (1) A compelling positive vision, (2) formal training, (3) involvement of the learner, (4) informal training of relevant "family" groups and teams, (5) practice fields, coaches, and feedback, (6) positive role models, (7) support groups, and (8) reward and discipline system. The model will be utilized to identify facilitators and inhibitors related to cultural change. Furthermore, Schein's and Kotter's models, together with Lewin's general model, form the basis of the change management lens utilized.

Lastly, similar to in the cultural aspect, critical success factors and challenges of agile transformations will yet again be utilized to identify facilitators and inhibitors, however, this time in relation to change management. In contrast to the change management models, critical success factors provides an agile transformation-specific lens, complementing change management's more general lens. Furthermore, the LeSS adoption principles of: (1) Deep and narrow over broad and shallow, (2) Top-down and bottom-up, and (3) Use volunteering, will like with culture, also be utilized to identify facilitators and inhibitors.

2.4.3 Revisiting the Research Questions

To shortly revisit the research questions. By utilizing the lenses mentioned in both culture and change management, facilitators and inhibitors will be identified. These will be summarized, and the research questions answered in separation. However, there is much interplay between change management and culture. Thereby, this will be discussed to explore how the aspects interrelate. Overall, answering the research questions with the assistance of the theoretical lenses, we will be able to identify important aspects that facilitate or inhibit an agile transformation.

Chapter 3
Methodology

This chapter will present the methodology of this study. First, the research approach will be elaborated as well as critically assessed and motivated for this particular study. Next, the research process will be presented, which outlines the details of the methods used in different stages of the study. Thirdly, we will discuss our personal experiences, providing an understanding of us as researchers, increasing transparency. Fourth, the research quality and reliability will be discussed based on the chosen methodology. Lastly, research ethics and quality will be introduced and discussed.

3.1 Research Approach

To structure and motivate the research approach of this study, it will be described using a research approach framework described by J. W. Creswell and J. D. Creswell (2018). In the research approach framework, three components are depicted: philosophy, research methods, and strategies of inquiry. These components are interrelated and together determines if the research approach is more qualitative or quantitative (J. W. Creswell & J. D. Creswell, 2018). Research approach can be more qualitative or quantitative in nature, as it can be seen as a continuum (J. W. Creswell & J. D. Creswell, 2018). These components will be individually described in the following sections, to explain and motivate the choices in this study. However, J. W. Creswell and J. D. Creswell (2018) also explains that amongst other criteria, the particular research problem, and personal experiences may also shape the chosen approach. In this study, we believe these criteria may have had some impact in the research approach and thus will be touched upon.

In summary, the chosen research approach for this study is a qualitative interpretative single case study, where the rationale behind these choices will be discussed in the following subsections.

3.1.1 Philosophy - Interpretive

Philosophical ideas can often be hidden in research, but they still have a large influence on the research (J. W. Creswell & J. D. Creswell, 2018). J. W. Creswell and J. D. Creswell (2018, p. 24) uses the term worldview, which, in their view, means "a basic

set of beliefs that guide action". There are a number of different names that indicate the same thing, such as paradigms or epistemologies and ontologies (J. W. Creswell & J. D. Creswell, 2018).

According to Easterby-Smith et al. (2021) there are two contrasting views when it comes to epistemologies: positivism and social constructionism, which could be seen as two opposites on a continuous scale. J. W. Creswell and J. D. Creswell (2018) describes the social constructivists worldview with individuals that have subjective meanings of the world based on their experiences. The goal of this kind of study is to look for complexity of views in different individuals J. W. Creswell and J. D. Creswell (2018). What resonated with us what to gain a general understanding of agile transformations that could include the complexity in such a process. Since agile is people focused, richness of data may be needed to better understand the perceptions of different people and stakeholders. Another epistemology is interpretivism, which has a lot of similarities with social constructivism and is also often combined or used interchangeably (J. W. Creswell & J. D. Creswell, 2018; Merriam & Tisdell, 2015). Interpretivism has the view that there is no single, observable reality, but it is rather constructed socially (Merriam & Tisdell, 2015). What this means is that for each observation, there could be different realities or interpretations of that event or observation. Guiding our research, understanding an agile transformation which affects a lot of the organization and different hieratical levels, there could be a lot of interpretations and views.

Furthermore, we believe that agile transformations are context bound, since each organization is unique and people are unique. Klein and Myers (1999) presents a set of seven principles with the purpose to increase the structure of interpretative field studies in both conducting and evaluating them, without restricting them. Throughout this thesis, these principles has played a significant role in how we approach things. Throughout the methodology, Klein and Myers (1999) a set of principles will continue to appear and motivate our decision-making. Since the principles in Klein and Myers (1999) also aligns with interpretivism and our philosophy, this study takes the epistemological stance of interpretivism.

3.1.2 Design - Single Case Study

There are several possible ways for strategies of inquiry after the approach of the study (qualitative, quantitative or mixed method) has been chosen (J. W. Creswell & J. D. Creswell, 2018). The strategy of inquiry for this study will be a single case study, in which we will motivate in the following paragraphs.

A common question in case studies is if you should focus on a single case or broaden your perspective and compare multiple cases. Eisenhardt (1989) and Eisenhardt and Graebner (2007) argues for multi-case studies to increase the generalizability of concepts. However, there are multiple trade-offs in conducting a multi-case study in comparison to a single case study, limiting Eisenhardt's approach: Single case allows for going more in depth, single case allows for a deeper understanding rather than comparative insights, and it can be considered telling good stories versus creating

good constructs (Dyer Jr & Wilkins, 1991). This study is a single case study to allow for deeper understanding for the case at hand. This is heavily dependent on taking the social dynamics into consideration (Dyer Jr & Wilkins, 1991) which is of especial importance when looking at issues related to individuals, teams, and organizations, where social dynamics are central. Agile transformations inherently create a need for employees, teams, and organizations to change, making social dynamics relevant and indicates that understanding social dynamics is of importance. Further, current agile transformation literature lacks deeper insights in the format of case studies, enabling this study to start filling a gap in the literature. Lastly, conducting a deeper single case study would both increase the caliber and the quality of the theory found through the empirics, enabled through in-depth story telling (Dyer Jr & Wilkins, 1991).

Yet again, this causes the study to be missing out on a comparative analysis and comparative insights (Eisenhardt, 1989; Dyer Jr & Wilkins, 1991). However, Flyvbjerg (2006) argues differently and claims that it is possible to make comparative insights from single cases, and that case studies can contribute to scientific development, as one of his five common misconceptions about case studies. To allow for this, choosing a suitable case is of importance, depending on if it is to verify, falsify, or to find new theory (Flyvbjerg, 2006). Further, he argues that cases are essential in learning and getting a deeper understanding, which will be facilitated in this study by understanding the case, its context, and its dynamics in depth. Overall, this constitutes for a case-approach as a possible means for understanding cases in depth, which is why it is a suitable approach in this study and aligns with an interpretive research approach. An interpretive case study also aligns with Klein and Myers (1999) principles, as principle 1 and 2 both put emphasis on the context, where principle 2 focuses on the social and historical background to the research setting (Klein & Myers, 1999). Thereby, this thesis focuses on a single case study, to go more in depth, as mentioned earlier, and to allow for more understanding of the case's context.

3.1.3 Methods - Semi-structured Interviews and Documents

Research methods describe how data is collected, analyzed and the interpretations of the study (J. W. Creswell & J. D. Creswell, 2018). The data collected for this research will be mainly through interviews and documents if provided by the case company. The reason for this is mainly because interviews are necessary for past events, as they cannot be replicated (Merriam & Tisdell, 2015). Another reason is that the access to the case company is a bit limited, as we are not able to work at the case study site, where we could have more easily have observed behavior. However, there is still possibility to utilize different data sources, and thus we will be trying to get access to documents as well as performing interviews with an exploratory nature, as the theory about agile transformation is quite scarce. A characteristic of qualitative research is multiple forms of data sources, rather than a single source (J. W. Creswell & J. D. Creswell, 2018). A semistructured interview, is an interview that combines characteristics of both and unstructured and structured interview, and can be placed in the middle of the two approaches (Merriam & Tisdell, 2015). What is important in a semistructured interview is that there are areas or issues to be explored in the interview document which are determined beforehand (Merriam & Tisdell, 2015).

However, the exact questions or format can be flexible during the time of the interview, so that the researcher can respond to the situation, allowing the respondent to freely express new ideas or topics (Merriam & Tisdell, 2015). Since important areas were identified during the pre-study, certain areas should be covered during the interviews. However, we still want to allow emerging themes and topics and to adjust the interviews based on the situation, thus a semi-structured approach would be suitable.

3.1.4 The Research Problem

The research problem of this study is to better understand the process of an agile transformation, and since the literature lacks both theoretical models and case studies, this study aims to fill those gaps. When there is little research done on an area, a qualitative approach may be suitable, as it is exploratory and thus does not need to know the exact variables in advance (J. W. Creswell & J. D. Creswell, 2018). The literature field of agile transformation, which we interpret as the literature that uses terms related to agile transformation (See more details on the literature review on agile transformation in Section 3.2.1), is quite young and there are still gaps in the literature such as lack of case studies (Dikert et al., 2016; Paasivaara et al., 2018). To fill the gaps in the literature, theory generation may be needed, which is something that qualitative approaches are more appropriate for (J. W. Creswell & J. D. Creswell, 2018; Merriam & Tisdell, 2015)

3.1.5 Summary of Research Approach

The research problem highlights the lack of literature in agile transformation, which suggests a more qualitative approach to generate theory. However, current literature will be utilized both to understand the collected data, and to some extent assist in generating theory. When it comes to personal experiences, a qualitative approach may be more convenient because of more experience in that area. Furthermore, our philosophical views mainly align with the views of interpretivism. For strategies of inquiry, a single case study is chosen, as it allows for deeper insights and may increase the quality of findings, rather than more comparable findings in other companies/industries. Lastly, the research methods will consist of mainly semi-structured interviews, since this allows for more focused interviews in areas that we are more interested in, while still letting the respondent freely express their views with more open-ended questions. To increase the sources of data, documents will also be collected and analyzed.

To determine the research approach, some qualities of quantitative research and qualitative research should be discussed. Qualitative research differs from quantitative in that qualitative studies are more interested in understanding people's interpretations, while quantitative studies may focus more determining e.g., cause and effect, prediction often with a focus on how much or how many (Merriam & Tisdell, 2015). Another distinction is that qualitative research use words as data and analyses it with a number of techniques, and quantitative use numbers and analyses it with statistical techniques (Merriam & Tisdell, 2015). This research aims to understand the process

of agile transformation, where different interpretations and perception of a people involved would be necessary to understand this process. Furthermore, this study also aims to fill the gap in the literature in agile transformation and case studies. Given these characteristics, this best aligns with a qualitative study, with an interpretative nature. The full research approach is summarized in Figure 3.1.

Philosophical Worldview
Interpretive

Design
Single case study

Research Approach
Qualitative

Research Methods
Semi structured
interviews
Documents
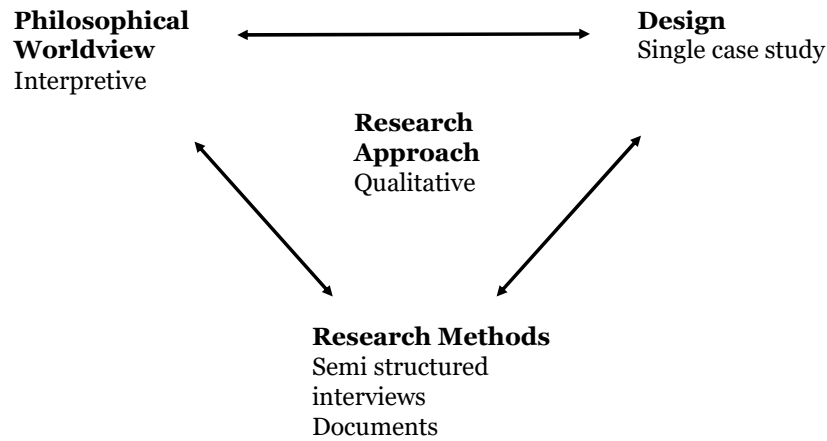
Figure 3.1: Chosen elements in the research approach of this study, which together forms a qualitative approach.

3.2 Research Process

In this section, the overall research process will be described and elaborated upon. An overview of the steps and relations in the research process are illustrated in Figure 3.2, but a general outline will be given here.

The research process started with an initial literature review as well as idea generation together with the case company. This generated ideas that were relevant for us, the client company, as well as a general understanding of the literature and identifying gaps. During these idea generation sessions, the case company was identified, which matched some of the ideas that were generated well. The next step was to conduct pre-study interviews with people from the case company. In total, 4 interviews were conducted with 3 agile coaches and 1 senior engineer. The result of this was that 3 focus areas were identified: culture, management and leadership. These three areas were interesting both from a practical point of view, as these were factors mentioned often in the interview. But also from a theoretical point of view, as the same areas could also be identified in the literature as common challenges and success factors. When the focus areas were decided, an initial purpose was made. There is a unidirectional arrow between "Pre-study Interviews" and "Focus Areas and Purpose". The reason for this unidirectional arrow is that the focus areas did not change, but were only narrowed down later in the process. The next part of the research process is the iterative part in the middle. This is to indicate that the purpose, empirics, theory & analytical model and data analysis is an iterative process and has been altered and

adjusted throughout the study. Lastly, is conclusions, which has a bidirectional arrow that goes back to data analysis. This is to connect the conclusions to the iterative process, because as changes have been made during the iterations, the conclusions have also been adjusted.
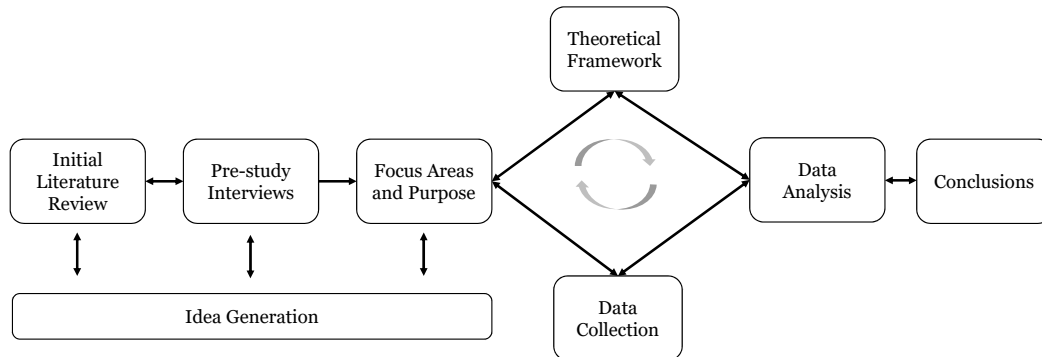
Figure 3.2: Overview of the research process.

3.2.1 Literature Review

The initial literature review was conducted with the purpose of providing the authors with a better understanding of the current literature in the fields of agile transformations and change management. Firstly, a wide scan of abstracts and summaries in journal articles, conference proceedings, and books was conducted, resulting in an extensive list of works. The first step during this scan was to search for certain topics where the field of agile and agile transformations was the first topic to be explored, and the following search words were used: "Agile transformation", "Agile", "Agile coaching", "Agile transition", "Agile adoption", "Agile transformation change management", "Large scale agile transformation", "Large scale agile taxonomy", "Large scale agile", and "Managing critical success factors agile". Following, with a couple of possible gaps identified in the literature of agile transformation, the field of change and change management were explored, and the following search words used: "Change management", "Creating lasting change", "Creating lasting organizational change", "Organizational change", "Creating sustainable organizational change", "Literature review change management", "Change management people", "Leading organizational change" Additional topics that were explored: "Critical success factors", The search engines used were Google Scholar and Linköping University's UniSearch.

In culture and cultural change: "Changing Organizational Culture", "Organizational Culture", and "Change Organizational Culture" where the main search words used. It is quite limited due to our previous knowledge of Schein (2010) and A. Moran (2015).

To complement the lack of previous knowledge on change and change management, a professor at Linköping University was contacted to provide recommendations on initial literature in the field. This resulted in lectures and books being used for building an initial understanding of change and change management, and building a foundation on which more theory was to be explored. Additionally, the *Journal of Organizational Change Management* was used to find journal articles in the field of change management.

In the literature search on agile transformation, "Agile transformation", "Large-scale agile transformation", "Agile adoption", "Agile transition" were the most common search words used. Agile adoption and agile transition were not as common as the other search words that were used, but some authors used these interchangeably with agile transformation, which is why we chose to include them. For instance, transformation, transition and adoption are also keywords used in the literature review by Dikert et al. (2016), in their study on success factors and challenges in large-scale agile transformation, indicating a lack of clear definition between these terms.

With the initial literature study, a basic understanding of the topics were developed. This assisted in developing several initial purposes of the study on possible directions to take in the study. This led to further collection of literature, with the main approach of going through references in collected work. The main sources were in the form of literature reviews in journals, books, and lectures on the topics, which provided a rich offer of literature to further include.

To lay the foundation for the theory development of change and change management, the previous steps led back to old, heavily cited literature which acted as the foundation for the initial definitions of the topics, on which much of the work today builds upon, where Lewin acts as one such inspiration. The authors of this thesis consider much of this work timeless, which makes it relevant today, and the large collection of work further building on the older foundation provides a rich group of literature.

Following the initial literature study, the data collection was initiated. In parallel with the collection and analysis, current literature was revisited, and we searched for more depending on new themes identified in the data. This was conducted in a rather unstructured manner, where additional literature review was conducted when deemed necessary for the analysis.

The literature in this study are to a great extent peer-reviewed. The majority of journal articles and conference proceedings are from well established journals and conferences. In the field of change and change management, works and theories that are used as an important part of the developed theoretical framework are well cited. Criticism and alternative perspectives has been included to an extent as well to provide a more holistic theoretical framework. To complement this, the authors of this thesis has tried to view the literature with a critical lens, following the recommendation of Klein and Myers (1999) and their principle 7, principle of suspicion.

3.2.2 Pre-Study Interviews

While conducting the initial literature review, we saw the need to get input from practitioners to find what issues they are fighting with in agile transformations. Thereby, we developed interview questions to explore the topic, while being biased by the literature to some extent. We conducted four such interviews, all with in a semi-structured manner, where topics brought up by the interviewees were the main focus, while having theory-built questions as a backup. The main findings were connected to management and culture/mindset, which made us dive deeper into these two topics.

3.2.3 Focus Areas and Purpose

As indicated, the focus areas were partly developed based on the pre-study interviews. However, it was also complemented by the current literature, and what areas we found common, and considered important. This led us to first focusing on culture, management, and leadership. However, due to the width of all of these topics, we delimited ourselves. First off, we merged leadership into culture, mostly due to Schein (2010) the view on culture and leadership being one and the same. Secondly, we decided to delimit management to change management. Management was originally intended to include both management factors found in the case, and change management to structure and facilitate the agile transformation. However, due to the width of the overarching focus area of management, we decided to delimit ourselves to change management as a focus area, and instead include management factors both into change management, and in relation to culture, which includes much of the original factors considered.

The development of the purpose came about in iterations. Initially, a very broad purpose was developed, mainly to allow us to somewhat in unity work in parallel with exploring the literature. Following the pre-study interviews, we narrowed the purpose down somewhat with the topics of culture, management, and leadership. However, it remained broad, and as discussed in the previous paragraph, we delimited ourselves to change management and culture, which was the second larger change made. Additionally, in combination with the first re-structure of the purpose, we developed some draft research questions, starting at five different, which were delimited to two after the second rework of the purpose.

3.2.4 Data Collection

The first step of data collection was to find a suitable case/participants for the study. This step was done together in a discussion with the client company. In the discussion, we agreed that agile transformation was an interesting topic, and developed some initial ideas. Based in these ideas, a case company was selected, which the client company had some access to. This aligns with J. W. Creswell and J. D. Creswell (2018) that explains that in qualitative research, purposely selecting participants or sites that best help the researcher understand the problem is the best choice. With these initial discussions, we identified a case of a large-scale agile transformation that was initiated a couple of years ago. This type of case was very interesting because of the size

of transformation, and because it was recent in time and still ongoing, meaning that it would be easier for participants in the study to remember during interviews.

Together with the purpose of the study, an initial analytical model, based on the theory and pre-study interviews, was constructed. This analytical model then served as a base for the interview material, as semi-structured interview questions were created, these can be found in Appendix A. Merriam and Tisdell (2015) explains that to get quality rich data from interviews, it is important to ask well selected open-ended questions. Because the interview questions were based both practically from pre-study interviews from practitioners and literature, the relevance of the questions were assumed to be higher. Furthermore, we had two feedback sessions, one from our supervisor at the university, and one from a supervisor at the client company. These feedback sessions gave us valuable feedback in terms of how questions were asked, as well as making sure it was practically relevant questions and easy to understand from a practitioner's point of view. Lastly, a pilot interview was conducted with one of the supervisor at the client company that had been working at the case company, to try out the interview document and make adjustments based on feedback.

The first interviewees were selected based on recommendations from our client company. During the interviews, we asked the interviewees to recommend possible additional interviewees, which they believe it would be beneficial for us to talk with. Although this provided interesting people to talk to, it did not ensure that we got to interview a variety of roles with different perspectives. During an interview with a manager, we discussed the issue and that we valued a variety in perspectives. This resulted in the manager suggesting multiple additional interviewees with a broad range of roles, enabling us to get more insight into the transformation. An issue with this approach was that interviewees could recommend people with similar views as themselves. To avoid this, we started incorporating a question if we could talk to people with different views on the agile transformation, where the aim was to talk to people more skeptical to it, due to many of the previous interviewees having a rather positive view on the transformation and agile in itself, according to our perception.

The interview questions were developed iteratively during the study, but the approach to developing the questions was the same. Based on recommendations by Turner III (2010), all questions were made open-ended, allowing the interviewee to freely express their views. Furthermore, we tried to make the questions neutral to not influence the interviewee (Turner III, 2010). We divided the questions in different areas: general, about the agile transformation, change, change management and culture. The areas were similar for all interviewees, but some questions were adapted and changed depending on what role and experience the interviewee had. The reason for this was because we wanted to get the most information of interviewees, where they could tell their story the best, rather than a generic document. This partly aligns with selecting interviewees that can best share their story (Turner III, 2010). Before any main interviews, a draft interview guide was created, following the principles discussed previously. When the draft interview guide was finished,

we did a pilot interview with one of our supervisor at the case company, this is also recommended by Turner III (2010). We also got feedback from our supervisor at the university regarding the interview guide.

The interviews were conducted with different roles and perspective in the case company, aligning with principle 6 and 7 in Klein and Myers (1999), the principles of multiple interpretations and suspicion, respectively. We tried to interview people with different experiences and roles in the transformation, to get many perspectives and interpretations on the transformation. All interviews were conducted on Microsoft Teams and were recorded. Notes were also taken during the actual interview. Principle 3 in Klein and Myers (1999) explains that the interaction between researcher and subject may affect the research material. We tried to address this by firstly with a few icebreaker questions to make the interviewee more comfortable during the interview (Turner III, 2010). All data and interview material were also discussed together to reduce the bias of one researcher.

3.2.5 Data Analysis

The data analysis aims to follow a similar structure as Yin (2015) suggests for qualitative studies: Compiling, disassembling, reassembling, interpreting, and concluding, where the steps are iterated through and revisited. In addition to the process, inspiration from Merriam and Tisdell (2015) will be taken as well. Mainly in the form of conducting analysis simultaneous to the data collection. Lastly, we present some details on how we approached the issue of how we retrieved and analyzed culture-related empirics.

The first form of analysis conducted was the informal analysis during the interview. Due to the semi-structured format, some follow-up questions were formed during the interview itself. In addition to this, following up answers asking for examples and what effects things has had in the eyes of the interviewee were commonly occurring. Directly after each interviewee, the authors of this thesis sat down and discussed what stood out, what aligned with previous interviews, and other discussion points which had arisen during the interview, acting as additional informal analysis.

Compiling

Compiling was the first step of the more structured analysis. The notes taken from the interviews acted as the foundation of the data collected. Each document of interview notes was refined where the authors first read through the notes and made smaller adjustments to language and structure. Following, each interview was rewatched by one of the authors, adding new insights, refining the notes, and structuring the interview notes based on some key headings: General questions, Agile Transformation, Change, Change Management, and Culture. During these interview-rewatching sessions, the author responsible analyzed the interview and the data informally yet again and complemented previous notes with additional ones.

Disassembling

Following, the aim was to break down the compiled data. This was done by both writing memos, short comments on pieces of the interview notes, and by codifying pieces of the data. The memos were written mostly when the responsible author was struck with general ideas based on the notes or the video-interview material. These notes were more general and were commonly discussed between the authors, and were at times notes on possible quotes to enhance the empirics. The codifying process consisted of the authors, commonly short after rewatching the interview, analyzed the notes. During this process, comments focusing on factors identified from the literature was the main contribution, where topics brought up by the interviewee were categorized. However, this was also complemented by adding new themes identified in the interviewee, which initially were categorized under a collection of "other" topics, to avoid missing out on possible new themes being identified. The categorization was done iteratively, where the authors both separately, and together, revisited the categories and discussed the issues until we reached agreement.

Thereby, we mixed a top-down approach and a bottom-up approach to analysis, as defined by Myers (2013), where the theoretical framework builds the foundation on which the data is analyzed while new concepts arises from the interviews. This was conducted iteratively throughout our research process, as indicated by Figure 3.2. The purpose of our top-down approach was to first add a theoretical lens to allow for us to categorize and understand the different parts of the agile transformation. However, we quickly found that this was not enough, empirical input was required to derive what is considered important in this case, and what factors are of most importance, assisting us in delimiting the thesis' scope while allowing us to go in depth focusing on some of the most, if not the most, important factors in agile transformations.

This step was iterated through where the authors reviewed each other's analyzed notes, where pieces were refined, discussed, and added. Previous interviews were also revisited at later stages to view them with new knowledge and with a different perspective.

Reassembling

We decided to analyze the data through listing a series of these critical events (Myers, 2013) throughout the agile transformation in a somewhat chronological order, with some events occurring simultaneously. In addition, we initially took a critical incident approach (Myers, 2013) during our interviews to derive what important events occurred during the agile transformation through our interviews. This formed our initial reassembling of the data, resulting in a graphical timeline.

Simultaneously, we were on the lookout for themes and patterns, mainly by focusing on two main questions during the reassembling: *How may events and experiences be related to each other?* And, *does any patterns relate to the research questions?* Which was based on Yin (2015) suggestions. Additionally, we not only looked for similarities

when rearranging the data, but we also considered differences between perspectives and perceptions. The themes and patterns identified were organized into hierarchical arrays (Yin, 2015), where "culture" and "management" where the two overarching themes.

Interpreting

Next, we used the reassembled data to identify facilitators and inhibitors. It was done through utilizing a theoretical lens, both for change management and for culture, for more information on its details, see Section 2.4. By utilizing success factors and challenges from the agile transformation literature, we utilize previous research as a basis, increasing the validity of our study by basing facilitators and inhibitors on previous research. Additionally, we had an idea of what would be interesting based on our prior informal analysis of the data. At this stage, we wrote the analysis while continuously having discussions regarding relevant analysis. We utilized that we were two authors to critically review and discuss each other's analyses as well as the interviewees interpretations. An example of this is critically reviewing reasoning presented in the analysis, to make sure our way of identification of facilitators and inhibitors is more clearly presented to the reader. This also led to increased support of facilitators and inhibitors, both empirically and theoretically. Although it required time and commitment, we believe that the interpretations increased in quality due to the discussions, allowing for our interpretations to complement each others. At this stage, we also discussed how different facilitators and inhibitors interrelated, as well as how change management and culture relate, and lay the foundation to our discussion of the summary of facilitators and inhibitors.

We started interpreting early on. At the compiling stage, we revisited the research questions and discussed how our data could be put in relation to these. Thereafter, the interpreting has continued throughout our work with the data and the analysis. This resulted in us iterating this step when more data had been collected and analyzed. First, we discussed the new findings and put them in relation to prior ones. Based on this, we identified new facilitators and inhibitors, as well as restructured the grouping of these, resulting in a new updated version of the facilitators and inhibitors. One such example is of task forces, where an interview with a manager substantially added new perspectives, such as seeing task forces as something necessary to keep the business going and retaining customers. Although they remained categorized as an inhibitor, it added more depth to the issue in terms of varying perspectives. In this step, we utilized our different interpretations to discuss and develop our findings, strengthening our findings.

Concluding

Lastly, we drew conclusions from our entire thesis. Most of the conclusions arose with our final work with interpreting the reassembled data, especially with the final summarization and discussion of facilitators and inhibitors. However, we had already an idea of many of the conclusions prior, or at least themes in which we would be able to draw conclusions. At this stage, we tried to raise our interpretation to a

more generalized level, e.g. what conclusions we could draw on a more generalized level of our facilitators and inhibitors.

Steps to Assess Cultural Dimensions

To complement this method of analysis, we utilized parts of the ten-step cultural assessment process in the context of a change program, presented by Schein (2010). We delimit ourselves to only using parts of the process due to time limitations, both on our side, and on the interviewees side where the process usually takes at least one day to complete. The main steps which we utilized where: (5) explaining how to think about culture, (6) elicit descriptions of the artifacts, and (7) identifying espoused values. Additionally, (8) identifying shared tacit assumptions were touched upon, but not explored in depth.

The fifth step is to explain how to think about culture and that it manifests in different levels, but that the goal is to try to find out the underlying assumptions at the lower level (Schein, 2010). Here, we provided a short introduction to culture for the interviewee, since it can be perceived as a rather abstract topic.

The sixth step is to retrieve descriptions of artifacts. A good way to start is to first ask the person that most recently joined the group (Schein, 2010). Although we did not succeed in getting an interview with the most recent employed person, we succeeded in getting interviewees with employees with a wide range of time at the company. Some joining at the beginning of the transformation, while others had almost a decade of experience.

The seventh step is to identify espoused values, and can start in an artifact area that seems important, and to try to understand reasons why it is important (Schein, 2010). To touch upon this topic, we asked the interviewees about how they would describe their culture, upon which follow-up questions were built, such as going in depth on topics, or asking for examples.

The eighth step is to identify shared underlying assumptions, and a starting point is to see if all artifacts can be explained by the espoused values or if some artifacts are in conflict with the espoused values (Schein, 2010). Although difficult to retrieve, we tried to get the interviewee to analyze and think about the relationship between the agile transformation and the culture. Any clashes they have identified? Anything they saw facilitated the implementation of agile methodologies? Furthermore, we asked the interviewees what impact certain aspects of the culture had on the transformation to understand if it had facilitated or inhibited the change, touching upon step (9) of identifying cultural aids and hindrances.

3.3 Personal Experiences

Personal experiences may influence the research approach, partly based on the experiences and knowledge the researchers have, but also in terms of personal interest on how the researcher like to perform their study (J. W. Creswell & J. D. Creswell,

2018). To better understand the experiences of the authors, the following section will introduce and provide prerequisites of the authors before we got into writing this thesis. This is to allow for the reader to understand our context to allow for both better understanding of the interaction between researchers and subjects, and to allow for transparency in the historical intellectual basis of us which has guided our research approach, aligning with both principle 3 and 5 of Klein and Myers (1999).

Both authors are students in the fifth-year of the Industrial Engineering and Management program at Linköping University, and have both graduated with the same bachelor degree, of computer science. This has provided the authors with an understanding of both programming in itself, but also in the methodology of programming in teams, where the main experience is of Scrum, with multiple project behind us, each. Further, both authors are currently pursuing the same master degree of Digitization and Management. The courses in Digitization and Management generally follow a more qualitative approach to research and projects done in the courses. This experience makes the choice of a more qualitative approach more convenient, since that is where both authors have the most experience. However, even though the main thread throughout our studies have been quite similar, there are several courses and projects, both at University and in engagements outside our studies, that differ.

Filip Brunander has taken courses in Project Based Organization and Management as well as in Innovation Management, which provided insight into project work, how agile may fit into complex organizational settings, and how larger projects can be managed. Within this area, he came in contact with scaling agile, although quite limited. Outside his studies, the main relevant experience he has is of agile methodologies in a development-team setting, where a variety of methodologies has been used.

Björn Bergfeldt has taken courses in Corporate Strategies and Management Control, giving more insight into how organizations operate and achieve their strategies. Outside of school, Björn has worked part-time in sales for 4 years at a retail company with a strong corporate culture, giving practical examples of how culture manifests in an organization. Björn has also worked as a summer intern at an IT-consultant as a software developer and Scrum Master for a smaller project. Agile methodologies are something Björn has practiced and read about, both in university courses and practically.

Initially, the authors came in contact with an employee at Responsive through a guest lecture, where the topics sparked interest. This led to a lunch-meeting where the employee's experience of working as an agile coach were discussed and led the authors to contact Responsive and to look for an opportunity of writing their master thesis in collaboration. Responsive had access to a larger recent agile transformation, which was how the case discovered. After an initial description and discussion with Responsive, this case aligned with our interest and the access to the case made it a good fit for this study.

3.4 Research Quality and Reliability

In this section, the research quality and reliability will be discussed. This aims to be conducted via a summarization and discussion of Klein and Myers (1999) seven principles, and how we have utilized them in our work. Based on the discussion, conclusions on the quality and reliability of the thesis will be drawn. Before going through our work with the principles, we will quickly motivate our choice of using Klein and Myers (1999) set of principles, which is developed for Information Literature studies. First, the set of principles aligns with our interpretive philosophy. Secondly, many, if not all, principles are aimed towards understanding people and the context. This, we believe, is important for our case as well, where understanding the transformation depends on the context, such as with culture and experience of the organization. Lastly, the principles are easily applied to our context, and we early on identified benefits of utilizing them during our work.

The fundamental principle of the Hermeneutic circle (1) was utilized throughout the study. Firstly, in terms of understanding the main concepts of agile, agile transformation, culture, and change management. Secondly, with the most important part, was in understanding the empirics. Our process of analysis, data collection, and building of the theoretical framework was iterative. Where we focused on individual topics, such as themes and events in themselves, to assist in understanding the transformation as a whole, iterating between the two.

The principle of contextualization (2) is a part of the foundation of the study. Early on, we found ourselves to believe that the context of the agile transformation heavily influenced it. This due to how different prerequisites affects the transformation. One such example is culture, which is in focus in this thesis. Thereby, we have tried to present our understanding of the context of the transformation, both by presenting information regarding the interviewees (although it is limited due to anonymity) and some background of the organization, see Section 4.1. Further, throughout the transformation we have included identified events, and tried to describe its context.

The principle of interaction between the researchers and the subjects (3) was taken into consideration when developing the interview questions. The questions were developed while trying to keep them open, allowing for the interviewee to interpret them and themselves consider what they believe are most relevant. Furthermore, we tried to avoid "leading questions". However, due to the nature of the semi-structured interview, follow-up questions were developed during the interview, where less focus was on avoiding formulating leading questions. Furthermore, we as authors lack experience in conducting interviews and may thereby have developed leading questions on the spot. When rewatching our interviews, there were a few occurrences where some questions could be perceived as leading, however, these occurrences were rare.

The principle of abstraction and generalization (4) has been applied to allow for transparency towards the readers on how we have generalized the empirics to the analysis. This is done by first presenting the empirics in a manner aligning to what we

interpreted in practice, trying to avoid analyzing in at this stage to allow for a clearer precess of generalization. However, due to our bias and that we began informally analyzing the empirics at an early stage, even during the interview, it may have resulted in some tendencies where analysis have taken place unconsciously in the empirics. Following, we developed the analysis, where empirics in generalized based on the theoretical lens. We describe this process more clearly in Section 3.2.5.

The principle of dialogical reasoning (5) has been taken account in our fundamental research process, where collection of data and development of theoretical analysis was conducted simultaneously and iterative. Further, when selecting the focus areas of culture and change management, both literature and empirics were taken into consideration before selecting what to focus on.

The principle of multiple interpretations (6) was considered when selecting interviewees. We tried to get access to interviewees with a variety of different roles, ranging from top local management to developers, to allow for a more holistic view. We tried to understand each perspective and get insight based on these perspectives combined. Following, we identified, after a couple of interviewees, that all interviewees were positive towards agile, and most towards the agile transformation as a whole. Thereby, we actively searched for differencing views, e.g. people with a more critical view on the transformation to widen the range of interpretations, and to provide a more holistic view of the transformation. Although this initiative, the majority of the interviewees remains very positive towards agile, which is a bias that should be taken into consideration.

The principle of suspicion (7) is applied through the two authors of this thesis both getting their own understanding, critically assessing each other's interpretations, and discussing clashes.

To summarize, all seven principles have been utilized to a varying degree. Overall, it ensures a certain level of quality and reliability of the thesis. However, some issues, such as with the bias of the interviewees, remains.

3.5 Ethics

Considerations regarding ethics have been made throughout the study. J. W. Creswell and J. D. Creswell (2018) present a stepwise framework throughout the research process on what ethic issues may occur, and how to address them. A few of these issues will be presented here, all recommended by J. W. Creswell and J. D. Creswell (2018).

In the beginning of the study, we identified and contacted key personnel to gain access to the case study. When contacting participants, we informed about the purpose of the study and how the data was supposed to be used. We also informed the participants that it is voluntary and that they can always withdraw from the study at any time. When collecting data, we tried to avoid leading questions and protected the interviewees with anonymization. Lastly, we considered GDPR when storing data,

and tried to report as honestly as possible. All interviewees that wanted access to the report when it was finished were also sent a copy.

Besides these ethical considerations, we have also chosen to anonymize the participants and the case company. The reason for this is mainly to protect participants and the company, because some things in the study can be considered sensitive. For instance, some interviewees had negative opinions about people and the transformation, and this could lead to negative consequences if these people are identified. Another issue if the case company is identified is the relationship with its customers that could be damaged, as some participants had some opinions regarding how they collaborate with customers. We could also see that the result of this study could be misused, for example, if the found facilitators and inhibitors in this study are used in a company without any consideration of contextual factors such as culture, characteristics of industry, customers and more. Our findings in the study shows that the internal and external environment seem to have a large impact on the transformation, and thus should be considered.

Chapter 4
Empirics

This chapter aims to provide an understanding of both the context in which the transformation was conducted, and the transformation in itself. To do this, an overview of the transformation with important events will be presented. Following, the transformation will be divided and explored through three stages: before restructuring, restructuring, and after restructuring. Lastly, the development of culture over the course of the transformation will be presented.

4.1 Context to the Case

The case company is today a software-focused company working with software related to automotive vehicles. The firm originates from the automotive industry, resulting in the industry-related culture remaining even today. The company values today is focused on people-factors, collaboration, competency, and passion. Due to the firm's history, at the time of the restructuring in May 2018 the organization had little knowledge of working agile, as their background lies more in traditional product development. Furthermore, the case company had close to no knowledge about large-scale agile before initiating the agile transformation.

4.1.1 Interviewees

In total, there were 10 interviewees, where each interview was about 1 hours long. In Table 4.1, all interviewees are depicted, including role, date of interview and time of interview. Some interviewees were interviewed twice, this is depicted by a number next to the date and time.

Table 4.1: Interviewees

Interviewee	Role	Date of interview/s	Time of interview/s
AC1	Agile coach	(1) 2022-02-22 (2) 2022-03-25	(1) 55 min (2) 71 min
AC2	Agile coach	(1) 2022-02-22 (2) 2022-03-29	(1) 63 min (2) 71 min
AC3	Agile coach	2022-02-21	55 min
AC4	Agile coach	2022-04-28	56 min
SE1	Senior engineer	2022-03-02	53 min
M1	Manager	2022-04-08	57 min
M2	Manager	2022-04-22	36 min
M3	Manager	2022-04-26	56 min
DEV1	Developer	2022-04-25	48 min
PO1	Product owner	2022-04-27	53 min

To give some more context to the interviewees, some roles will be briefly described. The managers that were interviewed were from different organizational levels, spanning from line managers to higher managers in the organization. Senior engineer had a focus on development and agile coaching. Agile coaches work mainly consisted of education, training and coaching development teams, some coaches were also external consultants. Also, a number of interviewees have had different roles during their time in the organization, but we chose to highlight their most recent role.

4.1.2 Overview of the Transformation

An overview of the transformation is illustrated in Figure 4.1. There are four considerable events during the transformation: the formation of a transformation group, the pilot project, the restructuring, and dissolving of the transformation group. A description of the events are given in the figure, and these events will be described more in detail in the following sections. However, it is important to note that there were several other events during the transformation that are not included in the figure. Events that were not as considerable in terms of change are not included, and events that have been continuous over multiple periods of the transformation are also not included. However, following the four events on the timeline, there are some descriptions of what happened afterwards. These descriptions are indicated by dotted lines, and are not specific to any certain date.

The timeline for the agile transformation can be divided in three sections: before the restructuring, restructuring and after the restructuring. The sections are called restructuring, and not transformation, because the agile transformation is still ongoing and arguably does not have a clear end. Before the restructuring refers to the period prior to the restructuring, which on the timeline is everything before event #3. The restructuring refers to the organizational restructuring which occurred in May 2018, where the organization went from a component based structure to instead be divided

into Requirement Areas (RAs). On the timeline, this is event #3. After the restructuring refers to everything after the restructuring, and spans all the way to today (2022). In the timeline, this is everything after event #3.
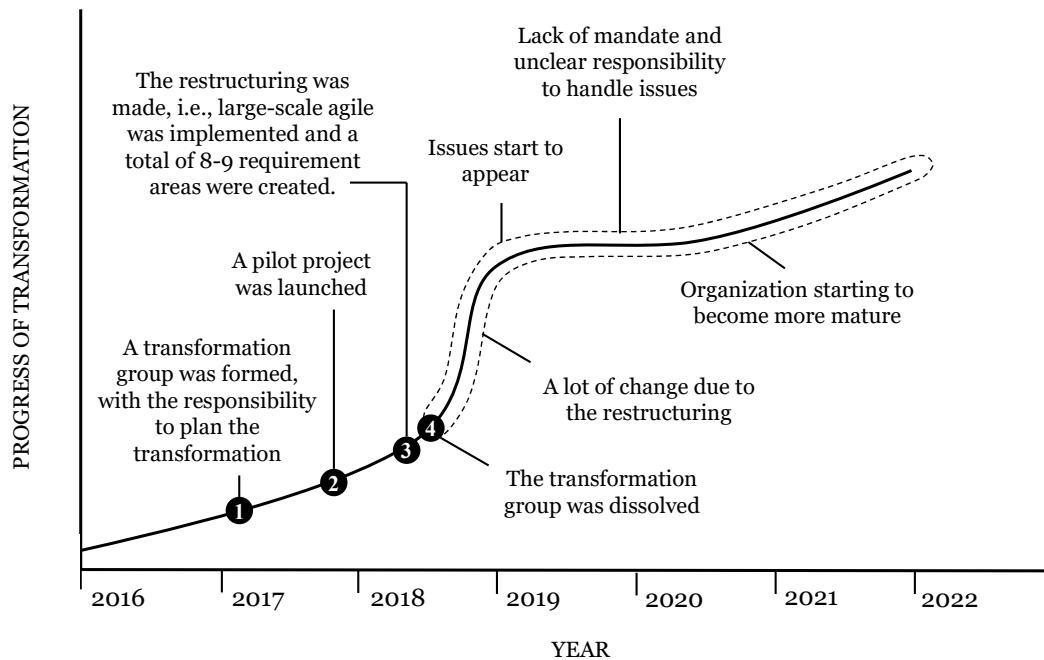
Figure 4.1: Timeline of the agile transformation

4.2 Before Restructuring

Before the restructuring, the development organization consisted of four divisions that were based on different competences. That is, different divisions consisted of different types of expertise. For instance, testing, algorithms and more. This type of division not only led to division based on expertise and competences, but also a more sequential development flow. One example of this was given by SE1, which explained that when components in the products required competence from different divisions, it resulted in a higher level of coordination being required, and the product development became sequential with long lead times. M2 supports the view, and adds that this structure created a waterfall-like workflow which was affected severely by bottlenecks, where issues on one component-level delayed the development as a whole. Additionally, AC4 adds that the company had grown in the years prior to the restructuring, and considers it an essential factor in the prior way-of-working being insufficient. This is due to the previous structure making communication and decision-making difficult, with people shuffling information, and having to include people above and below in the hierarchy to make some decision.

According to AC2, the fact that the four divisions became specialized in different areas, there was a need for a lot of coordinating roles to make it work. An example

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of this is of one interviewee being responsible for a little more than 100 people, as well as being responsible for managing communication for the group as a whole, which included a large workload. AC2 further explains that some problems with this structure were that there was always pressure to deliver on time, that the feedback to the development team was slow, and that the testing teams had a large variety in terms of workload. However, even though the structure led to more sequential development, there were some agile processes as well in their work methodology.

4.2.1   Work Methodology

DEV1 explains that they mainly practiced Scrum in the teams, where they did retrospectives, daily scrums, sprint demos and more. However, according to DEV1, these practices were not too developed and did not involve so much "brainstorming", but rather more standardized. AC4 also believes that even though they followed part of agile methodology, as an organization they did not act agile. One example of that behavior was the sequential workflow, but also the focus on simply applying agile practices, rather than values such as cross functionality and self-organization.

> *"What do you call it, fake agile or something? Where you in the organization as a whole has it rather hierarchial. Where you have your responsibility, and your bubble of responsibility there. It works in many ways, and it of course has its benefits as well... ...But within the team, there you used some sort of scrum-based process. "*
>
> — AC4

The issues with this approach arose when the company increased in size, and you were unable to keep track on everything going on. It resulted in a lot of dependencies, and lead times increasing. Due to this, the top management started to pressuring for change, where the perception of AC4 is that management thought things were going too slow. This resulted in management pushing for a new way of developing features. According to AC4, many development teams had a similar perception, that the current approach was messy and also pressured for change.

4.2.2   Idea for Transformation

According to SE1, the idea for the agile transformation started before any formal initiative was launched. M1 support this view, and believes that the idea grew from the grass root level. According to SE1, there was a group of people that were more enthusiastic about agile, and worked on persuading the management that it was a good idea through, e.g., courses and book clubs. SE1 believes that there were multiple forces pushing for agile. First, there was some interest from the management side of things. Second, was the drive from certain people, wanting to transition to more agile practices, driving the agile transformation from the bottom-up. M1 explains one such event. M1, another manager, and two team members in the organization

participated in a course about LeSS held by Craig Larman[1]. After the course, the group that participated in the course was even more convinced the agile transformation was a good idea, and a list was created with people that needed to be convinced in the organization. Afterwards, efforts were made to convince the management and around 2016 a transformation group was created that were responsible for the agile transformation.

4.2.3 Transformation Group

The formal initiative for the transformation came top-down from the management. Initially, a "transformation group" was set up that was responsible for researching agile and to develop a suggestion for the agile transformation to present to the executive management. To create this suggestion, the transformation group conducted a planning phase during the spring of 2017, where a large focus was on planning the project in itself, but also to communicate and anchor the suggestion in the organization. During this planning phase, the large-scale agile framework LeSS was also selected. LeSS was selected due to the transformation group considered it to be a good fit for the organization. One member in the transformation group motivated the selection of the framework because of its lightweight and minimalistic characteristics.

Initially, only two out of the four departments were to be intertwined and to form a new agile department. However, as the work of planning and preparing for the restructuring proceeded in the transformation group, it was decided that all four departments were to be included. This resulted in the group needing to put more effort into lobbying the initiatives, as more stakeholders had to be persuaded of the benefits of the initiative to allow for the departments to support the initiative.

The main issue which the group had to tackle was going from component-based teams, with specific competencies, working with more niche tasks. To instead feature/function-based teams which managed the whole chain, everything from creating requirements to the value-creating implementation for a specific function, referred to as cross-functional (CF) teams. To succeed with this, M2 claims that the group had to understand these new teams, what roles had to change, and how the change should be implemented. A challenge which they faced was to distribute roles across these self-sufficient teams, with one such example being when the number of testers and people working with requirements was not sufficient to be spread across all teams.

As for the implementation, the group had to, in addition to the structural changes, also consider how to introduce this larger conceptual change, including a significant change of mindset, mainly in terms of teams having responsibility from start to finish. Due to the size of the change, it made it difficult to package and communicate, according to M2.

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[1]One of the founders of the LeSS framework.

The top management on-site were continuously informed about the current status of the project, the direction of the work, what the roadmap looked like, if the momentum is as expected, and if any issues had arisen. Although top management was not part of the transformation group, they acted as part, which had to approve of certain decisions.

Throughout the work in the transformation group, the group members varied between working full-time and part-time with the preparations, meaning that they retained their previous role's responsibilities as well. This in combination with it taking time to reach and inform employees resulted in the transformation group's work taking a long period of time, according to SE1.

4.2.4 Vision and Goals of the transformation

According to AC1 and SE1, there were no formal goals that were communicated during the transformation. The expected gains from the transformation were rather related to what agile development in general can deliver, such as productivity gains, higher quality, customer satisfaction and employee satisfaction. AC2 stresses the issue of the increased size of task queues for the different departments, and the increased lead times as a result of this, presenting it as the most important motivator behind the transformation. M1 believes there were goals, but in the form of values. One such value was that there is a fierce competitive market which required change to survive. Others were focused towards teams, and their way of working, and some towards the organization becoming more flexible as a whole. M1 explains that these values were communicated before the restructuring, as well as after the restructuring (About a year after), using the same slides, to reiterate the message. The communication mainly consisted of large meetings, where everyone in the organization were invited.

According to SE1, the vision of the transformation was different for different people. In SE1's point of view, the transformation was about creating a more efficient and fun organization to work at, as well as creating a more flexible organization, that can adjust to change more quickly. This view is partly shared by AC1, who claims that there were no clear "guiding star" on where the organization were heading, and that the transformation was seen more as an initiative to optimize the product development. Although no concrete idea was provided, AC1 adds that vague directions were provided. AC1 calls these "agile promises", focusing on ideas such as faster, more flexible, and better products etc. Furthermore, AC1 mentions that there were discussions on the vision, where the question of "where do we want to go with agile?" was in focus.

AC4 continues on the vision, where AC4 were aware of it, and observed the implementation of the vision, also known as the restructuring. But AC4 perceived the restructuring as the final work related to the vision, where it was fulfilled with the restructuring.

DEV1 mentions that people in their team were aware that there existed goals and a vision. However, these were nothing you took into consideration in your daily work. Even with this lack of inclusion of it in the daily work, DEV1 mentions that the goals has started to spread throughout the organization, where they have been incorporated more and more into the daily work.

4.2.5 Pilot Project

After the initial planning phase that was conducted by the transformation group, a pilot project was organized. During this pilot project, an initial requirement area was created to test out the agile framework and development methods in practice, consisting of six teams and following a LeSS inspired structure. The pilot project RA was constructed by individuals at the forefront of agile methodologies within the organization, and which had an interest in testing out agile.

> *"Many of the people there [Pilot project] were inclined to try it, and it is surely one of the most important things, to bring along people which truly thinks that it is interesting"*
>
> — Anon

The leaders in the pilot project got an education in LeSS, that was 3-days long. According to an interviewee, this education was beneficial, it had good information, but it was also good to spark discussions and thoughts. One of the leader in the pilot RA had experience from large-scale agile from another large company, and this experience was helpful in the pilot project.

A reason for the pilot project was to provide decision basis for management, whether the agile organization was sufficient or not to tackle the issues in the organization and to see whether it worked in their organization. As for providing a decision basis, it was an emphasis on trying out the rough concept developed by the transformation group. This included: distributing competencies between teams, test concepts, fill gaps in the overall concept and process, and develop insights and education material, in addition to lessons learned. Overall, it is explained that the concept became more specified, providing a source for ways-of-working, merging several sources into one and providing the same information to employees. Additionally, it led to multiple lessons learned. Some of which focused on *why* certain things were done, but the majority focusing on *how* things were done. One interviewee explains that the pilot project was a kind of starting point for the rest of the organization, which was very valuable. Examples of lessons learned are: specifications in the process description and setup of teams. One interviewee sees it as given to do some sort of pilot project. Especially due to providing a smaller scale playground to test concepts out and fill gaps. The interviewee emphasize the importance of having a smaller, lightweight, part of the organization in this process. This is to be able to come to many agreements simultaneously, and to do so quickly.

Shortly after this initial pilot project had been tested, the organizational restructuring was made, and the large-scale agile development was implemented in full scale. However, before the restructuring was implemented, a few more things occurred in organization.

4.2.6 Before the Restructuring was Implemented

At the end of 2017, when the planning group was fairly finished with the planning, it was decided that a role that had major responsibility for the new agile department was needed. This role was a combination of product owner and core development manager, but this person will be referred to as core development manager (CDM). The CDM was also included in the transformation group at the same time. When this person was assigned to CDM, and included in the transformation group, the transformation group was about 90-95% finished. The CDM took the last decisions to deploy the restructuring. At this time, the transformation group mentioned that two things were of utmost importance: Informing people in the organization, and deploying it fast. Before the restructuring, there were quite a lot of efforts to inform the organization about the transformation, mainly through large meetings. This aligns with DEV1's point of view, that explains that there were a lot of information before the actual restructuring, and this information mainly consisted of practical things such as, where will people work, which teams, time plans and more.

> *"Something we said [in the transformation group] was, when we have informed so much that everyone knows about this [the transformation], then we have probably informed 10 percent of what we actually should have"*
>
> — Anon

The other important thing was deploying it fast. The reason for this was because there were areas where some people in the organization were worried about the future.

> *"We need to deploy this [the restructuring] now. Because these people will be worried until they know, some people need facts. We cannot give them facts unless we go there [deploy the restructuring]"*
>
> — Anon

4.2.7 Communication and Information

Throughout the transformation process, open information meetups were held. These were held multiple times and provided participants with old information, new information, allowed for people to ask questions, and enabled an opportunity to raise risks which the organization had identified. According to M2, this helped both teams and the organization as a whole to know what challenges they had to face, with one such example being the shift in mindset.

The transformation group continuously informed line manager about what currently was going on in the transformation, with the purpose of both allowing line managers to have their usual close conversations with new and accurate information and to continuously educate the line managers. The message sent throughout the organization was that of changing things, while retaining the momentum and avoiding issues business wise, although there are multiple difficulties with this approach.

> *"Do whatever you want, as long as it makes things better and that we do not loose any momentum. And everyone which has worked with any change previously, knows that it is impossible [to not loose momentum]. But either way, it is what the organization aims for."*

> — M2

4.2.8 Education

Prior to the restructuring, some roles had to undergo some training. The to be product owners and roles in proximity to them had to go through a lot of external training, as this role had large differences compared to their old ways of working. M2 brings up a pitfall of simply renaming the project leader role to product owner, but the working tasks remain the same. What M2 brings up as essential in the training of product owners is the change of mindset, in going from the more traditional waterfall approach to a more adaptive approach focused on priority. Thereby, the main tasks for the product owners came to be deciding an order in which the product is built, and to decide what best creates value for the customers. Further, education throughout the organization was necessary to allow for people to understand the change. For example, many new terminologies came with the agile methodologies, such as sprints, backlogs, RAs, and CF-teams. And to reduce the barriers of changing, terminology was something which was emphasized.

In preparation for the restructuring, the transformation group also provided education on LeSS, focusing on what LeSS is and its purpose. This education was provided for all employees on the plant, and is described as more or less mandatory, and on multiple occasions.

4.3 Restructuring

The first of May in 2018 is when the restructuring was made, which meant that 7-9 requirement areas (RA) were created, where each requirement area had a line manager (LM), agile coach (AC) and area product owner (APO). In each of the requirement areas, there were about 5-15 teams that were cross-functional to some degree. Moving up the hierarchy, a head area product owner can be found. Next to the head APO, is architecture, that consist of a system architect and a software architect, whose responsible is to support the head APO, as well as have an overview of the development. Lastly, at the top of the hierarchy is the local top management. This restructuring of the development organization is shown in Figure 4.2. Something not shown in the figure was that with the restructuring, several communities were created, and

amongst them an agile community. This community was open for everyone, but all agile coaches were part of it.
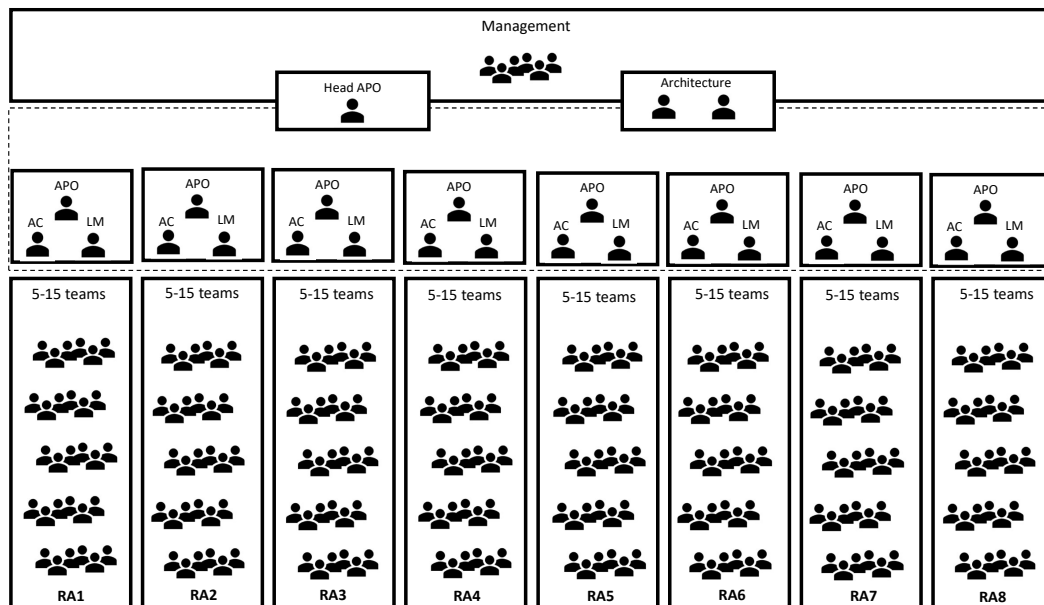
Figure 4.2: Illustration of the restructuring that was based on LeSS Huge

Something worth mentioning is that the whole organization changed at once, and the restructuring was implemented from one day to another. The restructuring was referred to as "flipping" the organization. According to DEV1, the restructuring got that name, because a lot of changes were implemented during one single day. AC4 provide a critical view on this, where s/he perceived the approach as rushed, and that the change was made too abruptly.

> *"The organization was drawn out as they wanted it to be. Then they went for it immediately."*
>
> — AC4

AC4 suggests a different approach in retrospect, to set a vision on what you want the organization to look like in three years, and then to change more gradually over time.

The main focus in this restructuring step was, according to AC2, to start working cross-functionally across the teams and departments. This was amongst AC:s seen as the beginning for the change process, while AC:s mutual belief was that top management believed the project and the change initiative to be finished, resulting in managers underestimating the effort required after the restructuring. AC2 derives this to a pedagogical issue, where management did not understand the scope of the

transformation, where many saw, and still sees, the transformation as solely the restructuring, and not an evolution, as advocated by AC2.

The CDM convinced the top management that the transformation would take at least 6 months to break even when it comes to efficiency. During this time period, CDM had to explain to the top management that the efficiency would be lower to get the buy in needed to actually implement the restructuring.

Additionally, although there had been preceding work to the restructuring, this had not been communicated throughout the organization, resulting in the restructuring being rather unprepared for a majority of the organization, according to AC2. However, AC2 also stresses the critical situation the organization was in before the restructuring, and mentions that finding a balance between optimizing the organization and optimizing the transformation process. Although the organization was not prepared for the change, AC2 believes that it was necessary to push through. Further, AC4 also explains the restructuring to be rather stressed, where a large transition was done hastily.

4.3.1 Communication Channels

With the restructuring, new communication channels had to be established. According to M2, this affected the whole organizations, even top-management on site. This was in terms of them as well having to establish new communication channels and establishing new routines regarding communication.

4.3.2 Process

The restructuring process was initiated with a kick-off occupying a full day. This day was filled with information with several presentations. Amongst these, the plan developed by the transformation group and enforced by the pilot project was presented. This included the new way-of-working, incorporating daily standups, sprints, retrospectives, and synchronizations of retrospectives on a larger scale. Another focus area was that of epics and stories, how different packages of work are broken down into smaller pieces, which in turn are possible to distribute amongst teams. The first day provided a plan and explained what was to be done the following day when it was time to start working again.

The following day it was back to working, but now in a new manner. One main point was the work with how to create epics, and in turn how to break these down to enable distribution.

4.4 After Restructuring

After the restructuring, a number of changes have occurred in the organization, both in terms of pure organizational structural changes as well as individual and team level changes. These changes will be described in this section.

4.4.1 Closing the Transformation Group

After the restructuring was made, the transformation group was dissolved. M1 and M3 mentions that this was a key mistake that was done, for a number of reasons. First, there came up different issues that were not identified in the planning. Secondly, there was no group that could guide the organization in the planned direction. However, an agile community was formed in the restructuring and some of the issues that occurred were handled in this community. M3 explains that the period after the restructuring came with some struggle. And one big reason for this was the closing of the transformation group.

4.4.2 Communities of Practice

Multiple communities of practice were established during the agile transformation. These ranged from an agile community focusing on agile practices, to communities focused on requirements, architecture, and data. In common in all these communities was their purpose, to continuously suggest improvements in terms of ways of working.

Agile Community

When the restructuring was made, an agile community was created. Initially, all agile coaches were a part of this community, where issues in different RA:s could be shared and discussed. One key issue was that it was not clear what type of mandate this group had, and there was also no assigned manager to this group, making decisions difficult. AC1 explains that during the first year to 1,5 year, the agile community had regular meetings where different concepts were discussed. There were no clear guidelines of what the community was supposed to do, it was therefore up to the members of the community to do what they thought would benefit the organization. For instance, "wish lists" were created by the agile community, how people were supposed to work, but it was arbitrary whether these were followed or not, because of the lack of mandate. M3 explains that there are many opinions regarding how the organization should be structured, however these decisions are mostly taken in the management level. M3 and the agile community thinks that workflow and structure go hand in hand, however, this is not the case in practice in the organization. Another issue mentioned from M3 is that the agile community has struggled a bit in getting new people in the community, and that it has been a bit one-sided into who is a part of the community. M3 believes that it would have been better for the transformation if more people across the organization were part of the agile community.

A different view on the mandate issue is provided by AC4, where s/he claims that a variety of roles were active in the agile community, and amongst them managers with mandate to approve of some decisions. Thereby, AC4 had a conflicting understanding, and did not see mandate as an issue, at least not to the same extent. Furthermore, AC4 adds that it was crucial to have this mix of roles, where there was no need for chasing people, making decision-making much smoother. However, according to AC4, resistance remained, especially outside the agile community, although the community overall reduced bottlenecks.

According to AC2, there were not too much systematic change management during the transformation, but rather that the agile coaches took a sort of change leadership role. This partly aligns with AC3, that also agrees that the agile coaches as well as the agile community took a sort of change leader role. Further, AC3 used some change management practices occasionally in the role as, or part of, the change leader. AC3 gives some examples, such as the steps in Kotter's model were used both consciously and unconsciously to drive certain change in the organization. AC3 continues with, another example, that some RA:s performed better, thus, these were used as a positive example to the rest of the RA:s.

Other Communities

There were also other communities besides the agile community. Some other communities were focused on the areas: architect, function and safety, test, data and AI. The biggest community was the architect community. These communities would come to be a forum for people to discuss issues related to a certain field. It allows for experts to retain their knowledge, and for people to continue to learn in a specific field. The aim with some of these communities was to replace the previous silos solely in terms of developing competency and discussing issues.

4.4.3 Matrix Organization Structure

Some time after the restructuring, the organization implemented a new matrix organization structure. This organization did not change the main structure based on LeSS, but it changed how some managers and management worked. This includes two main groups of management. First, LMs which managed and developed ways of working from a top management/staff perspective. Second, a group of managers focusing on the product-related responsibility and how products can be developed and launched to the customers the best way.

4.4.4 Education

Throughout the transformation the understanding of agile, agile methodology, and the agile mindset has increased a great deal. Initially, the understanding was non-existent. Today, four years after the restructuring of the organization, the understanding has spread, although there is much potential left. AC2 estimates that: around 1 person in 30 has a great understanding of agile and the underlying mindset, around half has a good understanding of the methodology but lacks in the understanding of mindset, and that the rest does not care too much about going agile, with a handful outright criticizing and opposing the agile methodologies. Further, the increased understanding of agile was first seen after the restructuring of the organization, in combination with the first structured events for educating employees taking place. AC2 adds that the restructuring also made people take a step back and actually think about the way they are working, which was uncommon prior to the restructuring, where the focus was solely on working hard to manage the promises made to customers. This acted as an initiation for changing the mindset amongst employees.

Facilitating learning through education has been present to a certain degree throughout the whole transformation. Before the restructuring, a number of leaders took part in a course about LeSS, providing a solid foundation in understanding the framework. Shortly after the restructuring, education for the different RA:s was held, introducing the new way of working during a 1-2 hour session. Post this initial introduction, the education was present mainly in smaller scale, sometimes synchronized, sometimes more spontaneous. One such event was an optional book group, which about 20% of the employees attended. Another such event was education for AC in the LeSS framework in the form of a 3-day course. An event held by AC:s where a 3-step education for team-coaches where 1-3 people from each team was included to be introduced and learn about a lightweight counterpart to a scrum master. Almost all learning related to working agile has been present post restructuring, and AC2 sees a great missed opportunity in educating more people before the restructuring, and believes it would have payed-off even short term.

However, although education is beneficial, there are many problems present. AC2 mentions that at times people lack interest and seeing it as mostly waste of times. Further, it is difficult to reach everybody, resulting in the knowledge being transmitted to the interested at first, and then later slowly but gradually spreading throughout the organization.

4.4.5 Task Forces

AC3 mentions the utilization of task forces and "heroes". Task forces are described as teams that are put together by management to solve a certain problem of large importance. For these task forces, a person is selected as a task force leader, that can take decisions and enough knowledge to solve the problems they face. These task force leaders are also sometimes referred to as heroes. They are complemented with one or multiple teams working full-time with the problem at hand. Further, it is common to have daily meetings with customers and being under close observation from top management. A problem with this approach is that people get burned out and faces a lot of stress in these task forces, especially the heroes. However, during the period that AC3 had been there, these type of task forces had been occurring more rarely as the transformation proceeds. AC2 further problematize the issue with creating task forces and the more command-and-control behavior. Where it damages team structures and removes, or go beyond, the standard established ways of communication. It creates issues with, amongst other: transparency, pushing the command-and-control mentality, and moving away from decentralization which is inherent in self-organizing teams. Here, AC2 argues that it would be better long-term, and possibly short-term as well, to not create these task forces and disrupt the daily agile work. This is due to the disruptions risks to damage: the feeling of responsibility amongst team members, the feeling of being trusted with the work at hand, the ability to look outside the area of responsibility, and communication and collaboration between teams. Additionally, it may also make people less inclined to take responsibility the next time similar issues arise, according to AC3. Further, AC3 looks beyond solely this behavior, and considers how this not only disrupts the collaborative inclined agile culture, but also fosters a culture focused on problem-solving, heroes,

and task forces. According to M3, there has been a reduction in hero culture, because the organization has worked actively to reduce it. M3 explains that relying on heroes is a bottleneck in the organization. Today, there is more focus on work packages and prioritization.

M1 has another perspective on these task forces. From M1 point of view, there will always come up things that do not fit the agile organization. One example was a big architectural change how a product was made. To go through with this change, people from a lot of areas were needed and did not fit the agile organization structure. In this particular project, M1 mentions that it was business critical and the customer at hand was very interested. At the beginning, it was tested to not have a dedicated project leader, but M1 mentions that this was not good. M1 mentions that the agile organization is utilized as much as possible, but these temporary projects are probably needed in this organization. M1 also believes that there is a need for roles that have a clear responsibility. One example for this is the task forces, where they first tried to not have a project leader, but this did not go well. Therefore, continued using project leaders for these types of projects.

4.4.6 Customers

M1 mentions that something that has partly changed during after restructuring is how customers are involved. In the beginning, a roadmap was given to the customers based on estimates. These estimates were however not handled together with the backlog and the area product owner, leading to a lowering of priority. Another problem according to M1 was that internal estimates were used, and there were not a lot of risk handling in between. M1 also explains that even though the estimates and have become better, M1 want to try to get more customer involvement through better customer transparency. One example of this is that M1 wants to introduce aspirational and committed requirements to the customers. That is, some requirements that they are unsure if that can promise to complete on time, thus these become aspirational. And some requirements are mandatory, thus they need to deliver that. M1 believes that this type of communication and transparency can be achieved with their customers, but this has not yet been accepted by the management.

That is, some requirements that they are unsure if that can promise to complete on time, thus these become aspirational.

The focus of the agile transformation was on the organization itself, and did to an extent prioritize it over the customer-related changes. First off, the change in the customer phasing organization came sequentially, and was not included in the initial initiative, which also led to this part of the organization not being ready for the change. Second, new communication channels were required, where some previous disappeared due to the transformation. Third, new roles came with the transformation, which was developed without much consideration of the customer organization. This led to questions arising in the customer organizations. Such as: What do we do now? Which, according to M2, depended a lot on uncertainties regarding responsibilities. One such example is of the issue whose responsibility it is

to collect data for test. Another such example is of the change from feature-owners to product owners:

> *"[customers] People were used to be able to talk to feature owners, but suddenly they were no longer there. Instead you should talk to a product owner. [Product owners] They were busy to find their spot in their roles without having a one-to-one mapping of that type of competency, but the responsibility nevertheles..."*

> — M2

4.4.7 Establishing New Roles

Although top management, to some extent, stepped away from the initiative after the restructuring, believing it to be completed, the agile community continued to intentionally create change, plan for it, and manage it. Initiatives driven by the agile community were ones such as creating the role of AC:s. Many of the AC:s were previously scrum masters, which were a temporary role introduced when trying out LeSS. Making the role permanent established the agile transformation. Moreover, the agile community has created multiple new RA:s due to the organizational growth. The community tackled issues on how to structure these, where new boarders shall be drawn, and which teams should be included.

The product owner was another new role introduced with the restructuring. According to PO1, AC4, and M3, this role was very overloaded in the beginning of the restructuring, resulting in them becoming the new bottlenecks. This was partly because the role was new in the organization and not everyone of the product owners had so much experience of agile. Another reason was because of the sheer responsibility, having to be responsible for many teams in a requirement area. PO1 says that to adjust this unbalance, new roles were introduced to take some responsibility. Another thing that helped was that all product owners got a 3-day course for product owners. According to PO1, this was a way for product owners to sync between each other, which was very beneficial. However, for PO1, the information was not so new for PO1, but it was a chance to reflect. For product owners with less experience, however, the information may also have been beneficial.

The RA:s took it upon themselves to solve the issue with overloaded product owners, resulting in varying solutions. Some established support roles, to assist in parts of the role. Others added a secondary area product owner, distributing the responsibility amongst two employees. AC4 suggests a possibility of starting on a smaller scale, allowing for people to manage smaller RA:s and to learn from this.

> *"Something you could have done differently is to have had smaller requirement areas in the beginning. Both for coaches [AC's] and product owners, to get less [responsibility], to get to work with two teams as a beginning and mature with that. Once the teams starts to be more self-sufficient, then add more teams as time is freed up."*

> — AC4

4.4.8 Recruitment

After the restructuring was made, a number of new managers were employed, many who had experience of large-scale agile development, and going through a large-scale agile transformation. With this change of managers, AC1 believes that these managers were more focused on their employees, and not only on the products and deliveries. However, since that change, AC1 says that he has not seen much change in leadership. In contrast, AC2 identified differences between managers, where some, mainly those in close contact with the development organization, started to more and more understand what agile is about.

The shift in culture can also be identified in new priorities when recruiting new competencies. Previously, the focus has been on technical competency, and while that focus remains, there is a new emphasis on people driving collaboration and communication between teams. Whereas the organization has identified a lack in this area, where more focus has to be on the team's surroundings, and how it interacts with other stakeholders, such as the product owner. This is according to AC2 dependent on that these competencies are of utmost importance when utilizing the technical competency. An example for this was one team which consisted of multiple people with high level of technical competencies, and one person with both the technical competency and with focus outside the team, on collaboration and communication. Once this individual with a mixed set of competencies left the team, the productivity of the team dropped significantly, displaying the impact of a mixed set of competencies.

M1 also sees a shift in priority when it comes to recruitment. Today leaders need experience of agile, and e.g., project leaders, probably does not fit this environment. For instance, the leader need to understand how priority is the driver of development, and that product owners drives that priority.

4.4.9 Top Management Distancing Themselves

When it comes to the local top management, a perception shared by many interviewees is that the involvement have been low during the transformation, and at times non-existing. However, SE1 says that the interest have been varied between different managers. The lack of involvement from top management could lead to problems or conflicts. One example was that the management could introduce something new, such as a role, without discussing with the transformation group or the agile community. This, in turn, could complicate things if the role did not fit the development organization and the agile methodologies and mindset. The possible cause and result of such conflicts will be further discussed in Section 4.5

Another view is that the management did not fully understand what implications the agile transformation would have on the organization. According to AC1, and SE1, their view is that if the management knew exactly what they agreed to with the transformation, they would never have done it. What this means is that parts of management did not realize the extent of the transformation, and that there will

be a period of adaptation where the organization will have a lower output. This is exemplified with M1 that explains that a promise that was given to the managers that approved the transformation was that in 6 months the new agile organization was supposed to deliver in the same pace as before the transformation. However, in practice, this took a lot longer to achieve. Similarly, AC2 sees similar risks, and adds that greater management involvement early could result in watering down the initiative, risking it to fail. M1 also shares this view that the top management may not have understood the implications of the transformation fully. This has also been shown that top management may not always back up the transformation when things get heated. However, M1 has handled this gap between top management and the agile organization, to protect the agile. M1 also explains that they may not have succeeded to get enough top management involvement. AC4 adds another view on management perception, where they did not quite want to understand the time it would take, the temporary drawbacks, and the length of the agile transformation process. Instead, AC4 advocates for a more continuous process, where new lessons learned are found, and adjustments made.

These issues might depend on the habits of managers, and how they have been working all the years prior, where centralized decision-making has been the standard. With the changes, even amongst management, spreading, AC2 identified that several managers has started to see the benefits of "letting go" of responsibilities, leaving more room and mandate for the self-organizing teams. This understanding has spread much more at the mid-management level, with line managers, where they work closer to the operations, and thereby has to take part of the agile. One such an example is the line managers, together with agile coaches and product owner, forming the management groups for each separate RA, and putting line managers in a position where they constantly are in contact with agile. These managers, together with the fresh blood brought in with agile experience, established a foundation which ensured that the organization, and the individuals at large, does not go back to old habits, according to AC2.

From a change management point of view, AC1, believes that the transformation has been done half-hearted. What has been lacking, according to AC1, is an evangelist that engages people in the organization and truly believes in the change. Having an evangelist was not something mentioned by other interviewees, but the lack of buy-in in both employees and management was mentioned by M1 and AC2. What AC1 believes is that an evangelist could have helped to achieve more buy-in in the organization.

4.4.10 Development of Teams

The developers faced many challenges with the change. One such example is of the system department, which managed requirements. What previously was a group with experts in the field of gathering requirements, breaking them down, and developing a product design which can be implemented was now split, and experts distributed across different CF-teams. What was a challenge in this transition was for people to understand that it was not solely one expert's responsibility to manage

a specific task, but rather the team as a whole, with an example being requirements. According to M2, this issue was something which was managed, although they were unsure about specifics.

> *"One colleague which was very much so,... a pretty central person which knew the system well. Got a lot of questions and had a hard time focusing on the job, prior to the organizational change. But afterwards he felt that the could focus on our part of the product in a completely new way"*

> — AC4

AC4 identified resistance amongst the requirement department, where it was difficult to get these employees onboard. Agile was new to them, and they had a lot to do at the time of the transformation. An understanding of having to leave space in the schedule to fit activities related to transformation was lacking. Additionally, in development teams, AC4 identified fear of loosing expertise. SE1 saw a similar tendency, where people wanted to work with their current colleagues, and to lose expertise. SE1 adds that by mixing people in the teams, the scope which they had to manage increased. With this, it resulted in many systems having to mix, requiring the group members to know and be able to work with a wide variety of systems.

> *"People were very afraid to loose expertice. People worked in areas of new development [of software and products]. Here, a feeling of that it is by working with this nische technology each day that makes you good at it. Now everyone will become generalists."*

> — AC4

AC4 talks about this issue as a fear for experts to leave their current environment and fear of loosing expertise. This issue was met by having discussion, especially the change leader, and tried to cover the needs which arose. One solution for this resistance was to educate people on communities of practice and their purpose of developing knowledge, which has been described in Section 4.4.2.

4.5 Development of Culture

The following section will present descriptions of the culture at the case company. First, the culture that exist today will be elaborated upon. Afterwards, some differences from the culture before the transformation, compared to today, will be presented. In the following subsections, each characteristic will be described more in detail.

During most interviews, the interviewees were asked to describe the culture and what values are important in the organization today, as well as before the transformation. This resulted in some common descriptions, as well as some differences. The characteristics of these descriptions are presented in Table 4.2 for all interviewees that

were asked about culture. The table is divided in three sections: before, both and to-day. *Before* refers to characteristics from before the transformation, but does not exist to a large extent today. *Both* refer to characteristics that both existed before and today, however, some may have changed a bit over time. *Today* refers to characteristics that exist in the organization today, but did not exist profoundly before. AC3 and SE are not included in the table, as these interviewees were not asked about culture in their interviews.

Table 4.2: Description of culture based on similar characteristics

Characteristic	Role							
	AC1	AC2	AC4	M1	M2	M3	PO1	DEV1
Before								
Experts	x		x		x	x		x
Both								
Helpfulness		x		x	x	x	x	x
Customer focused	x	x					x	
Innovative					x	x		
Problem solving	x	x						
Today								
Agile				x	x	x	x	x

4.5.1 Experts

Previously with the old structure, with more specialized roles and teams, the sequential development process could lead to issues where different teams were blamed if something went wrong. DEV1 explains that before there sometimes occurred issues where different specialities/teams were blamed if something went wrong in that particular part of the product. With the new structure, this appears not to be an issue. M2 and M3 have the same view of the issue with blaming.

Another characteristic described by AC4 was that before the transformation, there was a form of pride to your role, and there was more hierarchy. According to AC4, a challenge with the transformation was for these experts to switch to more generic roles.

4.5.2 Helpfulness

AC2 also identifies another part of the culture, which he describes as "very helpful", and mentions that similar conclusions has been drawn from independents audits on the organization. To exemplify, it is a low degree of leaving issues to others, solely because it is not your specific responsibility, instead people help each other out. This can be derived to depend on an overarching goal which assists in employees having a sense of unity, and thereby helping each other out and sharing information, especially within the teams. According to AC2, why it works well in the organization so far is heavily dependent on this helpful culture, which has been present way before the agile transformation initiative. However, what has been identified is an increased level of collaboration, both within teams, and between teams, possibly further enhancing this helpful culture. This helpful culture is also mentioned by M1, as a key part of their culture.

4.5.3 Customer Focused

Another view of the culture, according to AC1, is that the market of the case company is characterized by having few large customers, and with contracts being rather encompassing, resulting in the case company to have few large customers. This has led to behavior within the organization, e.g., that the customers comes first at almost any cost. For instance, if a delivery has been promised to a customer, rules and processes may be skipped just to make sure to meet that delivery. This is something, according to AC2, that likely remains from the early days when the firm at times only had one customer, which they had to retain no matter what. According to AC2, it is positive in terms of providing a heavy focus on customers. However, what is harmful is the extent of the customer focus, where it can even be described as self-harming. This may result in issues more long-term, both for the case company, and their customers. For example, ensuring that certain delivery deadlines are met can result in trade-offs in the software, such as its modularity, scalability, and maintenance. It can also result in issues where people get stressed and burned out if the demands are too high.

4.5.4 Innovative

M2 described a part of the culture as innovative and an immense drive to take on challenges. M2 also explains that the products are complex and innovative, so this type of drive is needed in this organization. M3 also emphasize innovation and drive as a large part of their culture. A lot of people in the organization have a technical background and have an engineering mindset.

4.5.5 Problem solving

AC2 emphasizes that many in the management, and throughout the organization, originates from a technical heavy background, where a lot of focus is on product development, problem-solving, and engineering having great impact on how the culture is formed. This results in a lacking focus from management on the organization, and how it functions. These cultural aspects affect how management behaves, and

is according to AC2 the cause of many issues related to management introducing conflicting initiatives to the agile transformation.

4.5.6 Agile

One differences mentioned by DEV1, is that there is more mandate in the development teams today. DEV1 believes this is mainly because the developers have more of an overview of the product and the need than before. Also, DEV1 thinks that there are not as many top-down decisions regarding the products as there were before.

DEV1 believes that after the restructuring, there is more acceptance to change in the agile organization. For instance, the sprint length has been adjusted for some teams and requirement areas. Another example, is that many teams have switched to Kanban instead of Scrum. The reason for this, according to DEV1, was that some teams struggled to finish increments at the end of the sprint, and that the practices in Scrum did not fit all teams great. Using Kanban instead, solves some of these issues, and therefore a number of teams have switched to that.

M1 has another view when it comes to agile. Even though M1 believes in the agile organization and protects this type of organization, M1 also believes that there are other challenges that are not covered in agile. Some examples are organizational development, communication, and project management challenges. M1 believes that some are too idealistic when it comes to agile, and does not include these other types of challenges. M1 also points out that agile is definitely right for this organization and have been very beneficial, but it does not solve all the problems the organization has.

> *".. it is not that I do not understand [agile], it is just that I [try to] see the whole picture. And agile is not the solution to the entirety of the problem"*
>
> — M1

Chapter 5
Analysis

In this chapter, we aim to analyze the empirics through the analytical model presented in Section 2.4. First, we present a discussion on the case organization's success with the agile transformation. With this, we aim to provide insight in how we view facilitators and inhibitors, and in turn how they will be identified. Second, the cultural analysis will be presented, where the three levels of culture (Schein, 1991; Schein, 1996; Schein, 2010) will be in focus, assisting in identifying facilitators and inhibitors related to culture. Afterwards, the empirics will be analyzed with the change management theoretical lens in focus, identifying facilitators and inhibitors, mainly connected to change management, but some touches upon culture as well. Lastly, the previous two sections will be summarized and discussed, resulting in facilitators and inhibitors of agile transformations.

5.1   Successful or Not?

Before diving into the analysis and starting to identify facilitators and inhibitors, we would like to introduce a discussion on the success of the transformation. This is to assist in understanding what facilitators are pushing towards a successful transformation, and what inhibitor the change in that direction. The discussion will be initiated with the perspectives of a few interviewees, and what emerges will be discussed based on our input and perspective on the transformation.

First off, AC1 is neither classifying the transformation as a success nor a failure. Instead, s/he sees the transformation as something which so far has done a lot of good for the organization, although with a lot of difficulties along the road. However, AC1 believes that it is first after the transformation has been finished that you can look back and decide if it is a failure or a success. This, in addition to their belief that the transformation is still ongoing, makes the classification difficult.

Second, AC2 sees the transformation as successful. Already day one s/he identified that many barriers in the organization were torn down, easing the way of working. Furthermore, s/he believes that there is currently no way that employees will fall back to previous ways of working. Another aspect is that of decentralized decision-making, central to agile, something which has successfully been implemented and is an issue AC2 values highly. Of course there have been many challenges, how-

ever, AC2 claims that the organization has not faced any large setback yet, and no customers has withdrawn. Lastly, AC2 sees several more factors which leads to the success. Amongst these are that an effective organization has been built, characterized by collaboration, openness, and helpfulness.

Thirdly, AC3 provides the most critical view. Based on comparisons to previous agile transformation AC3 has seen, it can be considered so-so. It has neither been a failure nor success, with things working out quite okay, s/he emphasizes the significant potential which remains. Such as not implementing task forces, allowing the organization to remain as is and avoiding interruption of the new way of working. However, AC3 still sees the new way of working as much better than before, and are certain of this.

Lastly, SE1 sees the transformation as a success. S/he believes the organization has become good at adapting and managing changes in priorities, and describes it as lightweight. Furthermore, SE1 emphasizes that people seem to feel at home in the new organization, even those that previously had been reluctant to the agile transformation. SE1 believes that they have found a good balance between directives and the freedom of employees. Although this overall very positive view, SE1 mentions that many issues remains, both issues which has arisen due to the agile transformation, but mainly issues which were present even prior to the transformation.

To summarize, AC2 and SE1 are considering the transformation as a success. AC1 and AC3 are a bit more skeptical, but their identification of numerous benefits remains, and they classify the transformation somewhere in between being a success and a failure. Overall, the transformation has succeeded in making the organization more agile while retaining the business success to a high degree, even directly after the restructuring. However, the organization has faced many setbacks, such as internal resistance, lack of understanding, and bringing customers along. Although these are noticeable challenges, it is not something which has directly pushed the organization back, nor resulted in any major business losses, as AC2 claims. By this reasoning, the agile transformation is considered a success, and the focus on a successful agile transformation is that of becoming more agile and creating benefits for the organization, while managing challenges and avoiding major setbacks in the change process.

Before concluding, we would like to touch upon two approaches to categorizing a change effort's success or failure. First, focusing on the outcomes, puts more emphasis on the outcomes and whether these are beneficial or not for the organization. The second approach emphasizes the process, focusing on how smooth the transformation has been and to what extent challenges has appeared. We have taken more of an outcome focused approach, with putting a high value on the benefits seen from the transformation. However, by taking challenges into consideration, and identifying the lack of major setbacks, we do not disregard this aspect. Thereby, we consider how different aspects of the transformation has affected its outcome positively or negatively. This approach has its roots in our understanding of all change efforts facing

challenges, since change is rarely easy, and that thereby an emphasis should be put on the outcomes rather than the process, without neglecting the process completely.

With this approach, we consider how different aspects has facilitated or inhibited the change towards this new agile organization. We do consider the process and challenges which has arisen, and take the management of these into consideration as well. Although, the emphasis is on how what has assisted in, or hindered, the organization reaching its current state.

5.2 Cultural Analysis

The focus of the cultural analysis is on the culture today, but some differences from before the transformation will also be described and discussed. Furthermore, only things that are related to agile and the agile transformation will be covered in the culture analysis. First, artifacts from the empirics will be briefly presented. Secondly, values and beliefs will be described and analyzed, connecting to the artifacts. Thirdly, basic assumptions are expanded upon. Afterwards, some parts that are related to culture, but do not directly fit in the three levels of culture, are covered.

5.2.1 Artifacts

There are many things in the case company that could be interpreted as artifacts, but the focus is on things that are connected to agile and the agile transformation. Schein (2010, p. 25) explains the artifacts as ".. all the phenomena that one sees, hears, and feels when one encounters a new group with an unfamiliar culture". Schein (2010) also gives multiple examples of different kinds of artifacts which has been used for classification. In Table 5.1, descriptions of artifacts from before the transformation are described. In Table 5.2 artifacts in the organization today are presented.

Table 5.1: Artifacts before the initiation of the transformation

Artifact	Description	Type of artifact
Task forces	Project teams, with a project leader, often put together by management to solve problems of large importance.	Visible behavior (Schein, 2010)
Component based structure	Before the restructuring, the organization was divided by different competences and expertise, this also led to more sequential work and many coordinating roles being needed.	Organizational chart, Role definitions (Schein, 2010)
Traces of agile practices	There were some traces of agile, even though there were few agile teams in the organization. The planning consisted of planning phases and sprints, which indicates more iterative planning.	Visible behavior (Schein, 2010)

Table 5.2: Artifacts after the initiation of the transformation

Artifact	Description	Type of artifact
Task forces	Project teams, with a project leader, often put together by management to solve problems of large importance.	Visible behavior (Schein, 2010)
Communities of Practice	A community to discuss issues concerning the agile organization, all agile coaches were a part of the community. Other communities were also created after the restructuring, e.g., test, safety, AI.	Organizational chart, visible behavior (Schein, 2010)
Transformation group	The group that planned the transformation and was dissolved at the restructuring.	Formal descriptions and visible behavior (Schein, 2010)
Structure based on LeSS	After the restructuring, the development organization was restructured based on LeSS Huge	Organizational chart (Schein, 2010)
PowerPoint slides with values	Some values were communicated through information meetings and PowerPoint slides to explain why the transformation was needed	List of values (Schein, 2010)
Pilot RA	Before the restructuring was implemented, a pilot requirement area was created.	Formal descriptions and visible behavior (Schein, 2010)
Agile practices	E.g., sprint planning, sprint retrospective, daily stand up, Scrum, Kanban, epics	Visible behavior (Schein, 2010)

As illustrated in Table 5.1 & 5.2, the artifacts in the organization have changed substantially. Though, as Schein (2010) explains, this level is hard to decipher without reflecting on the underlying values. Therefore, artifacts will be touched upon throughout the entire cultural analysis. However, what can be seen thus far, is that there have mainly been structural changes in the organization. These structural changes have also changed the workflow, going from a more sequential workflow to more iterative. It has also changed role definitions and reduced the need for coordinating roles. Another observation is that after the restructuring, a temporary artifact occurred in terms of the pilot RA. A final observation is that task forces existed both before and after the initiation of the transformation.

5.2.2 Espoused Beliefs and Values

Just as artifacts have changed over time, when it comes to beliefs & values, these have also evolved. Beliefs and values are identified by focusing on descriptions of the culture that are contested in the organization today, i.e., people both agree and disagree on certain values (Schein, 2010). It is also common that beliefs and values will predict behavior in the artifact level (Schein, 2010). Thus, artifacts that can be connected to beliefs & values will be discussed. The analysis will focus on identifying facilitators and inhibitors, by analyzing what values & beliefs and artifacts inhibits or facilitate change. Also, things that conflict with agile will also be discussed to understand what effect this has had on the transformation.

Customer is Always Right

One value & belief in the culture is being very customer focused, sometimes to the degree that it is harmful for the case company. For instance, AC1 explains that if a delivery has been promised, processes might be skipped just to ensure that delivery. In the case of the agile organization, this could mean that people in teams are pulled from their teams and priorities and in a way forced to undertake new priorities. According to AC2, this behavior is likely the result of having few large customers that have large influence on the case company. AC2 gives more depth into this, as in the early days they only had one big customer, which they had to retain at all cost. This customer focus has continued during the transformation, and still exist in the culture today, as a value. In agile, close customer collaboration is desirable (Fowler, Highsmith, et al., 2001; A. Moran, 2015), but in this case, it is more aimed towards making sure deliveries are met based on a contract, rather than collaborating throughout the process. This contract based collaboration is something the agile manifesto advise against (Fowler, Highsmith, et al., 2001).

Another aspect is the difference in how customers operate compared to the new agile organization, which creates issues for the agile transformation and closer customer collaboration. According to M1, most of the case companies customers use more traditional project methodologies such as waterfall, and does not have a lot of agile experience. A. Moran (2015) explains that it is common to project an interpretation based on your own experience. Thus, if the customer lacks agile experience, it can be harder for them to understand or see the value in it, and it may seem unorganized from their perspective. The difference in customers methodologies leads to conflicts with the new agile organization in the case company, and interfaces between the agile teams and the customers are used. However, these interfaces make it challenging, as it relies on good estimates from the agile organization to ensure that deadlines are met in the contracts. According to M1, this is something that the case company have struggled a lot with, but have also worked on improving. The issue with difference in context also relates to the challenge of integrating non-agile parts of the organization (Dikert et al., 2016; Kalenda et al., 2018). This challenge refers to internal functions in companies, which in the case company are, e.g., the interfaces between customers. However, the reason why the interfaces are partly because higher management are careful to damage the customer relationship by changing how they deliver. M1 be-

lieves that they could be even more agile and collaborative with their customers, but this is not something that has been approved by top management yet.

AC1 also explained that the customers are generally large and few, and are characterized by large deliveries that occur more rarely. This is connected to the automotive industry, where there are a number of larger players, thus making customer relationships crucial. Few powerful customers on the market can also affect the competitive landscape, as there are fewer customers to choose from, making it even more important to retain good relationships. The automotive industry also comes from a more traditional product development background for creating cars, where today the trend is going more towards integrating software in cars. This can lead to a general shift required by the companies in the market, where many go from more traditional methodologies such as waterfall, to more agile ones when software is involved, which is also the case in the case company.

To sum up, the case company is very customer focused, but does not collaborate with customers in an agile way. Furthermore, the customers' difference in methodologies are difficult to manage, and interfaces are used between the agile organization and the customers. These differences partly exist because of the context of the case company and its customers, and how it has changed over time. However, what can be seen is that how customers are handled in the case company are problems that inhibit change and the agile transformation overall. Thus, we connect this to the value customer is always right, and view this as an inhibitor for the transformation.

Seeing the Transformation as a Project

A common perception among multiple interviewees was that the management did not fully understand the extent of the transformation. There were efforts in terms of educating management on agile and why the transformation was needed, as mentioned by SE1 and M1. However, M1 says that they did not achieve as much buy in from the management that perhaps was needed. The lack of understanding in parts of management has led to issues that conflicts with agile and the agile transformation. For instance, one example of this is the artifact transformation group, or rather the disbanding of this group once the restructuring was made. M1 points out in retrospect that this was a mistake because many issues arose afterwards, many related to the transformation group's previous responsibility, and who was responsible for these was not clear. The lack of understanding, per se, may not be a problem, but the actions that may occur because of it can at times be problematic, as exemplified with the transformation group.

Management related issues are one of the more common challenges in the literature on success factors (Dikert et al., 2016; Kalenda et al., 2018; Naslund & Kale, 2020), where, e.g., management support is highlighted as the most important in the review by Naslund and Kale (2020). Vodde et al. (2022) also highlights that the best support from management, comes from self-education. In this case, even though there were efforts to gain buy-in from management, there was a lack of buy-in which behavior from management suggests. The lack of understanding can be connected to that

the buy-in of management was not enough, and that the efforts of the transformation group were not sufficient. It also suggests that self-education could have been a way to increase buy-in, in managers, as suggested by Vodde et al. (2022). Connecting back to the three levels of culture and what kind of values & beliefs are at play here. Throughout the organization, and especially in the management level, instead of seeing the transformation as an evolution, many saw it as a project with an end date. Also, the lack of management understanding of the transformation have led to initiatives that conflicts with the transformation. Thus, we see the value seeing the transformation as a project as an inhibitor for the agile transformation.

Hero Culture

Hero culture, and the beliefs & values related to this, have been a problem even before the transformation in the case company, according to several interviewees. Connecting to values & beliefs, the hero culture, led to values such as certain people, i.e., heroes, always were the ones to solve problems and issues. Heroes are also closely related to when the organization consisted of expert-groups instead of cross-functional teams. One of the reason why heroes existed was partly because of their deep knowledge in certain areas, but also because of their drive to solve issues. As M3 mentioned, the heroes were often people that were very highly valued in the organization.

However, these types of values conflicts with agile values, as you want cross-functional teams to solve issues at team level, not only certain individuals (A. Moran, 2015; Fowler, Highsmith, et al., 2001). Prior to the restructuring, it was common to ask heroes, individuals, for assistance, putting high pressure on these individuals. After the restructuring, more emphasis was put on teams to solve issues, rather than individuals. However, utilization of heroes still occurred, but in the form of task forces, and leaders of task forces. Dikert et al. (2016) highlights two challenges that corresponds to this problem: management in waterfall mode and reverting to old ways of working. Task forces are put together by management, showing some different values & beliefs on how things should be solved in the organization. Reverting to old ways of working, is exemplified by reverting to values utilizing heroes to solve issues. The artifact of task forces also counteracts the agile organization and agile ways of working. Furthermore, AC3 exemplifies a more long term problem with hero culture. As it works against the new agile organization, it fosters a culture of heroes and task forces, rather than utilizing teams and the agile organization.

Furthermore, from an agile perspective, cross-functional teams and self-organization are emphasized as important in agile (Fowler, Highsmith, et al., 2001; Vodde et al., 2022; Schwaber & Sutherland, 2011). Having heroes that solve difficult problems counteracts the use of cross-functional teams and their self-organization. Another issue with hero culture is that task forces conflicts with the priorities made in the agile organization. In Scrum and LeSS, backlog prioritization and the role of the product owner is an essential part of the frameworks (Schwaber & Sutherland, 2011; Vodde et al., 2022). Utilization of the product owner creates a different type of organization where priority becomes a key driver in the organization. AC2 mentioned a problem

that task forces creates with team members feeling that their work is not trusted, and what they are doing is not sufficient. When task forces are utilized, it creates a conflict with the agile organization. Another issue is that it overrides the agile organizations' priority. As AC2 argues, this type of disruption is hurtful mainly long term, as it undermines the agile organization, and perhaps short term as well, interrupting teams and the daily work. M1 bring out another perspective that these types of projects are necessary in their organization. One reason could be that a certain project does not fit a specific RA, meaning a new team have to be formed. Another perspective is that task forces are an adaptation in the agile organization, to fit their certain needs and context. While this could be the case, it still undermines the agile organization and the product owner role in terms of priority.

Since the values connected to hero culture conflicts with fundamental agile values, and also task forces works against the agile organization, we see this as an inhibitor for the transformation.

Being Agile Rather Than Doing Agile

When it comes to the agile values and mindset, the organization has developed during the transformation. M1, M2, M3, PO1 and DEV1 mentioned agile as a characteristic of their culture today, which was not a common description before the transformation. Of course, these are the interpretations of the interviewees, but there are a number of things that support that the organization has adopted more agile values and practices compared to before the transformation.

First, there have been a shift in recruitment, where agile experience is seen as something valuable to better fit in the organization. This is important, because as Jacobsen et al. (2014) points out, recruitment is a way to manipulate the culture. Secondly, is the increase of mandate in the development teams. DEV1 points out that today the development teams have more mandate than before the transformation, when it was more top-down decisions. This is interesting, as before the transformation there were agile practices but perhaps not a lot of agile values. This can be compared to the difference described by (Moreira, 2013), of "do Agile" versus "be Agile". Thirdly, Dikert et al. (2016) mentions several success factors connected to mindset: concentrating on agile values, cherish agile communities, and aligning the organization. All these can be found in the case company's transformation. The shift from specific agile practices to following agile values can be identified today in the culture. One example of the organization now being more agile is the change of agile practices that have been done in the organization. Previously, the teams mainly practiced Scrum, but today a lot of teams have transitioned to Kanban instead, as this fitted them better. The agile communities have also had a positive impact on the transformation, as there had been a lot of education and coaching to support the agile values.

Lastly, the organization is more aligned with agile today than before the transformation. For instance, there are less coordinating roles and sequential workflow, which were two artifacts before the transformation. This is mostly thanks to the change of organizational structure that come from the restructuring. However, there have also

been a number of adjustments since the restructuring, such as re-distributing line managers, showing reflection and continual improvement. Reflection and continual improvement is mentioned as an agile value (A. Moran, 2015), and also a part of adjusting agile practices to what best fits the organization. Aligning the mindset and culture with agile is seen as important in agile transformation, and to focus on values rather than practices (Moreira, 2013; Dikert et al., 2016; Kalenda et al., 2018; Naslund & Kale, 2020). By focusing more on agile mindset and alignment, rather than specific practices, have facilitated the transformation and promoted change, e.g, with the switch from Scrum to Kanban. Thereby, we see the value of being agile rather than doing agile as a facilitator for the transformation.

5.2.3 Basic Assumptions

Something mentioned by most interviewees (AC2, M1, M2, M3, PO1, and DEV1) was helpfulness as part of their culture. This characteristic was also present before the actual transformation and seem well rooted in the organization. Helpfulness was also not contested by any interviewees as a value, thus it is seen as a basic assumption. Although not directly connected to agile, AC2 believe this has helped during the transformation, as people help each other when things are difficult. Furthermore, the helpfulness part of their culture aligns well with collaboration and openness, often emphasized in agile (A. Moran, 2015). It was also mentioned by DEV1 that there have been an increase in amount of collaboration both within teams, and between teams. Collaboration within the teams are, in a way, managed by the structure of the organization. You have to collaborate in the team you work in, it is essential in the daily work. However, collaborating outside of teams is not something mandatory, but as DEV1 explains, something which provide great insight. Both in sharing their own, and taking part of other teams experiences in the RA. In this case, people want to help out each other, thus it may encourage more collaboration. However, it is hard to say whether helpfulness was a facilitator/inhibitor for the transformation, but it appears to have had some positive effects rather than negative.

5.2.4 Overarching Analysis of Culture

In the previous sections, a number of facilitators and inhibitors related to culture have already been identified. Next, an overall analysis of the three levels of culture will be made, as well as analysis of things related to culture but which do not directly fit in the three levels model.

Three Levels of Culture

As Schein (2010) explains, many things in the artifact level can be related to underlying values & beliefs, this was also apparent in this case. For instance, the value customer is always right and hero culture, could serve as one explanation why some task forces were initiated, especially in critical projects or to meet deadlines for the customers. Another value, seeing the transformation as a project, is related to how the transformation group was handled and that it was dissolved. There were also initiatives and efforts beneficial for the agile transformation. For instance, the value of being agile rather than doing agile can be connected to the artifacts communities

of practice (mainly the agile community) with continuous improvements on ways-of-working, and different agile practices in displaying an adaptability in ways-of-working.

One observation that was made in the artifact analysis (Section 5.2.1) was that there is a large difference in artifacts before the transformation compared to today. This is reasonable because of the considerable structural changes that were made in the organization, which also changes the agile practices. The change in artifacts shows a strong commitment to the transformation, something that was mentioned as a success factor (Dikert et al., 2016). However, this does not entirely explain the change of value to being agile rather than doing agile. We believe there are a few things that has led to this cultural change in values. In Schein (2010) model for managed cultural change, learning is an essential part. The artifacts communities of practice, and pilot RA all include some form of learning. Furthermore, the pilot RA served as a practice field and role models, step 5 and step 6, mentioned by Schein (2010), to create cultural change. The fifth step in Schein (2010) is to provide practice fields, coaches and feedback. This was mainly achieved by agile community and the agile coaches, that took the role of providing a practice field and education to people in the organization. Because of these reasons, we believe that both the pilot RA and the communities of practice facilitated the transformation, mainly in terms of mindset shift and cultural change. Also, the commitment with structural changes and learning initiatives both signals a strong commitment to the transformation, which we also identify as a facilitator.

Another observation that was made is that facilitators and inhibitors mainly exist in the artifact and values & beliefs level, and that there are few underlying assumptions connected to agile and the agile transformation. The reason for many values & beliefs rather than underlying assumptions is because a lot of values & beliefs are contested in the organization. As Schein (2010) explain, values can be discussed and agreed and disagreed upon. This could be an indication that some parts of agile still are not an integrated part of the culture in terms of consensus and underlying assumptions. However, as Dikert et al. (2016) and Naslund and Kale (2020) suggest, changing culture and agile mindset is one of the most frequent success factor, which could indicate some form of importance. In the case company, the culture has certainly been changed which is illustrated in the artifact level, but also in terms of the value being agile. However, this finding also suggests that agile has not become a basic assumption throughout the entire organization, and that the culture related to agile is still developing and has yet to be accepted by some in the organization.

Agile Coaches View on Agile

We also noticed that in the empirics, none of the agile coaches mentioned agile as part of the organization's culture today. This did not mean that the agile coaches thought that the transformation was bad, but rather quite the opposite, as all coaches agree that large improvements in their way of working have been made. However, there are some fundamental issues in the agile organization that conflict with agile values. For example, AC1 some conflict in the customer relationship, in that, they do not col-

laborate with customers in an agile way, but rather still follow plans and contracts. Another conflict, brought up by AC2 and AC3, is leaders that fall back to old patterns as another problem to agile. Task forces was one of the examples of such as problem that contradicts agile. However, the customer interfaces and task forces could also be seen as a customization of the agile approach. For instance, M1 believes that this type of organization in this context might need temporary projects. The problem with this is that it contradicts agile values. Customize the agile approach is a success factor mentioned by Dikert et al. (2016) and Naslund and Kale (2020), but there is also a warning to not contradict the agile principles. Similar arguments are mainly why AC1, AC2, and AC3 believes there are conflicts in the agile ways of working at the case company. Another perspective highlighted by M1 is that agile cannot solve all issues this organization has, and that it is not the answer to everything. This is illustrated with the adaption to include overarching architects in the agile organization, which could be related to that agile often is criticized to lack architectural decisions (Dingsøyr et al., 2014; Waterman et al., 2015). Determining whether agile is the answer or not to these issues is outside the scope of this study. However, bringing these issues to light in the organization could be important, especially for cultural reasons as there are many values & beliefs in the organization but not as many basic assumptions (which has more consensus).

Leadership and Culture

Related to the culture is leadership, as pointed out by Schein (2010). In the case company, there have been a shift in leadership, mainly in line managers. Many of these new managers had more agile experience, and also experience from a similar large-scale agile transformation. Schein (2010) points out that those who can influence the group to adopt certain approaches to problems, will be identified as leaders. Having managers with experience from agile and agile transformation was seen as positive for the transformation by AC1 and AC2. According to AC1, with this change of managers, there was a larger focus on employees and people, rather than product and deliveries. Also, AC2 points out that there was an increase in agile knowledge as the managers changed. This mainly corresponds to the success factor of previous experience with agile (Dikert et al., 2016; Naslund & Kale, 2020). This also aligns with Schein (2010) step 6, positive role models, where seeing new behavior and attitudes is important for cultural change. Therefore, the change in leadership is seen as a facilitator for the transformation. As this change helped with education, and adoption of a more agile mindset.

Organizational Context

Throughout the study, although not in focus, the organizational context, including its history, has played a major role. We identified this issue with some inspiration from Klein and Myers (1999), and their emphasis on the context. Furthermore, the issue of organizational context has been touched upon with the inhibitor "Conflicts in context and culture".

To explore this, we believe both the current environment and the organizational history matters. The organizational history matters for example in terms of the organizational culture, much of which remains from its historical industry, its internal situation, and relation to external stakeholders. Thereby, we can see how the industry has formed the internal organizational culture. Following, it is also clear how the environment puts pressure on the organization, such as with requiring certain customer relations or requesting quicker deliveries. Additionally, history and context are also related to each other, with the organizational being in its context historically, and its history being dependent on its environment and thereby context. Furthermore, today, we also identified the issue of customers not being prepared for what is required of them when working with agile deliveries. This issue, yet again, depends on both the context and the industry's history and puts emphasis, especially if the customer lacks experience, in educating on the new way of working which affects the customer.

5.3 Change

Change management will be analyzed and discussed with the basis of Lewin's CATS model (Lewin, 1947), where both Kotter et al. (1995) and Schein (2010) models will be utilized, in addition to success factors and challenges, to help identify facilitators and inhibitors. Although the steps in the CATS model will be presented sequentially, there is occasional overlap, which will be discussed.

5.3.1 Unfreeze

As for unfreezing the organization and readying it for change, several initiatives and forces can be identified in the before restructuring-stage. However, we also identified forces which assisted in unfreezing the organization even after the restructuring, since additional changes were made.

Before Restructuring

The first step towards unfreezing the organization took place when pressure came both from top-down, and from bottom-up, pushing for change and leading to the transformation group being formed. Top-down, we saw initiatives such as launching a transformation group, providing mandate, and restructuring the organization. From bottom-up came the initial suggestion, interest from certain groups, and some individuals engaging in trying to change the organization. Top-down and bottom-up drive simultaneously aligns with a principle presented by Vodde et al. (2022), of top-down and bottom-up. Where the top-down drive has to be present to make the change sustainable and bottom-up drive has to be present to reduce resistance and allow for the change to take place (Vodde et al., 2022). Thereby, in the case, we identify people doing the right thing (in terms of wanting to work agile), and managers supporting it. This is also a part of the principle presented by Vodde et al. (2022), in turn, displaying the facilitator of top-down and bottom-up drive together.

As for the transformation group, the top management support and the individual's (within the transformation group) interest in agile was essential to enable the group to research and learn about the relevant agile methodologies, and in turn, allowed for them to further spread the knowledge. This acted as an initial channel for communication and education, aimed towards the management, and built the foundation of the transformation initiative. Initially, focusing on gaining management support was of significant importance since management were the ones which had to launch the initiative. However, gaining management support increased in both importance and in difficulty when it was decided that all four component-departments were to participate in the transformation, instead of only the initial two. The importance of education increased with the agile transformation increasing in size, and thereby also the investment required by the whole organization. Furthermore, the difficulty increased since the two departments added last were not initially on board, in contrast with the earlier departments which took part in launching the initiative. Overall, it resulted in more lobbying being required, indicating an increased focus on gaining management support and getting important stakeholders on board, forming a coalition which supported the agile transformation. As for the first aspect, of gaining management support, it is present throughout the agile transformation success factor literature (Dikert et al., 2016; Kalenda et al., 2018; Naslund & Kale, 2020), where all three articles brings up management support as central. Thereby, we categorize management support as a facilitator, enabling the change effort to unfreeze. Additionally, the transformation group which was responsible for gaining the management support to some extent must not be forgotten, and is closely related to this facilitator.

As for the transformation group in itself, and its work in forming a coalition supporting the agile transformation, aligns with Step 2 of Kotter et al. (1995)'s model of forming a powerful enough guiding coalition. This aspect is worth considering in two different directions. First, with the transformation group in itself being a guiding coalition. It acted as the initial guiding coalition, prepared and planned for the change effort. Second, the transformation group also led the work in further gaining management support, lobbying the initiative, and educating people, thereby growing the guiding coalition and the people supporting it. This process aligns with Kotter et al. (1995) description of the guiding coalition, where the coalition usually begins as a smaller group with a few members, and increasingly grows as the change initiative matures. Thereby, we categorize the transformation group and its work of increasing the guiding coalition as a facilitator.

Further, the emphasis on educating management and gaining management support and possible buy-in is present in the literature. Dikert et al. (2016) with presenting common challenges in managing management's unwillingness to change when trying to change and their challenge of hierarchical management, with management being in a waterfall mode and resisting change from the old bureaucracy. Dikert et al. (2016) success factor of management support is also emphasizing the importance of ensuring this support. It is complemented by Naslund and Kale (2020) bringing up management's reluctance to change if it comes from bottom-up, and claiming management as by far the largest success factors in terms of support and buy-in. To

manage the education of top-management, the transformation group led this work. A part of their task was to gain support from management and other stakeholders to launch the initiative and start the transformation, unfreezing the organization. Thereby, the view of the transformation group in itself as a facilitator of the agile transformation is enforced.

However, to revisit the guiding coalition and the transformation group, an issue with the group was that the planning and education work was only conducted part-time. With this, it resulted in their educational work suffering. Although we classified it as a facilitator with the guiding coalition, we can also identify the issues of not building a powerful enough guiding coalition, a common issue presented by Kotter et al. (1995). What was also identified was that interviewees had varying perception of what information was communicated. Such an example is of the vision, where SE1 and AC1 perceived that there were no official vision or goals which were spread throughout the organization, while M1 ensured that both existed and were communicated, focusing on topics such as flexibility, teams, and the competitive market. Thereby, with information struggling to spread, we identify a lack of communication from the transformation group. This issue is related to transformation group members only working part-time, limiting their commitment and possibility to emphasize communication more. Thereby, the approach to not put people full-time on planning and communicating acts as an inhibitor for the transformation. To enforce this view, Kotter et al. (1995) brings up the common issue of under communicating the vision, where he advocates for including the vision in every communication channel. To further problematize, according to management, a vision was both developed and communicated throughout the organization. However, it failed to spread since several interviewees believed that there was no overarching vision, and much less what it actually was. This indicates that management did develop a vision (Step 3), but struggled with communicating it (Step 4), falling in a common pitfall of under-communicating the vision (Kotter et al., 1995). Thereby, we revisit the issue of under-estimating what level of communication is required.

In the empirics, it became apparent that some employees understood the need for change, such as AC2, AC4, SE1, M1 and PO1, while others, such as the requirement experts not experiencing the same urgency, and instead resisted the change. Additionally, with the lobbying work of the transformation group, and the buildup of a guiding coalition, indicated that the group succeeded in establishing a sense of urgency for some managers and stakeholders. The group also took upon themselves to be a change leader, and one interviewee described the leader of the transformation group as a change leader. With this role, we refer to managing most of the change-related initiatives within the context of the agile transformation, managing the work of unfreezing, changing, and partly refreezing. This implies that the urgency was established enough to initiate the transformation, but not without issues. According to Kotter et al. (1995), and his first step, suggests that a certain level of urgency is established to act as a force for unfreezing, pushing people to feel the need for change. Some issues within the transformation could have been mitigated by spreading the sense of urgency to more parts of the organization, avoiding that the restructuring

came as a surprise and reducing resistance. Furthermore, the urgency in some parts of the organization arose from bottom-up realizations that their current way of working was insufficient, indicating that more effort top-down in establishing a sense of urgency would have been beneficial. Overall, we identify the lack of urgency as an inhibitor to the change, while identifying the bottom-up realization and desire to change as a facilitator, enforcing the bottom-up part of the top-down and bottom-up facilitator.

A large part of the initial work for the transformation group was in terms of understanding what had to change to successfully transform. This could be considered essential in designing the new organization, and what had to be done to get there. The scouting for information regarding this was partly done by inviting people to open information-meetings, engaging people in the change. This can partly be connected to involving the learner, step 3 presented by Schein (2010), and how the learner is engaged through discussions in these information-meetings. Furthermore, it also connects to the success factor of engaging people, presented by Dikert et al. (2016) and Naslund and Kale (2020). As a result, it allowed for the transformation group to identify and prepare for some challenges, such as distributing experts and the shift in mindset which was required. These information meetings also acted as a possibility for people to vent their worries, and for the transformation group to face and manage these. This in combination with Schein (2010) emphasizing the involvement of the learner, and the success factors identified by Dikert et al. (2016) and Naslund and Kale (2020), is why we categorize these open meetings as a facilitator for the transformation.

The last step of unfreezing the organization, and initiating the change, was in launching a pilot project, leading the way in restructuring the organization. Although we categorize this step as unfreezing for the organization as a whole due to it acting as a trial for the concept, providing a confirmation that it works, and gaining insights before transforming, it overlaps with the change-stage. This overlap is in terms of a part of the organization already starting their change, putting the pilot project as change for one RA, while as unfreezing for the organization as a whole. With the pilot project providing lessons learned, it allowed for the organization to identify inhibitors prior to the final restructuring and to avoid these. Piloting is also a success factor identified by Dikert et al. (2016). Additionally, it touches upon the success factors of engaging people (Dikert et al., 2016; Naslund & Kale, 2020), and provides insight on how to align the organizational structure with agile (Dikert et al., 2016; Naslund & Kale, 2020) thanks to the lessons learned. Thereby, we categorize the Pilot RA as a facilitator of the transformation, in terms of both unfreezing and changing.

Another aspect of the unfreezing stage, also touching upon the organizational change as well, is the organizational context (building upon organizational context in Section 5.2.4). We identify the changing environment as a facilitator of change, or at least a force which creates a sense of urgency, assisting in unfreezing. When trends and standards in the industry change, it easily affects the organizations within it. One such example is the increased need for software in the automotive industry, push-

ing for more software development. When this need increases, so does the need for such companies output, and thereby an increase in efficiency. Another such an example is the increased competitively with globalization. Putting more pressure on firms to increase their time to market and their efficiency, such as in this case, companies position. In both of these cases, it puts pressure on the organization to change, thereby increasing the urgency felt by the organization and its employees, facilitating unfreezing and change. Moreover, we see how the organizational context affects the transformation, in these cases as a facilitator, but as previously seen the context can act as an inhibitor as well.

After Restructuring

Although it is limited, unfreezing is present even after the restructuring. Mainly, in terms of involving people, who have not yet been involved in the transformation. This is done, amongst others, by educating a selected few, which then takes what they have learned, advocates for agile, and spreads their knowledge. Such an example was a scrum master-like education for 1-2 out of each team, where they further spread their gained knowledge to the team. This can be seen as communicating, although not specifically the vision itself, a part, or a perspective, of the vision (Step 4 (Kotter et al., 1995)) and involving people, which connects to step 3 by Schein (2010). Thereby, providing indication that education has involved more individuals, and in turn facilitated change in the transformation.

5.3.2 Change

The change stage has already been touched upon with the pilot project. However, this is the section where the main body of change will be analyzed with a basis in change management. Change has been occurring since the pilot project, and are still occurring today.

Restructuring

With the restructuring taking place, the transformation group being dismantled, and the creation of the agile community, the community took over the responsibility of improving the way of working. However, the perception regarding the mandate of the agile community varies between interviewees. Some interviewees (AC1 and M3) mentioned issues regarding mandate, and what decisions the community actually could make. This was especially clear early on due to uncertainties in responsibilities and mandate. However, some interviewees (AC4 and M1) were also convinced that the mandate were clearly defined, from AC1 and M3. Additionally, the transformation group was dismantled abruptly and, causing responsibility to be distributed to both the community and APO's, without it being the intention. Because of this, issues such as with mandates and workload arose, such as APO's having too much work. Further, some interviewees (AC1, AC2, and SE1) believes that top management considered their work done as per the restructuring was completed. One could thereby argue that they declared victory at that stage, seeing the transformation as completed, applying a project approach. This is a common pitfall, based on step 7 in Kotter et al. (1995), in declaring victory too early. Thereby, we categorize the premature dis-

mantling of the transformation group, and management distancing themselves, as an inhibitor to the transformation.

Although, even with the rough start, the agile community managed the continuous improvements in ways of working, and it partly hindered the change to revert or lose momentum completely. This by providing education, managing a forum for discussing issues and improvements, and improving ways of working. With the agile community leading the continuous improvements, they could be considered the change leader since after the restructuring, which also connects it to Dikert et al. (2016) and Naslund and Kale (2020) success factor of having a change leader. However, as mentioned previously, this mandate and this role was not formally delegated to the agile community, but rather that the group took it upon themselves to manage some of the previous responsibility that the transformation group had. Additionally, it also opens up for opportunities in both communicating and engaging people, such as with discussions and education, touching upon two additional success factors by Dikert et al. (2016) and Naslund and Kale (2020). Lastly, another success factor of both Dikert et al. (2016) and Naslund and Kale (2020) is that of choosing and customizing the agile approach. As for the latter of customizing, it is to an extent managed by the agile community, in making smaller changes over time, adapting the way of working and managing challenges which has arisen. Thereby, we categorize the agile community as a facilitator to change.

Another force closely related to the agile community is the agile coaches. The agile coaches have been active both in their own RA's and in the agile community. Focusing on their work in their own RA, the majority of their work consisted of supporting, coaching, and educating teams and individuals on agile methodologies and mindset. Thereby, they have taken it upon themselves to manage training and coaching, which is a success factor presented by Dikert et al. (2016). Their work has been essential in managing the agile-related aspects on team level, and to continue to develop their way-of-working. With these aspects in mind, we categorize the agile coaches as a facilitator to the change in the transformation.

Education took place both internally and externally throughout the transformation. External education of product owners took place in combination with the restructuring. It is a part of both the unfreezing stage and the change stage, due to it acting as an initial step for educating product owners, and starting to change people by introducing a new way of working, and mindset. The education acted as a facilitator in terms of allowing the product owners to quicker find their role and allowed for product owners to synchronize and work similarly. Furthermore, a group of people were sent to a Craig Larman course, introducing LeSS. Additionally, the internal education aimed at the organization as a whole, partly focusing on new terminology, had a similar effect. Where it allowed for people to start understanding the larger concepts, by understanding the different terms and parts. Both the internal and external education aligns with Schein (2010) step 2, formal training. Furthermore, it touches upon the success factor of culture and mindset (Dikert et al., 2016; Naslund & Kale,

2020; Kalenda et al., 2018), by the training initializing and enables a shift in mindset and culture. Hence, education will be considered a facilitator to the transformation.

An issue with the restructuring was the abruptness of it, transitioning all teams (except the pilot RA) simultaneously. It is considered an issue due to the many challenges which arose as a result, many at the same time. Such examples are issues regarding mandate with the agile community struggling, education in terms of many having to be educated simultaneously, responsibility in what roles had what responsibility and APO's having too much of it, and efficiency due to the new way of working. An alternative approach was discussed by AC4, bringing up a slower approach, working more continuously and making the transformation in stages, rather than restructuring the whole organization at once. It was somewhat done today with the pilot RA, but could have been extended to avoid having to manage all these issues simultaneously. Either way, the abrupt approach with the current approach was painful, and have been an inhibitor to the momentum of the transformation. Furthermore, it is also a common challenge identified by Kalenda et al. (2018), which was not considered, enhancing the identification of the inhibitor.

After Restructuring

Our interpretation is that much of the change occurred as a result of the restructuring. Much of it is based on that the larger change efforts were managed before and during the restructuring, and much of the change after the restructuring being left to the line organization. It is possible to view the restructuring as a substantive change, and a part of following change as natural. However, much of the following change was managed and planned, to a varying degree, although possibly not intended from the beginning.

An event that repeatedly took place was the implementation of task forces. These are heavily criticized by interviewed AC:s and SE1. Although they may act as an inhibitor, it could possibly been a necessity in some cases, to allow for the transformation to continue without having to revert changes while simultaneously succeeding in satisfying customers. This may be a result of management distancing themselves from the operations in the development organization, and additionally, not understanding enough about agile. However, we choose to categorize the task forces as inhibitors with them promoting a non-agile mindset (according to AC:s and SE1), although they may have been necessary at times. Their promotion of a non-agile mindset is two-fold. First, they promote a command-and-control approach, with management closely surveilling the project, and it being a heavy emphasis on the hero of the task force. Second, task forces takes people from their usual position in varying teams, or at times teams. This makes the environment for teams unstable, where it makes it more difficult to mature in the new teams, and to build trust, making it more difficult to become more agile.

While recruiting managers, the evaluation of having agile knowledge increased. Thereby, new managers which had knowledge, experience, and were supportive of agile, were employed. Furthermore, with middle management working closely with

the teams, it puts the managers in a position where they have to let go of their own responsibility, to allow for the self-organizing teams to thrive. With this perspective, having middle managers support and assistance in the agile transformation is important, and acts as a facilitator for the agile teams' transformation. This in addition to the agile community leading much of the change, much of the change was driven from the middle of the organization. Although it has acted as facilitator for this transformation, many issues were present, especially related to the lack of mandate amongst this level in the organization. To conclude, we consider middle management's knowledge, interest, and support of agile a facilitator to the change, ensuring that the organization do not revert to old habits and continuing to change. To enforce this, the middle management support is a part of management support overall, which is a success factor in (Dikert et al., 2016; Kalenda et al., 2018; Naslund & Kale, 2020). Furthermore, Kalenda et al. (2018) identified the success factor of having prior agile experience, which the new middle managers provided. Lastly, it also touches upon the success factor of team autonomy, where teams have to be allowed to self-organize (Dikert et al., 2016; Naslund & Kale, 2020). By these aspects, the view of the middle management as a facilitator is strengthened.

At this stage, the agile community allowed for employees to engage, raise problems, and learn. This aligns with the support groups presented by Schein (2010) (Step 7), and thereby strengthen the claim that the agile community acts as a facilitator for change, adding to the unfreezing facilitator view of the agile community.

AC2 brings up that people at times lacked interests in education and agile, which made it both difficult and a waste of time to try and educate them. This provides two-folded implications. First, it makes the people educating, at most times AC:s, waste their time which could be spent improving other parts of the organization or ways of working. Second, it makes it difficult to reach out and persuade some employees, or groups of employees, and to get them on-board the transformation, overall decreasing the momentum of the transformation. To explore this further, Kotter et al. (1995) brings up the issue of not providing enough urgency, resulting in a lack of motivation amongst employees. We have touched upon this previously with the lack of urgency, and the lack of interest is a result of this. With no clear communication of such an urgency in the case, people fail to find its importance, and why they should be interested. Overall, the lack of interest acts as an inhibitor, especially in educating and getting employees on board the transformation. To build on this, a success factor presented by Dikert et al. (2016) and Naslund and Kale (2020) is engaging people, which is something the lack of interest is connected to, where it can be seen as an inhibitor to engagement. Thereby, the view of it as an inhibitor is strengthened.

Further, to enforce the change and continue to facilitate it, the hierarchy in the organization was changed. Managers responsibility, and which employees and teams are connected to them, changed to better fit into the restructured organizational structure. This resulted in a more natural hierarchical relationship, in comparison to manager's employees being spread out across teams and RA:s. Amongst this, line managers were placed closer to their teams, allowing for easier management. This is a

step in the direction of aligning the organizational structure with agile, a success factor by Naslund and Kale (2020). With this change, they also face the challenge of hierarchical management (Dikert et al., 2016), where the role of middle management became clearer. Thereby, this change in hierarchy and re-arrangement of managers is seen as a facilitator to the transformation, as a part of aligning the organization to agile.

Another issue is the context of the organization. Although the organization was somewhat prepared for the agile transformation, the customers were not. We see this as an inhibitor to the transformation due to the importance of the customers and their expectations, pressuring the organization to behave in a certain manner. Internally, it is partly connected to mindset and culture, as a success factor (Dikert et al., 2016; Kalenda et al., 2018; Naslund & Kale, 2020). However, the external perspective is not brought up explicitly in any of the three works, but the classification remains.

A challenge which the organization faced at this stage was splitting expert groups, and distributing the employees across several teams, working in separation from other experts. This issue depends on learning anxiety (Schein, 2010), where the experts might feel a lack of physiological safety when moved from their expert group, split, and distributed to many teams. Especially closely following the restructuring, before the mindset had shifted to connecting responsibilities to teams rather than people. This may cause people to feel like they are responsible for all the work within that area for the team, such as one requirement-expert being responsible for all requirement-related work in a CF-team, reducing the physiological safety, acting as an inhibitor for people willingness to change. This issue is enhanced due to the lack of experts withing certain fields, such as requirement. Thereby, we identify how the issue touches upon the challenge of requirements engineering mentioned by (Dikert et al., 2016). Therefore, we classify the resistance amongst experts to change an inhibitor to change.

Another issue present was the introduction and management of new roles, especially the product owner-role. With their new tasks, their new responsibilities, and uncertainties both within the organization and in relation to customers, these roles became the new bottlenecks. Additionally, by leaving it up to the RA's to solve it in their own way, it provides a sense of not having a plan on managing these roles. These issues may be the cause of delay before the product owner-related issues were resolved. Furthermore, role definition with defining and communicating new roles is a success factor of agile transformations (Naslund & Kale, 2020), and was something which was done at an insufficient level. Thereby, being unprepared for role-issues, and not issuing a structured approach to managing these problems can be considered an inhibitor to the transformation.

5.3.3 Refreeze

With the agile transformation came a shift in mindset, where more focus was put on continuously improving ways of working. This led to a continuous flow of improvements, pushing the organization to further change. Thereby, there have been

no significant commitment to refreezing the change in terms of stopping it from continuing. However, there are a couple of forces inhibiting the transformation to revert, and is thereby classified as refreeze efforts. In this section, we will start off with the analysis, which will be followed by a discussion on how refreeze can be perceived.

Restructuring

First, the restructuring was an obsolete structural change which pushes people to adapt their way of working. This put management in a role of control, since reverting organizational structure require their approval, and thereby they can hinder it from reverting to a significant extent.

After Restructuring

The middle managers are a force hindering the transformation to revert. Middle managers have been involved with the agile methodology and worked closely with agile coaches ever since the restructuring. This has led to them gaining extensive knowledge about agile, agile methodologies, and to some extent, the agile mindset. With them transitioning to a much more agile approach has not only facilitated the transformation in terms of them distributing their responsibility, but also inhibiting taking steps back to some extent with their influence and understanding. In addition, with the recruitment of new managers focusing more on knowledge regarding agile, did not only facilitate the change as mentioned previously, it also enforced that the change did not revert.

Additionally, the introductory education for teams could act as a barrier for reverting the change. Whereas training and coaching are part of a critical success factor identified by Dikert et al. (2016).

Lastly, we have touched upon the shift in mindset, to a more agile one, previously (Section 5.2.2). This shift in mindset is another aspect which hinders the transformation to revert. This is mainly in terms of having established a new mindset amongst employees, and that it is on the individual level. Whereas to revert, each individual has to be perceived to change, yet again (on the basis of the individual-focused change literature).

What is Refreeze?

While working on our report, we were enlightened regarding what freezing, or refreezing, actually is. To touch upon this question, we first would like to visit the issue of what the transformation is seen as. During the study, we have encountered varying views on this. For example, AC2 encouraging an evolution-view on the transformation while top-management viewed it as a project, finished in combination with the restructuring. The interpretation that top-management views it as a project is based on two main points. First, the way management acted, by for example closing the transformation group and distancing themselves from the transformation. Second, during our interview with M1, it became clear that when we talked about the transformation, the interviewee limited themselves to the work up until the restructuring,

providing a perception of viewing the transformation as solely the preparation before the restructuring, and the restructuring in itself. It is likely due to the management handing the torch over to the line organization, and allowing for them to manage the more continuous changes conducted over time. As for our view on the transformation, we have adopted the former perspective, of viewing everything from the initial initiative, to the continuing changes being made today, as the transformation.

Moving over to the freezing of change. Starting off, what different initiatives and issues are classified as varies with what perspective we have on change. Such as in what level the change is viewed on and what we see the transformation, the change, as. If we apply a project view on the transformation, limiting us to top-management perspective of the preparation and the restructuring being the main body, all three stages of Lewin (1947) model becomes clear. Unfreezing with the preparation, change as the restructuring itself, and freezing as dismantling the transformation group, ensuring the change does not revert structure-wise, and overall decreasing the momentum of the change. However, by adopting the view on the transformation as incorporating everything from the initial initiative to the work today, identifying a similar freeze is difficult, at least on the organizational level. This depends on that changes has continued to occur, putting the organization, and transformation, as a whole in a state of change. However, if we view different parts of the organization in separation, such as individual RA:s or teams, the situation varies. At this level, we can view the change still as unfreeze, change, and refreeze, however with a rather short span of time. One such an example is the change to Kanban-boards, where teams took it upon themselves to change. Here, the process can be seen as unfreezing by introducing kanban and increasing the interest for trying out this new methodology, change as implementing kanban, and refreezing as the team being satisfied with kanban for the moment, and decides to continue working with this approach. To revisit the higher level, these three steps on the team level may be completely different on the RA or organizational, such as with many teams making this similar change process, but at different times, putting the RA or organization in a state of change, while many of the teams haven't even begun to make the change, are in the middle of it, or has finished and frozen their way of working.

Thereby, whether the change process can effectively be categorized into Lewin (1947) three stages is dependent on which level and what perspective we have of the change. Additionally, with our encompassing view of the transformation, identifying refreezing initiatives on the organizational level has been difficult, due to smaller changes being made throughout the organization, and at different times. This discussion aims to provide insight to why we have identified facilitators and inhibitors more weighted towards unfreezing and change, rather than refreezing.

5.4 Facilitators & Inhibitors

In this section, all facilitators and inhibitors that have been identified in the analysis are summarized and discussed. First, facilitators are presented and elaborated upon. Afterwards, inhibitors are presented and explained. In Table 5.3 and 5.4, all facil-

itators and inhibitors are summarized. The facilitators and inhibitors are grouped, where each group consist of a number of facilitators or inhibitors which were identified earlier in the analysis. The table also indicated whether a facilitator or inhibitor is related to culture, change management, or both. Each group is motivated and described in the paragraphs after each table.

5.4.1 Facilitators

We will in this section group facilitators identified earlier in the analysis. Table 5.3 is a summary of the facilitators identified.

Table 5.3: Summary of facilitators

#	Facilitator	Description	Related to
1.	**Top-down and bottom-up**		
1.1	Management support	Management support enabling the transformation by launching the initiative, building a transformation group, restructuring, and providing mandate to the agile community	CM
1.2	Bottom-up drive	Interest amongst some employees to change, where some advocated strongly for the change	CM+CUL
2.	**Adapting the organization**		
2.1	Restructuring the organization	Restructuring the organization	CM
2.2	Re-arranging managers	Changing hierarchy, changing line managers, and changing assigned teams.	CM
3.	**Communities of practices**		
3.1	Agile community	Facilitate learning, collaboration, and making continuous improvements on way-of working	CM+CUL
3.2	Additional communities	Providing a forum for learning and developing expert knowledge	CM
4.	**Transformation group**		
4.1	Open information meetings	These open information meetings allowed for issues to be brought up and managed, worries managed, and information to be spread.	CM+CUL
4.2	Pilot project	The pilot project allowed for the transformation to begin, and providing insight, facilitating the transformation for the rest of the organization.	CM+CUL
5.	**Shift to agile mindset**		
5.1	Change of recruitment	More focus in recruitment is towards collaborative-characteristics today.	CUL
5.2	Change of middle management	The emphasis on their change is on their support of agile, in combination with their experience and knowledge of it.	CUL
5.3	Continuous improvement	The organization has continued to make changes and improved, even after the restructuring. Such an example is of the change from scrum to Kanban.	CM+CUL
6.	**Training and coaching**		
6.1	External education	There have been several occurrences of external education, such as of product owners and introductory courses in LeSS.	CM+CUL
6.2	Agile coaches	Agile coaches have had a role of supporting, coaching, and educating teams in their use of agile methodologies and on their role to a changed mindset.	CM+CUL

Top-down and Bottom-up

We have identified occurrences where the transformation has been top-down driven, bottom-up driven, or both simultaneously. Where the transformation of people doing the right thing is complemented by management supporting this endeavor. Which leads us to the first facilitator, management support. Management support has been an essential facilitator in terms of making the transformation sustainable, whereas in terms of launching the initiative, building a transformation group, and providing mandate to actors, such as the agile community. Without the management support, these other facilitators would not have been enabled. And this facilitator is closely connected to change management in terms of facilitating and leading the change, or at least support who, or what group, is leading the change. The impact of the management support was especially crucial in the early stages, in unfreezing the organization, and beginning the change, whereas nowadays most of the continuous improvements are done outside top-management's oversight.

As for the bottom-up drive, it can be identified already in the unfreezing stage, with some people being unsatisfied with the way of working and feeling the need for change. One example is that of the initiative arising from bottom-up in the beginning. Another one is the pilot RA, which was filled with people wanting to try out agile and which was positive to change. Thereby, we can see how both the bottom-up and the top-down drivers together facilitate the transformation.

Adapting the Organization

The group of adapting the organization consists of multiple facilitators identified. To begin, the restructuring which initiated the change on a large scale. Its contribution is two-fold. First, it contributed in terms of unfreezing the organization by forcing people to change, at least to some extent. With new teams, new communication channels, and re-distribution of people the change began, and unfroze the organization. The second contribution is in terms of facilitating the already initiated change. People had begun to change their way of working, and by restructuring the organization, it made it easier for these people to do the right things and allow for large-scale agile development. Which in itself differs from the previous contribution in mainly facilitating change, and not unfreezing the organization.

Another example of adapting the organization to facilitate change is in terms of changing the hierarchy and re-distributing LM:s. This change put LM:s closer to their employees, allowing for them to be closer to their team's work, and allow for a more coaching role in comparison to a more command-and-control inclination.

Communities of Practice

The communities of practice have facilitated the change in multiple aspects. Most noticeable is the agile community, which mainly has helped facilitate the change. It somewhat took over the responsibility of being a change leader once the transformation group was disbanded. The agile community has facilitated learning in terms

of providing a forum for people to collaborate and discuss agile. Additionally, they have facilitated learning through educating employees with lectures and continuous improvements. The continuous improvements are one of the central points, where the agile community has continued to make changes after the restructuring to continue improving issues.

However, other communities have been very useful, both in unfreezing and in changing. In terms of unfreezing, the communities has allowed for experts within a certain field to get a forum in which they continue their collaboration and develop their knowledge. This managed the issue of not wanting to leave your silo in fear of loosing a part of your expertise. Additionally, it allowed for continuous learning and for the change to continue by providing this forum. It allowed for the experts to actually feel that they got to continue to develop their skill and retain their expertise, which made them more open to change, and thereby facilitated it.

Transformation Group

The largest contribution of the transformation group was in terms of unfreezing the change, but it also contributed with facilitating the initial change. In terms of unfreezing, open information meetings were central. With these allowing for people to raise their issues, it allowed for the transformation group to both reduce the resistance to change and allowed for them to identify challenges before they faced them. Thereby, they also facilitated the change by managing the challenges and removing possible hindrances to the momentum of the transformation. This included spreading information and educating people on all levels of the organization, from lobbying the project to providing lectures on the area.

Another part of their work in unfreezing the organization was in terms of the pilot project. Allowing for an unfreezing of a part of the organization. It allowed for people to test out issues, get answers to questions, and to provide lessons learned for when more of the organization are to transform. Furthermore, it allowed for people to observe the effects of the change, and thereby provide insight into the benefits, and through this reduce the resistance to change, and facilitate the unfreezing. Moreover, the pilot RA also allowed for some people to start change, and they were put in an environment which enabled their change.

Shift to Agile Mindset

First, it is possible to identify a shift in priorities when recruiting new employees as well as new managers. As for employees, the focus on collaboration-related characteristics has increased. This shows an understanding of what is required in an agile environment, and what competencies should have a higher priority. As for managers, the focus on agile knowledge and experiences working with agile has increased. This displays an understanding of the value of prior agile knowledge, especially in roles with more mandate.

Another aspect is the middle management, driving the change both up and down. They do with their acquired agile knowledge facilitate the transformation, partly in terms of making suitable decision in terms of not hindering the agile transformation due to their understanding of the agile mindset. They do, thanks to their knowledge and agile mindset, understand what is needed in the agile environment to encourage the change, at least to some extent. Thereby, they act both as a leader of smaller changes, and as a facilitator for the change of mindset. One important action that the middle management has taken to some extent, and is essential for the transformation is to provide mandate to the CF-teams, and taking upon themselves a more coaching role, in comparison to a command-and-control approach. This is essential for the agile transformation, and much of their facilitating behavior origins from an agile mindset, or at least an understanding of an agile mindset.

The most significant display of a shift to a more agile mindset is that of continuous improvements. Where after the transformation, the organization has continued to make changes to ways-of-working as to increase efficiency, and face challenges which had appeared. One such recent example is of the change from scrum to kanban. Here, employees had understood that simply following the methodology is not sufficient, and had identified opportunities to improve the ways-of-working. Thereby, the agile approach was adapted, to better fit the teams and their needs.

Training and Coaching

Education has been discussed previously, in the cases of the agile community, agile coaches and the transformation group, where it has been used as a tool by the units to facilitate unfreezing or changing the organization. What we would like to emphasize is how education assists in facilitating change by providing education at different levels, roles, and times, increasing the knowledge and understanding amongst employees. In turn, it assists in facilitating change in values and behavior, thereby facilitating the transformation as well, although it takes time.

Moreover, external education has been utilized as well. Especially in fields new to the organization, such as LeSS and product owner-related knowledge. With the lacking knowledge, the organization utilized external education, which in turn facilitated the transformation by providing new critical information that the organization had been lacking.

Furthermore, the role of agile coaches has provided a coaching role, educating and supporting teams on their agile journey. These agile coaches came both from internal employees which had an interest in agile, as well as external agile coach-consults. Which is yet another aspect of bringing in external knowledge and competency which the organization have been lacking.

5.4.2 Inhibitors

In table 5.4 a summary of all identified inhibitors are presented. Afterwards, some motivations and descriptions of each group of inhibitors is provided.

Table 5.4: Summary of inhibitors

#	Inhibitors	Description	Related to
1	**Uncertainty with new roles**		
1.1	Unprepared for role changes	Issues present with the introduction of the new roles in the agile organization, mainly issues with product owner role	CM
1.2	Psychological safety	Where experts not wanting to lose their expertise being the main example inhibiting the change.	CUL
2	**Lack of employee buy-in**		
2.1	Underestimating communication	Underestimating communication or under communicating, vision included	CM
2.2	Lack of interest amongst employees	Amongst employees, a varying degree of involvement has been identified. Difficulties for information to spread and take root. Some employees felt a lack of urgency.	CM
3	**Lack of top management understanding**		
3.1	Utilizing task forces	Short term task forces to put out fires rather than using the agile organization.	CM+CUL
3.2	Premature dismantling of transformation group	Without clear mandate and a dedicated transformation group, this inhibited change	CM+CUL
3.3	Management distancing themselves	After restructuring, management less involved	CM+CUL
3.4	Part-time transformation group	Planning and education work conducted part-time caused a lack of commitment	CM
4	**Conflicts in context and culture**		
4.1	Hero culture	Individual heroes rather than teams are used to solve problems. Lead to firefighting behaviour in the organization.	CUL
4.2	Customer relations	Customers still in waterfall, hard to be transparent and using waterfall with agile collisions. Issues with customer interfaces.	CUL
5	**Too fast roll out**		
5.1	Abrupt approach	Make a large restructuring and not implementing substantial change gradually	CM

Uncertainty with New Roles

Something that occurred during the transformation was the adjustment to new roles and working in cross-functional teams. This acts as an inhibitor as there were inhibiting factors in terms of psychological safety, going to cross-functional teams. This was something that had to be addressed, especially with a structure that relied on experts, and not teams to the same extent. The experts also felt that they lost, their role and identity to some extent, which had to be managed in the organization. Adjusting to new roles was also an issue that had to be managed. This was mainly noticed in the product owner role, where the organization had to implement a large change in their workflow, as priorities became more important. Many product owners lacked experience, creating a bottleneck and inhibiting the change.

Lack of Employee Buy-In

We see lack of employee buy-in as a group of inhibitors, because amongst employees in the organization there have been quite varying involvement. This lack of buy-in can also be connected with the communication, which during the transformation was perhaps underestimated in terms of what was needed to get the needed employee buy-in. Not having a clear vision further made the employee buy-in more difficult, as it there was a lack of alignment in where the organization was heading. Volunteering was one of the LeSS adoption principles, where education was seen as a crucial part, so that people know what they are volunteering for. The education and clear understanding of what the employees were getting in to was to some extent missing with the lack of communication and a clear vision.

Lack of Top Management Understanding

We identify a group of inhibitors that is lack of top management understanding. This is connected to a few things that occurred in the transformation, mainly: task forces and dismantling the transformation group prematurely, management distancing themselves and part-time transformation group. The reason why we categorize this under the larger inhibitor of lack of top management understanding, is because all of these inhibitors relate to the actions of management. Lack of top management understanding is also closely connected to cultural values. Dismantling the transformation group can be connected to the value of seeing the transformation as a project, and thus, their lack of understanding of the evolutionary process of the agile transformation. Task forces, is also connected to culture, but in terms of hero culture. These initiatives with task forces solve problems short term, but conflicts with the agile organization. Management distancing themselves can also be connected to the value of seeing the transformation as a project. Management distancing themselves also led to problems in mandate in the agile organization, and when issues appeared after the restructuring, it was unclear whose responsibility it was to solve it. Lastly, the part-time transformation group was another problem, which mainly had consequences in communication and education in the organization.

Conflicts in Context and Culture

We identify conflicts in context and culture as a group of inhibitors for the transformation. The context have had an impact on the transformation, mainly in terms of external stakeholders having different contexts, and that interfaces are needed between them. These differences in context can be related to the industry, where the automotive industry is known for more traditional product development, rather than agile methodologies. Cultural conflicts also occurred, mainly in terms of hero culture that existed in the organization. The hero culture had to be managed when the transformation was made, because of the clear conflicts with agile and the new agile organization. This was not as apparent with the old structure, which was more sequential and reliant on individuals rather than teams.

Too fast roll out

Another inhibitor during the transformation was the abruptness of it. When the restructuring was implemented, substantial change occurred during a short period, e.g., transitioning of all teams, new product owner roles and more. Having a more gradual approach would have made it easier to handle the issues that occurred after the change. Because this inhibitor is mainly related to the restructuring, we choose to label this group as too fast roll out.

Chapter 6
Conclusion

In this chapter, the conclusion of the study is drawn and reflected upon. First, the fulfillment of the purpose will be presented by answering the two research. Following, the contributions will be presented and discussed. Next, the limitations of the study are presented. Lastly, suggestions for future research are given, based on the contribution and the limitations with the study.

6.1 Fulfillment of Purpose

Organizations today which pursue an agile transformation faces many hardships, and the majority of the efforts fail. To explore the agile transformation, understand what hinders the transformation, and what pushes the transformation forward, we approached the following purpose: *The purpose of this study is to explore what facilitators and inhibitors are present in an agile transformation.*

To succeed with fulfilling the purpose of the study and to concretize, two research questions were proposed and answered. *(1) How does culture facilitate or inhibit change in agile transformations in a software organization in the automotive industry?* By answering the first research question, we identified 9 facilitators and 6 inhibitors connected to culture. While answering this research question, we also found that the change in culture had been quite substantial, displaying the importance of culture and mindset in the agile transformation. To answer the second research questions *(2) How does change management facilitate or inhibit change in agile transformations in a software organization in the automotive industry?*, similarly, we identified 11 facilitators and 8 inhibitors connected to change management.

These facilitators and inhibitors are provided to give more insight into the transformation. They build on previous research, adding the context going in depth in a case, and going beyond identifying factors and challenges. Facilitators are not solely important factors to consider, but rather aspects, events, or actors which in some way has pushed the transformation forward. They go further by providing ways in which the momentum of the transformation can be kept up, or increased. Inhibitors, are similar. They are not solely challenges or, yet again, factors to consider. Instead,

they partly build upon these to provide more insight into the agile transformation and what forces may inhibit the momentum of it.

While answering these two research questions, we found that many of the facilitators and inhibitors in the two areas were related, and at times overlapping. With these facilitators and inhibitors, we concluded that in the case of agile transformations, change management affects culture, and vice versa, in multiple aspects. This finding is interesting, but this was not a large focus in this study.

Furthermore, we found the agile transformation to, in our case, be dependent on the organizational context. Mainly in terms of the organizational history, the culture in the industry, and the current external stakeholders. These aspects, both internal and external, form what forces pushes for, or hinders, change.

6.2 Contributions

The first contribution of this study is to provide more case studies to the literature on agile transformation, which was mentioned something lacking (Dikert et al., 2016; Paasivaara et al., 2018). This study provides a case study in the field of agile transformation, and specifically in the automotive industry. It provides insight in how events, actors, context, and culture has affected individuals and the transformation. Furthermore, it has allowed a more in depth study of individuals, and their role in the agile transformation, aligning with the common individual-focused view in general change literature. With this case study, we also provide more academic research associated to agile transformation, where the literature review by Dikert et al. (2016) mainly consisted of experience reports, due to the lack of academic research on agile transformation.

Furthermore, it utilizes the findings of success factors and challenges based on the literature reviews by Dikert et al. (2016), Kalenda et al. (2018), and Naslund and Kale (2020) in a specific context, and building upon these by identifying facilitators and inhibitors in a specific case. This study reveals similar findings as the literature on success factors and challenges (Dikert et al., 2016; Kalenda et al., 2018; Naslund & Kale, 2020), but with descriptions of facilitators and inhibitors and how they affected the transformation, rather than just listing factors and challenges. One example of this is the facilitator management support, instead of simply label this as an important factor, we describe how management was involved during the transformation and what efforts that were made to achieve management support. We also describe how the management support helped to facilitate change in the agile transformation. Thus, facilitators and inhibitors are related to success factors and challenges, but tries to go more in-depth in what effect they had on the transformation. There are also some unique facilitators and inhibitors that were not found in the chosen literature of success factors and challenges (Dikert et al., 2016; Kalenda et al., 2018; Naslund & Kale, 2020), this will be covered next.

Comparing success factors and challenges with the identified facilitators and inhibitors in our case study, there are a lot of similarities in what has been found, but also some differences, which are interesting findings. When it comes to facilitators and success factors, change in recruitment was not mentioned as a success factor, but something that we identified in the case study. Communities of practice was not mentioned as an explicit success factor, but was mentioned as an example to achieve certain success factors, such as mindset (Kalenda et al., 2018). Dikert et al. (2016) also recognize that some scaled agile practices, such as communities of practice, and their relationship to challenges and success factors have been covered very little in research. However, something that was not found in the case study were incentives and measures or tools (e.g, it-systems), which was covered in the success factors. Incentives and measures can be partly explained because of the lack of a clear vision or goals, as measures are generally connected to achieving goals. Tools were not mentioned by the interviewees. When it comes to inhibitors and challenges, quality assurance issues and coordination challenges, as described in the literature on challenges (Dikert et al., 2016; Kalenda et al., 2018), were not identified in the case study. However, something unique that was found in the case study was hero culture, task forces, psychological safety, and premature dismantling of transformation group.

Additionally, with the change management and culture perspective added, we provide insight from other literature fields in identifying facilitators and inhibitors, mostly with Lewin (1947), Kotter et al. (1995), and Schein (2010) in focus, complementing the already identified aspects in the literature field of agile transformations. There have been efforts of including change management in the field of agile transformations, such as by Gandomani, Zulzalil, Ghani, and Sultan (2013). Additionally, in a master thesis (Brynildsen, 2021), multiple change management methods were used, Kotter's being amongst them. However, we found no occasions in our literature where Lewin (1947) nor the cultural change management model by Schein (1991) was utilized within the area of agile transformations. Thereby, we continue the work of utilizing change management in agile transformation.

What is noticeable about this study as well is the pretty good accessibility, resulting in getting access to both a variety of roles and people who were happy to share their experiences. This allows for a more holistic case description, adding how different roles have perceived the transformation. Although we did get access to several different roles, the interviews are not evenly distributed, such as there being more interviews with agile coaches than any other role. Furthermore, with our closer connection to some interviewed agile coaches, we got to complement our interviews with fruitful discussions, increasing the quality of the study. Examples of these are ensuring we got the right information and providing answers to questions regarding agile and agile transformations. Although this relationship has been beneficial in many aspects, it has affected which interviewees we have accessed, which could have biased the results, such as interviewees being more positive towards agile.

With the context and the history mattering (inhibitor of conflicts in context and culture), we believe that the industry in which the organization is located matters. This

concretizes the view by (Hughes, 2011) on organizational change being context dependent, and applies it to the agile transformation context, with the automotive industry being the context of this case. Especially in cases where the industry lacks experience with agile and software development, while firms in it are having to increasingly include software development in the product development. With these characteristics being in focus, other industries can be of relevance to our findings as well. What we identified as the most significant characteristic, was the complex product development and the history of focusing on large deliveries with waterfall approaches, which is applicable to many complex product development industries outside the automotive industry. Such examples are sewing machines, kitchen appliances, and workout-machines (trainers, gym machines etc.). Whereas these industries has also seen an increased level of software being included and having a history of non-software product development.

When it comes to practical contributions, Aghina et al. (2021) mentioned that around two thirds of transformations fail to find it successful. Scaling agile is also often considered an especially difficult task (Conboy & Carroll, 2019; Kalenda et al., 2018). Furthermore, there is no consensus in the literature on best practices when scaling agile, even though this is one of the most interesting topics for practitioners (Kalenda et al., 2018). This study provides facilitators and inhibitors for change in agile transformations, which could be especially useful for practitioners wanting to undergo an agile transformation in the automotive industry, or other industries with similar characteristics.

The findings of this study could be used to increase the success of agile transformations in similar contexts as this case study. The findings can, e.g., benefit large companies that want to or are transforming to large-scale agile. This study provides examples of facilitators and inhibitors for an agile transformation, which can serve as guidance in the companies change processes. Facilitators can be used as inspiration for what is possible to do to assist in retaining or increasing the momentum of the agile transformation, while inhibitors are aspects which practitioners should be aware of and can possibly be used to manage hindrances to the transformation, by either avoiding or mitigating these inhibitors.

6.3   Limitations

A first limitation is that the interpretation from the researchers may differ and could also be incorrect. The interpretations depend on the researchers conceptions, and even though we were two researchers, there may exist some bias or misinterpretations in the report. This was exemplified during the study when working on the analysis, as different views occurred based on what interviewees said. These differences were discussed to reach a consensus.

Selection of interviewees is another limitation, as all were selected based on recommendations. We tried to ask for recommendations of interviewees with different perspectives, but there may exist a bias in the people that were selected. For example,

some recommendations from the case company could have been of people with a more positive outlook on agile, making the case company look better. Another issue was that numerous people had left the organization after the transformation. We managed to interview some people outside the organization, but these recommendations were harder to come by. Also, none of these recommendations was given by the case company, as these people were not working there anymore. Ideally, we would have wanted to get interviews with people that worked or had worked at the case company with different views on the transformation, both positive and negative. We believe that most interviewees had a bit more positive outlook on the transformation and change, which is reasonable as most of them chose to still work there. However, there were people that left the organization as a reaction to the restructuring. It would be interesting to gain their perspectives, as it should reveal more negative aspects of the transformation.

Another limitation was that we only interviewed one person for certain roles. This meant that some roles only got one person's view. We tried to obtain different perspectives for each role, but for some roles, this was more difficult. For instance, in the management it was particularly hard to land interviews, as most people were extremely busy. However, we believe the report could have become even better with more perspectives in the management level, as we lacked some insights mainly from top management.

Lastly, all interviewees shared their perspectives in retrospect. This could be an issue because interviewees may not remember as much detail regarding different parts of the transformation, or could misremember things entirely. Another issue of viewing the transformation in retrospect is that the view on certain events and aspects may have changed. Such as remembering things as either worse or better than what they were perceived at the time, and thereby possibly providing a misleading perception. Additionally, it is possible that by talking about prior events peoples perceptions might have shifted due to others inputs, and thereby possibly been stained by others perceptions or beliefs. During the study, this was hard to identify, but some examples of this were that we heard different numbers and dates for certain events during the transformation.

6.4 Future research

In this thesis, we identified multiple facilitators and inhibitors in an agile transformation in the automotive industry. Additionally, we have identified a relationship between the agile transformation and the organizational history and context. Thereby, we encourage case studies in different contexts, especially in traditional product industries and companies which has seen an increased level of software integrated in their products lately.

Furthermore, our thesis focuses on a retrospective perspective on the case. To complement this, we suggest conducting a longitudinal study to enable understanding the perception amongst individuals along the way, and not limited to retrospect.

An issue which we encountered in our study was of experts fear of loosing expertise and the possibility to further continue to develop when working in CF-teams. This is related to knowledge management, and skills amongst employees. Although it is not a new issue to agile itself, it is rather unexplored in the field of agile transformations. Therefore, we suggest exploring the issue of knowledge management in the context of agile transformations.

Heroes and utilization of task forces was something surprising to the authors in this study, and something that we were not familiar with before the study. This was especially interesting because in the case company this seemed to be an issue that existed even before the transformation. Utilizing heroes and task forces showed to be an inhibitor of the transformation, but we also think there are other issues connected to heroes and task forces. One such issue, that was mentioned by M3, was that individuals were burned out and had a heavy workload and responsibility. AC2 also believes that in the long run, the task forces may hurt the organization, as it undermines agile and causes stress for individuals. Investigating the short term and long term effects of task forces in agile settings would be an interesting topic for further research. One starting point for this could be from the article by Westelius et al. (2013), that uses the term "sustainable organizations", which in this case, means organizations that can operate long term without the expense of people in the organization. Westelius et al. (2013) believes that there needs to be a balance of four values: meaning, authority, care, and rationality, in a sustainable organization. Even though task forces and heroes could be beneficial in the short term, to achieve results such as customer satisfaction, profit, it is unclear what types of long term effects this has on people and on the agile organization.

Lastly, we have touched upon the interplay between change management and culture. Going more in depth in this interplay would be interesting, and could increase the understanding of it in the agile transformation context. Which in turn could assist in understanding how to facilitate agile transformations further.

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Chapter 7
Appendices

In this chapter, the interview guide that was used during the interviews and the study information sheet sent out to all interview participants can be located. The interview guide and study sheet are translated, but were sent out in Swedish. However, we chose to keep the Swedish version of the interview guide, as it may provide better understanding to the reader in its native language.

A. Interview Guide

Interview Guide

Date and Time:
Location:
 Interviewer:
Annotator:
Interviewee:

Before the interview

- Introduce us
- Mention that we are interested in the person's perception and there is no problem if they cannot answer questions.
- Ask if the recording is okay, will delete the recording after the end of the thesis, and we are the only ones who will take part in the recording in order to go back to ensure that we understood what was brought up correctly (But also take notes)

General questions

1. Where do you work and what are you doing right now?
2. How long have you been working in the <Case company>?
    a. Are you still working or when did you quit?

Agile transformation

1. Have you come across the concept of agile transformation before?

> **Description:** There are different definitions of an *agile transformation*, and in our work we focus on *large-scale agile transformation*, which in our interpretation means that an organization makes an organizational change to work with *large-scale agile development*. One definition of *large-scale agile development* that we use is: development organizations or projects consisting of 50 or more people and at least 6 teams. Not all roles need to be developers, but should belong to the same development organization or project.

2. Overall process:
    a. During the transformation, what important events will come to mind (before/during/after the transformation)
        i. What impact did these events have?
    b. What was your role(s) during the transformation?
        i. What duties?
3. Motives and goals
    a. Do you know why the agile transformation happened?
    b. Do you know where it was initiated from?
    c. Were there any goals and vision that you know about?

Change

1. Have you seen a change in top local management over the course of the transformation?
    a. With both top local management and lower levels of managers?
    b. What does it look like/look like before/after the restructuring (flip)?
    c. Has top local management been involved in the restructuring (flip)?
        i. What impact could this have had?
2. Have you seen a change in the way leaders act over the course of the transformation?
    a. What does it look like/look like before/after the transformation?
    b. What impact do you think leaders have had?
3. What has education and learning been like during the transformation?
    a. Before/during/after?
    b. Formal and/or more informal education (individually, in groups)?
    c. Have there been any problems with formal/informal education during the transformation?

Change management

1. How familiar are you with change management?

Description: We see change management as a structured approach to lead individuals, groups and organizations from the present to a desirable future situation to meet the demands of customers, employees and the market where an overall focus is on how individuals respond to and manage change.

2. Change management:
    a. Change:
        i. How has post-restructuring (flip) been managed?
        ii. Has the change after transformation been consciously created?
    b. Unfreeze:
        i. Has anything been done to enable and initiate a change? What?
        ii. How was the transformation planned?
        iii. Was the subsequent change planned before the actual implementation?
    c. Refreeze:
        i. Is anything being done to ensure that change persists?
            1. Culture?

Culture

Description: Organizational culture is exactly like culture, but in an organization. It can consist of common values, principles and other things that are shared within groups in the organization.

Examples of cultural expressions can be: Vision, values, norms, systems, symbols, language, assumptions, work environment, habits

1. Culture
    a. Change

      i. How would you describe the culture at <Case company> today? (If hard to come by, give examples above)

      ii. Is there any problem today between your agile way of working and the corporate culture?

   b. Unfreeze

      i. Have you seen a change in culture compared to how it was before the transformation? If so, what has changed?

      ii. Was there any problem between the company culture and the introduction of more agile ways of working during the transformation?

2. Recruitment (If the person is working on this)

   a. What do you see as important culturally in recruitment for the person to fit in?

      i. Is there any difference what was seen as important before the transformation?

   b. Are you actively working to create a common culture for new employees? How?

      i. Is there any difference how you worked before the transformation?

Final comments

1. Do you have anything more you'd like to add?
2. Is there anyone you know that you think would be interesting for us to talk to?
3. Any documents that we can access? (Is there a relevant person to ask)

B. Interview Guide (Swedish)

Intervjuguide

Datum och tid:
Plats:
Intervjuare:
Antecknare:
Intervjuperson:

Innan intervjun

- Presentera oss
- Nämna att vi är intresserad av personens uppfattning och det är inga problem om den inte kan svara på frågor.
- Fråga om inspelning är okej, kommer ta bort inspelningen efter avslutat exjobb, och vi är de enda som kommer att ta del av inspelningen i syfte att gå tillbaka säkerhetsställa att vi förstått vad som tagits upp korrekt (Men anteckna också)

Generella frågor

1. Vart arbetar du och vad gör du just nu?
2. Hur länge har du arbetat inom <Caseföretaget>?
   a. Arbetar du kvar eller när slutade du?

Agil transformation

1. Har du stött på begreppet agil transformation tidigare?

> **Beskrivning:** Det finns olika definitioner av en *agil transformation*, och i vårat arbete fokuserar vi på *storskalig agil transformation*, vilket i vår tolkning innebär att en organisation gör en organisatorisk förändring för att arbeta med *storskalig agil utveckling*. En definition av *storskalig agil utveckling* som vi använder oss av är: utvecklingsorganisationer eller projekt som består av 50 eller fler personer och åtminstone 6 teams. Alla roller behöver inte vara utvecklare, men ska tillhöra samma utvecklingsorganisation eller projekt.

2. Övergripande process:
   a. Under transformationen, vilka viktiga händelser kommer du att tänka på (före/under/efter transformationen)
      i. Vilken påverkan hade dessa händelser?
   b. Vad hade du för roll(er) under transformationen?
      i. Vilka arbetsuppgifter?
3. Motiv och mål
   a. Vet du varför den agila transformationen skedde?
   b. Vet du vart den initierades från?
   c. Fanns det några mål och vision som du vet om?

Förändring

1. Har du sett en förändring av högsta lokala ledningen under transformationens gång?

a. Med såväl högsta lokala ledningen som lägre nivåer av chefer?
b. Hur ser det ut/såg ut före/efter omstruktureringen (flip)?
c. Har högsta lokala ledning varit involverad i omstruktureringen (flip)?
    i. Vilken påverkan kan detta ha haft?
2. Har du sett en förändring av hur ledare agerar under transformationens gång?
a. Hur ser det ut/såg ut före/efter transformationen?
b. Vilken påverkan tror du ledare har haft?
3. Hur har utbildning och lärandet sett ut under transformationen?
a. Innan/under/efter?
b. Formell utbildning och/eller mer informell utbildning (individuellt, i grupp)?
c. Har det varit några problem med formell/informell utbildning under transformationen?

Förändringsledning

1. Hur bekant är du med förändringsledning?

Beskrivning: Vi ser förändringsledning som ett strukturerat tillvägagångssätt för att leda individer, grupper och organisationer från nuläget till ett önskvärt framtida läge för att bemöta krav hos kunder, anställda och marknaden där ett övergripande fokus är på hur individer bemöter och hanterar förändring.

2. Förändringsledningen:
a. Change:
    i. Hur har förändring efter omstruktureringen (flip) hanterats (managed)?
    ii. Har förändringen efter transformation varit medvetet skapad?
b. Unfreeze:
    i. Har det gjorts något för att möjliggöra och påbörja en förändring? Vad?
    ii. Hur planerades transformationen?
    iii. Planerades den efterföljande förändring innan själva genomförandet?
c. Refreeze:
    i. Gör man något för att säkerhetsställa att förändring kvarstår?
        1. Kultur?

Kultur

Beskrivning: Organisationskultur är exakt som kultur, fast i en organisation. Det kan bestå av gemensamma värderingar, principer och annat som man delar inom grupper i organisationen.

Exempel på kulturella uttryck kan vara: Vision, värden, normer, system, symboler, språk, antaganden, arbetsmiljö, vanor

1. Kultur
a. Change
    i. Hur skulle du beskriva kulturen på <Caseföretaget> idag? (Om svårt att komma på, ge exempel ovan)

      ii. Finns det någon problematik idag mellan erat agila arbetssätt och företagskulturen?
   b. Unfreeze
      i. Har du sett en förändring av kulturen jämfört med hur det var innan transformationen? Isåfall, vad har förändrats?
      ii. Fanns det någon problematik mellan företagskulturen och införande av mer agila arbetssätt under transformationen?

2. Rekrytering (Om personen arbetar med detta)
   a. Vad ser du som viktigt kulturmässigt i rekryteringen för att personen ska passa in?
      i. Är det någon skillnad vad man såg som viktigt innan transformationen?
   b. Arbetar ni aktivt med att skapa en gemensam kultur för nyanställda? Hur?
      i. Är det någon skillnad hur man arbetade innan transformationen?

Sista kommentarer

1. Har du något mer du vill tillägga?
2. Är det någon du vet som du tror vore intressant för oss att prata med?
3. Några dokument som vi kan ta del av? (Är det en relevant person att fråga)

C. Study Information Sheet

Thank you for choosing to participate in an interview for our study. The following is some information that describes the background and purpose of the study as well as your role as a participant.

Summary: The purpose of the interview is to investigate and gain insight into the agile transformation that the company has undergone. It is part of our degree project and is done in conjunction with Responsive Development Technologies.

The study is part of a degree project that is being done within the Master programme industrial engineering and management at Linköping University. The degree students are Björn Bergfeldt and Filip Brunander who are both studying The Master of Science in Industrial Engineering and Management with a master's specialization in Digitization and Management. The degree project is done in collaboration with Responsive Development Technologies.

The aim of the study is to understand the process of *an agile transformation* and how culture, leadership and management can influence this process. The purpose is also to investigate the change itself and the impact *of change management* .

There are different definitions of an *agile transformation*, and in our work we have chosen to focus on *large-scale agile transformation*, which means that an organization makes an organizational change to work with *large-scale agile development*. Our interpretation of *large-scale agile development* based in literature is development organizations or projects consisting of 50 or more people and at least 6 teams. Not all roles need to be developers, but should belong to the same development organization or project.

We see change management as a structured approach to lead individuals, groups and organizations from the current situation to a desirable future situation to meet the demands of customers, employees and the market where an overall focus is on how individuals respond to and manage change.

You have been selected as a participant in our study because we believe that your background, role and/or experience can give us valuable insights into the work. In the report, all interviewees will be anonymized and no names of you as an interviewee will be included. The role and year the person worked at the company will be included in the report, with the reason to give more context to the interviewees and a more nuanced analysis. Participation in the feasibility study is voluntary and you as an interviewee can withdraw from the feasibility study whenever you want without being asked any questions. Otherwise, we comply with the General Data Protection Regulation (GDPR) when it comes to personal data processing.