

The role of the first line manager in a Scaled Agile organization

A Case Study at Volvo Cars Corporation

Master's Thesis in the Management and Economics of Innovation Master's Programme

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Cover:

[“One person under the magnifying glass” This thesis is investigating the line manager role, illustrated by looking particularly at one role.]

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Abstract

The global business environment requires organizations to be more flexible and adaptive to changes. *Agile* was designed for this purpose, originating from small software companies. Large established firms looking for a solution are trying to take advantages of the Agile benefits. The size of these firms however require a different approach than the one developed for small software companies, and this approach could be *Scaled Agile*. Scaled Agile are combining Lean and Agile principles to suit large firms. However, the management theory of traditional, Agile and Scaled Agile organizations is in part contradictory. When large organizations with traditional organizational structures undergo a Scaled Agile transformation, there is uncertainty about what happens to the traditional line manager. The purpose of this thesis is to map out how a traditional and hierarchical management role can be implemented into a Scaled Agile organizational structure, focusing on Volvo Cars Corporation, VCC, and using three additional organizations to provide a contrast. This has been conducted through a qualitative case study totaling 16 interviews aiming to answer the following research questions: (1) *How has the line management structure changed when going through a Scaled Agile transformation?* and (2) *What tasks and responsibilities have been removed respectively emerged and what does this require of a first line manager in a Scaled Agile organization?* To answer these research questions, this thesis covers theory concerning the characteristics of traditional, Agile and Scaled Agile organizations and their respective management styles. The collected interview data was compiled and categorized under *Changes in organizational structure*, *The interplay between PO, ScM and FLM* (first line manager), *Line manager responsibilities* and *Challenges of the line manager*. The main part of the findings concerns VCC. The findings from the three additional organizations are categorized under the same headings. All four organizations had started implementing Scaled Agile, but their approach varied substantially. This thesis concludes that line managers are still needed in a Scaled Agile organization. Their roles however have to change in order to align with Agile practices. By doing so the first line manager loses technical responsibilities but becomes more involved in HR, interpersonal tasks and transformation work. The organizations investigated chose to keep the line structure almost as it was before the transformation, but still expected individuals to change their way of working. This makes the mindset of the individual all the more important to the success of a Scaled Agile transformation, however the findings implies that an individual with an Agile mindset can positively influence those around them. In the four organizations, the Scaled Agile approach has changed the distribution of power between some of the Agile roles compared to original Agile methods. This thesis advise that the first line manager embrace their increasingly HR related role by letting go of product responsibilities, embracing more HR, developing individuals and becoming a servant leader.

Keywords: Scaled Agile management, Scaled Agile transformation, Agile management, traditional management, hierarchical, first line manager, FLM, line manager responsibilities, line structure

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Glossary

ART	Agile Release Train
FLM	First Line Manager
OPO	Operational Product Owner (present in Organization A)
PI	Program Increment
PO	Product Owner
SAFe	Scaled Agile Framework
ScM	Scrum Master
VCAF	Volvo Cars Agile Framework
VCC	Volvo Cars Corporation

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1 Introduction

To introduce the reader to the topic of this thesis, this section covers a brief background to management history, the development of the automotive industry and the case organization Volvo Cars Corporation. The background is followed by a problematization, resulting in two research questions.

1.1 Background

The first waves of management disciplines occurred in the early 1900's, and the work of practitioners such as Taylor and Fayol, characterized by top-down hierarchical management is still being applied in organizations today (Langbert & Aupperle, 2002; Maylor, 2010). This type of management, also referred to as traditional management, focused on command and control and aimed to increase productivity and foster large scale production (Cole, 2004). Organizations were commonly separated into specialized functions supervised by a line manager hierarchy (Maylor, 2010). Increasing complexity and uncertainty eventually called for new management principles, and project management started developing in the mid 1900s (Maylor, 2010). Larger organizations adopted a combination of line- and project structure, also referred to as matrix organizations (Maylor, 2010). In the 1970's, Waterfall practices became more popular, which was used as a single-step sequential model (Kister, 2016). Waterfall heavily influenced project management during the 1990's and 2000's, however it posed challenges because of its lack of flexibility, making it hard to adapt to sudden changes and causing a higher risk and uncertainty if there is unknown requirements in the project (Highsmith & Cockburn, 2008; Kumar, Zadgaonkar & Shukla, 2013). Early software development in the 1980's was influenced by traditional management and waterfall principles using a matrix structure (Larman & Basili, 2003; Maylor, 2010). While waterfall held advantages in software development in terms of simplicity and clearly defined phases, it was hard to adapt to changes throughout the process (Kumar, Zadgaonkar & Shukla, 2013). The customer would also not be able to view and test the product throughout the delivery, as there is only one large delivery in the end of the project (Kumar, Zadgaonkar & Shukla, 2013).

In the years since the first gasoline car was built, the automotive industry have gone through an extraordinary development and has paved way for new production methods (Cromer, Cromer, Foster, and Purdy, 2018). The organizational structure of early car makers were functional focusing on standardization (Midler & Navarre, 2007). Since the 1980's however, the automotive industry has applied a heavyweight project management structure as a solution to achieve a faster and cheaper production with a higher diversification while still ensuring quality, and it has quickly become the core of automotive companies (Midler & Navarre, 2007). The increasing innovation and complexity within the automotive industry however made the heavyweight project unsuitable as it was not able to cope with rapid changes (Midler & Navarre, 2007). The first bits of software were introduced in cars only four decades ago, but since then, the automotive industry is becoming increasingly software-intense (Broy, Krüger, Pretschner & Salzmann, 2007; Haghigatkhah, Banijamali, Pakanen, Oivo & Kuvaja, 2017). Practitioners believe that the software content of a car might increase from 10% to 30% in the upcoming decade, and innovation within the automotive industry is increasingly originating from software engineering rather than manufacturing (Burkacky, Deichmann, Doll, & Knochenhauer, 2018; Haghigatkhah et. al., 2017). With the increased complexity that follows, software engineering is becoming all the more important (Liggesmeyer & Trapp, 2009). Today, the automotive industry is arguably facing its biggest challenge in history. Increased competition and disruptive innovations such as electrification, automation, shared services and connectivity puts increased pressure on automotive

companies to be fast and flexible in order to stay competitive (Aboagye, Baig, Hensley, Padhi, and Shafi, 2017).

By adopting an Agile approach it is possible to create and respond to change and according to the Agile Alliance, one can even succeed in a turbulent and uncertain environment (Agile Alliance, n.d.). Agile originates from software development, where the practitioners experienced that the traditional waterfall approach was inadequate for handling the complexity of their field. In contrast to the traditional approach, Agile requires less up-front planning in favor for continuous planning, the projects are performed in smaller sprints where the product is continually tested to make sure it is developed in the right direction and is still relevant to the end-user (Medinilla, 2012). Small self-organizing teams are at the heart of practicing Agile (Hoda, Noble & Marshall, 2013), where the teams are supposed to work under little or no supervision (Parker, Holesgrove & Pathak, 2015). A manager in an Agile setting is supposed to trust their teams, empower them (Hoda et al., 2013) and practice a servant leadership style (Parker et al., 2015). Agile is however supposed to be more than just methods and work processes - Agile is a mindset that is built upon values and principles (Agile Alliance, n.d.). Organizations that adopted this way of working more frequently delivered projects on time with good quality (Medinilla, 2012).

Since Agile was specifically designed for a fast moving and turbulent environment, which is the challenge today's companies are facing, large established firms have also found the Agile approach appealing (Dikert et al., 2016). Agile is however shaped for "small collocated teams working on small, non-critical, green field, in-house software projects with stable architectures and simple governance rules", and most of the writings on Agile cover smaller organizations (Hobbs & Petit, 2017). One self-organizing team is however not enough for larger organizations who might need dozens or even hundreds of teams. When adopting Agile in larger organizations, a new solution is thus needed. This setup is referred to as Scaled Agile (Rigby, Sutherland, Noble, 2018). Scaled Agile need more coordination (Dikert et al., 2016) and tend to have more dependencies between projects and teams (Lindvall et al., 2004) compared to just Agile. When transitioning into Scaled Agile, organizations have chosen to take different approaches. Many organizations have chosen to create internal Agile scaling methods (VerisonOne, 2018), while others have chosen to follow a framework. These frameworks have been developed in order to help organizations transition, with the Scaled Agile Framework (SAFe) being the one most frequently used (VerisonOne, 2018). SAFe is built on Lean and Agile practises, and is developed for larger companies that have higher dependencies and need for structure (Scaled Agile Framework, n.d.a).

The Agile approach is different from the traditional with its self-organizing teams and servant leaders, thus when implementing Agile it will require changes in the organizational structure and the culture, and will ultimately affect individuals. Volvo Cars Corporation is an automotive firm that have chosen to scale Agile in an attempt to face these challenges.

1.1.1 Volvo Cars Corporation

Volvo Cars Corporation, VCC, is an automotive firm, founded in 1927 and has its headquarter in Gothenburg, Sweden. With its 38 000 employees globally (Volvo Car Group Annual Report, 2017) and almost a century of history, VCC has developed as is common for the automotive industry. VCC has previously had a competence based organization with a strong project focus (Bredin & Söderlund, 2006). In summer 2017, VCC decided to adopt Scaled Agile by implementing SAFe. In Scaled Agile practices, technology and product responsibilities are shifted from line management to developing teams and other specific Agile roles. The line managers at VCC have however always had a prominent

role by managing both people and technology, and has been promoted by being technical competent in their field and succeeding in running projects (N. Pettersson, personal communication, February 5, 2019). SAFe does not properly address the line manager's role, and VCC has chosen to keep the line structure present by incorporating it into SAFe.

1.2 Problematization

Transforming a traditional hierarchical development organization into an Agile one, does pose challenges. Old functions disappear, and new work-tasks emerge and employees could find themselves in new roles. A systematic literature review studying the challenges and success factors of Large Scaled Agile transformation reports a lack of guidance from literature, and "that despite the relevance of the topic for practitioners, research is seriously lagging behind" (Dikert et al., 2016). This becomes especially complex when addressing line management which has traditionally involved continuous supervision and control, something that Agile practices strive to decrease (Sutherland, 2016). The empowered self-organizing teams that the Agile concept is built upon, does not have space for a controlling and supervising manager. Product responsibilities are moved away from the line managers, which is an obvious challenge for VCC where many of their line manager were promoted due to their technical expertise. This also holds true in SAFe, where there is no proper description of the line manager, leaving organizations to make their own interpretation of whether and/or how it could be incorporated. Thus, the question as to how the line manager role in a Scaled Agile organization can be implemented needs to be researched further to aid organizations transitioning to Scaled Agile in the future. Since there is no one solution in how this incorporation is best made, this study aims to shine more light on this topic by mapping out this change at VCC and using three additional organizations as illustrative examples.

1.3 Purpose and objectives

The purpose of this thesis is to map out how a traditional and hierarchical management role can be implemented into an agile organization, focusing on VCC and using three additional organizations to provide a contrast to VCCs structure. Firstly, the study aims to map out the organizational structure VCC and how line management has been incorporated. Secondly, it aims to answer which tasks have been eliminated and/or added in line management, and how this differs between VCC and other organizations that have implemented scaled agile. To do so, this study will cover Agile and Scaled Agile organizational structures, the traditional line manager and agile manager role and compare them to how these roles have been shaped in VCC and other companies. The intended outcome is a descriptive study that maps out the practices at VCC and uses three other companies as examples in contrast to VCCs structure.

This study aims to answer the following research questions:

- 1) How has the line management structure changed when going through a Scaled Agile transformation?
- 2) What tasks and responsibilities have been removed respectively emerged and what does this require of a first line manager in a scaled Agile organization?

1.5 Outline

The introduction of this thesis will be followed by a theoretical framework including traditional, Agile and Scaled Agile organizations and management styles. The framework is followed by an account of the method used in this thesis. Case descriptions of the four organizations are then presented, describing VCCs current organizational structure and choice of Scaled Agile framework, along with brief descriptions of the three additional organizations. The findings describes the changes in organizational structure, the interplay between the PO, ScM and FLM, Line manager responsibilities and challenges of the Line Manager. This is followed by a discussion of the findings, and a conclusion including managerial implications and suggestions for further research.

2 Theoretical Framework

To study the line manager's role in a Scaled Agile organization, it is important to define the different organizational forms that Scaled Agile originates from. In short, Scaled Agile combines Agile and Lean values and practices with hierarchical levels to suit larger organizations in need of more Agile ways of working (Leffingwell, 2010). To deepen the understanding of Scaled Agile this theoretical framework will cover the characteristics of traditional, Agile and Scaled Agile organizations with their respective management styles. Figure 2.1 shows the three theoretical areas of traditional, Scaled Agile and Agile management. "X" marks the area where this study aims to contribute to research by studying the application of line management into Scaled Agile.

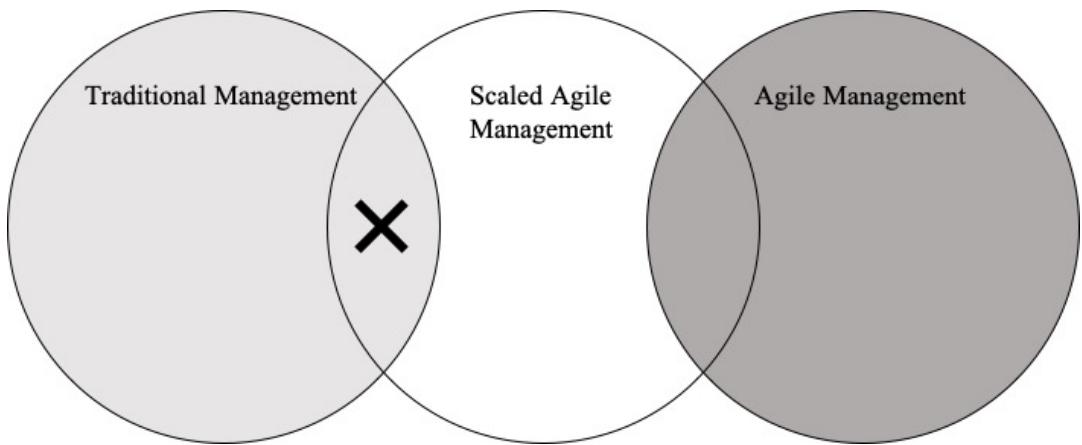


Figure 2.1 The three theoretical areas covered in this study, where the X marks the particular research area this study aims to contribute in.

2.1 The Traditional Approach

This section covers the origin and development of what is commonly referred to as traditional organizational structures. It also describes characteristics of traditional management, followed by a definition of the traditional line manager. The purpose of this section is to provide a brief historical background of traditional organizational structure previous to Agile, and which roles and responsibilities that were commonly attributed to the line manager.

2.1.1 Traditional Organizational Structure

The development of scientific, or classical management techniques began in the early 20th century (Cole, 2004). These principles were developed by practitioners, engineers, with the founding fathers being Frederick W. Taylor and Henri Fayol. With their books *Scientific Management* in 1911 and *General Industrial Management* in 1916 came a practice which focused on command and control, creating hierarchical organizational structures and delegating work (Cole, 2004; Fayol, 1949). These structures were inspired by the military, and favored functional specialization, leading to vertical line functions within an organization (Maylor, 2010). The purpose of the functions was to draw specialized knowledge from each function. The goal was to increase productivity and foster mass production (Peaucelle, 2000). The tasks were heavily defined and good performance was rewarded through bonuses (Maylor, 2010). Weber continued the work by introducing bureaucracy, which focused on defining rules, roles within a hierarchy, and promoting based on merit (Cole, 2004). Social science also emerged,

led by academics such as Elton Mayo studying human behavior, the human factor and motivational factors (Cole, 2004). These hierarchical and waterfall principles of management that developed during this period dominated software development in the 1980's and are still being used today (Larman & Basili, 2003; Maylor, 2010).

In the 1950s, a greater need for project management principles were needed in addition to traditional line management (Maylor, 2010). In 1969, The Project Management Institute was founded as an attempt to collect and share experiences in project management, and later became one of the leading standards for project management (Cockburn & Highsmith, 2008; Maylor, 2010). One year later, Royce (1970) first introduced Waterfall practices in software development. Without using the term Waterfall, Royce's model describes a partly sequential, partly iterative process where each step: preliminary design, analysis, program design, coding, testing and operations, are passed at least twice to provide a early simulation of the final product. However, this model has been misinterpreted by many practitioners as a single-step sequential model which has led to big challenges for project management (Kister, 2016). Changes to the product often became time-consuming and costly, and the lack of smaller product deliveries made it hard for the customer to view the product before final delivery, thus the quality could only be measured at the end of the project (Kumar, Zadgaonkar & Shukla, 2013). In 1996, the Project Management institute published the Project Management Body of Knowledge, PMBOK, which was then very much influenced by Waterfall principles (Highsmith & Cockburn, 2008). Early approaches to software development have thus typically followed the waterfall project methodology combined with a hierarchical line management structure, also referred to as matrix organizations (Maylor, 2010).

2.1.2 Traditional Management

"To manage is to forecast and to plan, to organise, to command, to co-ordinate and to control."

(Fayol, 1949).

This statement comes from one of the forerunners of traditional and hierarchical management. This type of management was based on the view of organizations at the time, where the employee was given little independence and the performance goal was high efficiency (Peaucelle, 2000). In this era of line management, the manager was the one with the highest skills and held executive power, and its responsibilities included; high supervision; tight control in order to manage change and uncertainty; and delegating work (Cole, 2004; Errey and Turner, 2007; Spreitzer et al., 1999). Employees were seen as an interchangeable asset which were trained in detail in how to perform the work, and the source of employee motivation was believed to be money alone (Errey and Turner, 2007; Spreitzer et al., 1999; Maylor, 2010). Management focused on individual performance and the line structure had a clear career path (Maylor, 2010).

When project organizations began developing, a new management style was needed, one who could better coordinate larger project with a combination of functions within the organization (Maylor, 2010). Initially, the project manager role was informal, and often accidental where the manager did not receive any formal education. According to Maylor (2016), project management differed from general management in the sense that project managers are dealing with change, uncertainty and higher risk. The work is not continuous, rather it spans only during the period of the project, and the project manager is responsible for cross-functional activities. Where line management focuses on maintenance, project management focuses on innovation.

2.1.2.1 Line Manager

The skills, knowledge and competencies required of a manager have changed alongside changing organizational needs (Sandwith, 1993). One of the early models comes from Robert Katz, who in 1955 wrote that what made a good administrator were technical, human and conceptual skills, where the conceptual skills regarded the need to understand an organization as a whole and how it functions (Katz, 1955). Sandwith expands these requirements into five competence domains, see table 2.1 (1993).

Table 2.1 The five competence domains of a line manager according to Sandwith (1993)

Technical	Administrative	Interpersonal	Leadership	Conceptual
-Retail	-Personnel Systems	<ul style="list-style-type: none"> -Employee - Job orientation - Job training - Delegation & follow-up - Goal setting - Performance coaching - Feedback 	-Role model for personnel	-Understanding of job role
-Product	-Financial Systems		-Encouraging and developing subordinates	-Knowledge of related job roles
-Internal		-Handling Complaints and conflicts	-Managing individual performance	-Awareness of company mission
-External		<ul style="list-style-type: none"> -Leading meetings and writing reports -Communicating with upper management 	-Developing and managing the work team	<ul style="list-style-type: none"> -Development of innovation and improvement -Short term work section planning

In this model, decision making, i.e. what to do, how to do it etc. is the main activity of the manager and is what these five competence domains are applied for in different hierarchical management levels (Sandwith, 1993). For a FLM, Sandwith describes the technical domain as retail, internal and external (1993). The administrative domain includes personnel systems such as health and safety; performance appraisal; hiring; and promoting, and financial systems such as budget planning; supplies; and human resources. The interpersonal domain included work delegation and follow-up; training and coaching employees; handling conflicts and complaints; and writing reports, making presentations and leading meetings. The leadership domain is concerned with being a role model; encouraging and developing subordinates; managing individual performance; and developing and managing the work team. Finally, the conceptual domain concerns understanding of one's own and relating job roles; Awareness of company mission; working with the development and adaptation to innovation, and changes; and short-term planning.

The research by Kraut, Pedigo, McKenna, Dunnette suggests that the importance of different management tasks within traditional organizations vary depending on their hierarchical level (2005). Their study, which identified “differences in management roles and activities across different levels and functions”, distinguished between FLMs, middle managers and executives. They sampled 1412 managers which rated their perception of the importance of 57 respective managerial tasks divided into 7 categories:

1. "Managing individual performance"
2. "Instructing subordinates"
3. "Planning and allocating resources"
4. "Coordinating interdependent groups"
5. "Managing group performance"
6. "Monitoring the business environment"
7. "Representing one's staff"

FLMs reported that "Managing individual performance" and "Instructing subordinates" was their most common tasks. They included specific tasks such as "motivating and disciplining subordinates, keeping track of performance and providing feedback, and improving communications and individual productivity", and "informing subordinates about procedures and work assignments", "explain work assignments to subordinates", and "Provide technical expertise to help subordinates resolve work problems or questions". Middle managers reported an increased importance of linking groups, and Kraut et. al. (2005) suggests the need to train managers when rising from first line to middle level. They reported "planning and allocating resources", "coordinating interdependent groups", and "managing group performance." Executives reported the most important tasks to be "monitoring the business environment". All management levels reported "representing their staff" to be an important task.

Hales (2005) defines a FLM as "the first level of management to whom non-managerial employees report", which will be the definition used in this study. In his study, he examines the continuities and changes in the role of the FLM. The survey included 135 organizations and focused on previous and current definitions of the role of FLM. It was found that while common perception is that the role has moved away from supervision towards leadership and coordination, the role has been relatively static (Hales, 2005). Apart from occasional middle- and business management responsibilities, FLMs' supervising role had only strengthen. Hales (2005) argues that the reason for this consistency is the position of the role in an hierarchical organization, "within systems of external, hierarchical supervision".

2.2 The Agile Approach

The Agile approach to software development can arguably be what the Lean approach is to manufacturing (Medinilla, 2012). This section will therefore start with a definition and brief history of Agile including Lean and the Agile MANifesto, followed by Agile methods and Agile Management.

2.2.1 Defining Agile

Conboy (2009) states in his paper "Agility from first principles" that one of the issues with researching Agile in regards to information system development (ISD) is that "hardly any two Agile methods or papers adopt the same definition of Agile". Conboy (2009) therefore conducted an extensive literature review in order to conceptualize Agile and according to his findings there are two underlying concepts: flexibility and leanness. Flexibility is thus a part of Agile, but they have frequently been used interchangeably (Agarwal, Shankar, Tiwari, 2016), therefore a more thorough explanation of "agile flexibility" is required. Conboy (2009) defines it as follows: "*the ability of an ISD method to create change, or proactively, reactively, or inherently embrace change in a timely manner, through its internal components and relationships with its environment.*" (p.336). The other concept, leanness, has its origin in japanese manufacturing just as explained in the previous section. Conboy (2009) defines it as: "*contribution to perceived customer value through economy, quality, and simplicity.*" (p.339).

A similar definition, but more focused on the Agile method is provided by Ambler (2009) “*Agile software development is an evolutionary (iterative and incremental) approach which regularly produces high quality software in a cost effective and timely manner via a value driven lifecycle. It is performed in a highly collaborative, disciplined, and self-organizing manner with active stakeholder participation to ensure that the team understands and addresses the changing needs of its stakeholders. Agile software development teams provide repeatable results by adopting just the right amount of ceremony for the situation they face.*” (p. 6).

Since these definitions does not contradict each other this study will use both to define Agile.

2.2.2 Brief history

Lean is a principle that originates from Japanese manufacturing and is both a philosophy and an organization planning tool (Slack, Chambers, and Johnston, 2010). The three main principles of Lean is to involve staff in operations, striving for continuous improvement and eliminate waste. In traditional production, products are pushed through manufacturing and between each station there are buffers so that utilization will be maximized (Slack et.al., 2010). Lean however favors throughput speed and starts production when a request for the product has been made further ahead in the production line, thus assuring that the product meets the specific customer demands. This works by using *Kanban*, where each process signals the previous one when they are in need of components. This principle of Lean is also called *Just In Time*, and uses lower inventories, which exposes problems within the operation so they can be reduced, thus improving quality over time and reducing waste (Slack et. al., 2010). This philosophy drives continuous improvement, also called *Kaizen*, and is dependent on involving staff in improving operations. Lean gives employees more responsibilities and higher autonomy by promoting team-based problem solving, multi-skilled personnel and ownership of the job (Slack, 2010).

Traditional software development was, and still is, characterized by manager-led teams and organized in a hierarchical structure (Hoda et al. 2013). The development process included high documentation and all projects had planning and estimating before any code was written (Medinilla, 2012). This way of working had worked well for traditional projects, but very few IT projects were delivered according to plan (Medinilla, 2012). However, some companies always delivered high quality projects on time and they were working in a completely different way, with small self-organized teams, short iterations and frequent feedback from customers (Medinilla, 2012).

Some teams also started analysing the lean body of knowledge and particularly a paper by Nonaka and Takeuchi “*The new product development game*” from 1986, which took another step towards what today is called Agile. The new product development game occurred due to a fast-paced and competitive reality that started emerging in the 1980s and Nonaka and Takeuchi highlight the necessity to be adaptable to the changing demands of the customer, and to do it fast, in order to survive. The term *agile* is however not mentioned, the authors present instead the holistic or rugby approach, which have six characteristics: “*Built-in instability*”, “*Self-organizing project teams*”, “*Overlapping development phases*”, “*Multilearning*”, “*Subtle control*” and “*Organizational transfer of learning*”.

In the 1990s, further theories were applied to software development such as “queue theory” and “theory of constraints”, which resulted in the work being divided into batches and focusing on removing bottlenecks, which is similar to the lean practices of flow and pull (Medinilla, 2012). Finally, software

development has characteristics of a complex field according to “complexity theory”, where its environment and requirements constantly change and the only way to build products in such settings are iteratively and incrementally (Medinilla, 2012). From this development new methodologies and frameworks emerged, among them i.e. Scrum, eXtreme Programming.

In 2001, software developers practicing different methodologies meet in order to establish the new way of working (Highsmith, 2001). The term Agile was agreed upon and “*the Agile Manifesto*” was stated, acting as a guide for software development, containing values and principles (Highsmith, 2011). The Agile Manifesto is depicted in figure 2.2, where the items to the left is valued higher than items to the right it does however not mean that the items to the right have no significance.

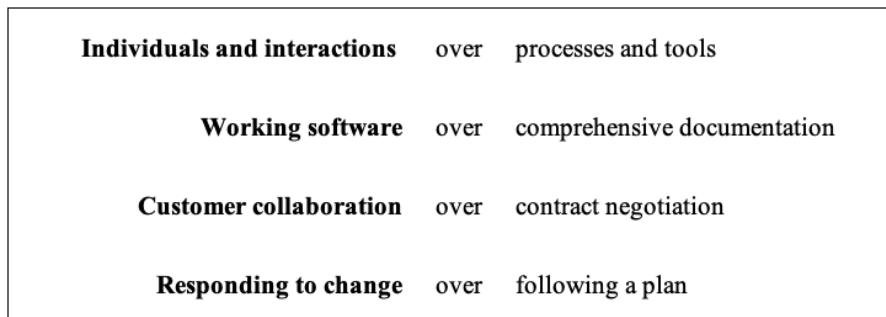


Figure 2.2 The Agile Manifesto

2.2.3 Agile Methods

There are several methodologies addressing the principles of the Agile Manifesto using different tools and guidelines, but there are however many similarities in them (Medinilla, 2012). The methods tend to contain all or a few of the following practises: “*Cross-functional teams*”, “*Iterative and incremental development*”, “*Daily meetings*”, “*Feature-Driven development*”, “*Planning done by the whole team*”, “*Co-location*”, “*Pair programming*”, “*Visual management*”, “*Agile coaching*” and “*Retrospectives*” (Medinilla, 2012). All these practises have, however, not been scientifically been approved as effective (Conboy, 2009) but are nonetheless part of the agile approach.

According to VersionOne’s 12th annual State of Agile report, the most used method is Scrum with 58% (2018). The Scrum Guide contains the definition and rules of Scrum as the authors and practitioners Kevin Schwaber and Jeff Sutherland developed it (Schwaber & Sutherland, 2017). Scrum was officially presented in 1995 and the Scrum Guide is currently available online for free and is frequently updated by its original authors. Schwaber and Sutherland define Scrum as a ”framework within which people can address complex adaptive problems, while productively and creatively delivering products of the highest possible value” (2017). Scrum relies on three pillars: transparency, inspection, and adaption (Schwaber & Sutherland, 2017).

Scrum is performed by the “Scrum Team”, which consists of three roles, one Product Owner (PO), one Scrum Master (ScM), and the Development Team (Schwaber & Sutherland, 2017). The Scrum Team is self-organizing and cross-functional. The PO is responsible “for maximizing the value of the product” and “for managing the Product Backlog” and for the PO to succeed everyone in the organization needs to respect his or her decisions (Schwaber & Sutherland, 2017). While the PO manages the product, the

ScM manages the process (Maximini, 2015) and the ScM do this by making sure everyone understands Scrum and follow its processes and rules (Schwaber & Sutherland, 2017), and soft skills are more important for this role than technical (Maximini, 2015). The ScM is a servant leader providing service to the PO, the Development Team and the organization, and handle the communication to those outside of the Scrum Team (Schwaber & Sutherland, 2017). Neither the PO, nor the ScM is a “boss” so these roles are not considered a promotion or “a step up the ladder” even though they should both be considered leaders (Maximini, 2015). While the PO has authority over the product, the ScM often lacks disciplinary power and Maximini (2015) suggests that existing managers should be evaluated for this role, because of this difficulty. The Development Team consists of the professionals doing the work and delivering the value and should be between three and nine individuals.

Apart from the Scrum Team, Scrum also contains important events and artifacts. The events create regularity and seek to minimize the need for meetings. At the heart of Scrum is a “Sprint”, which is a time-box of four weeks or less that contain all other events (Schwaber & Sutherland, 2017). The work to be done in the following Sprint is planned by the entire Scrum Team at the “Sprint Planning”. The Development Team perform a daily short standup meeting, called “Daily Scrum”, to plan the next 24 hours of work. At the end of the Sprint a “Sprint Review” is held to inspect, and adapt if needed, the Product Backlog, both Scrum Team and stakeholders are present. A “Sprint Retrospective” is also performed, which is similar to the Sprint Review, but at this event the Scrum Team inspect themselves in order to improve. According to Maximini (2015) is only the Scrum Team supposed to be present. The artifacts provide transparency of key information (Schwaber & Sutherland, 2017). The “Product Backlog” is a prioritized list of everything that is needed for the product. An “Increment” is the result of the current sprint and the sprints before, it should be in an useable condition.

2.2.4 Self-organized teams

Self-organizing teams require a different management style and therefore before elaborating on Agile management, self-organized teams will be covered.

“*Self-organizing teams are at the heart of Agile software development*” (Hoda et al, 2013, p.422), which is why a section in this thesis’ theory is devoted to them. Parker et al. (2015) explain self-organizing teams as small groups that are self-regulated and semi-autonomous that determine, plan and manage their day-to-day work and this is done under little or no supervision. Nonaka and Takeuchi (1986) argue that teams can be self-organizing if they fulfill three conditions: autonomy, self-transcendence and cross-fertilization. Cross-fertilization means that the team members have varying functional specialties and self-transcendence implies that the team is establishing their own goals and is trying to override the status quo (Nonaka & Takeuchi, 1986).

According to Cockburn and Highsmith (2001), Agile teams need to have “a common focus, mutual trust and respect”, “a collaborative, but speedy decision-making process” and “the ability to deal with ambiguity”. Parker et al. (2015) highlight the importance of multi-skilling and trained team members because everyone has to be prepared to do the jobs of others if the situation calls for it (2015). Nerur, Mahapatra and Mangalaraj (2005) are consistent with the former views by stating that collective decision-making and cross-functional skills will increase the team’s ability to self-organize. Nerur et al. continue with claiming that Agile teams are supposed to be democratic, where all team members are at the same level, without hierarchy (2005).

Self-organizing and self-managed can be used interchangeable (Appelo, 2011) but according to Medinilla (2012), self-organizing teams does not equal self-managed teams. The teams are not supposed to decide what to build, which market to enter or which clients to approach, which is part of management, also rule setting and impediments removal might be difficult for the self-organizing teams (Medinilla, 2012). This way of working for the teams does however require a different kind of manager compared to the traditional, defined previously in the literature review. Thus, the teams in Agile are suppose to be autonomous, but as stated by the Agile Alliance “*There still is a place for managers*” (n.d.).

2.2.5 Agile Management

According to Appelo (2011), Agile Management is when the management embraces complexity and nonlinear thinking. Hayward (2018) claims that one need to think Agile in order to act on it and also the Agile Alliance (n.d.) state that Agile is a mindset, therefore being a manager in an Agile setting is more about who they are, than what they actually do, which results in emphasis on leadership rather than management. There are however some behaviors that characterizes the Agile manager.

Management in Agile settings is supposed to be facilitative and coordinating (Nerur et al., 2005), the management practices “leadership-collaboration” and trust their teams to deliver to their best potential (Hoda et al., 2013). For self-organizing teams, the manager’s role is according to Polley and Ribbens (1998) to remove impediments that may hinder its teams’ performance and manage outcomes, and in addition to that to build skills (Parker et al., 2015). These teams can be on a different level of self-organizing and therefore require the right amount of managing and leading, this can be called situational leadership (Appelo, 2011). If practicing situational leadership, the leaders are supposed to adopt a different leadership style dependent on different situations and these situations refer to follower readiness (Hersey, Blanchard & Johnson, 2007). Furthermore, by following Agile practices the manager also has to be an adaptive leader, Parker et al. (2015) say it includes “setting the direction, establishing the simple, generative rules of the system, and encouraging constant feedback, adaption and collaboration”. An adaptive leader can mobilize a group of individuals to handle difficult challenges (Heifetz, Grashow, Linsky, 2009). Finally, to support the Agile way a servant leadership style is beneficial (Maximini, 2015; Parker et al., 2015). A servant leader is motivated by serving and empowering followers (Brownell, 1999). A servant leader teach, facilitate, mentor and coach the team, if necessary, and provide transparency so the team can make the right decisions (Maximini, 2015).

2.3 The Scaled Agile Approach

2.3.1 Agile for Large Organizations

Dikert et al. (2016) made a systematic literature review in order to define how large a company is to be considered large-scale. They concluded that any company having more than 50 employees or having more than six teams working in parallel can be considered large-scale. This study employs the same definition.

As mentioned, the concept of Agile was created in small software companies but after learning the benefits and the necessities, large organizations are trying to apply the concept, even though research in the area is lagging behind (Dikert et al., 2016). A large organization does however not work or is not structured similar to that of a small software company, it is even more difficult to implement in larger organizations (Dybå & Dingsöyr, 2009). Large settings need more coordination, and inter-team

coordination can become particularly problematic (Dikert et al., 2016). Larger organizations tend to have dependencies between project and teams to a larger degree and therefore require more formal documentation, which in turn reduces agility (Lindvall et al., 2004). Large-scale Agile also requires interfacing with other organizational units such as human resource and marketing (Dikert et al., 2016).

Bob Hartman, founder of Agile for All, says that scaling Agile can be categorized into four different situations, see figure 2.3 (Denning, 2016). Two of them is when there are multiple Agile teams working on deliver one project, called "Product", or working on multiple products that together form a bigger solutions, this is called "Platform". The other two situations concern spreading the Agile concept in the organization either "Horizontal" or "Vertical". "Horizontal" scaling brings the Agile concept to other departments, whereas "Vertical" is about creating an Agile mindset in the managers of the organization (Denning, 2016).

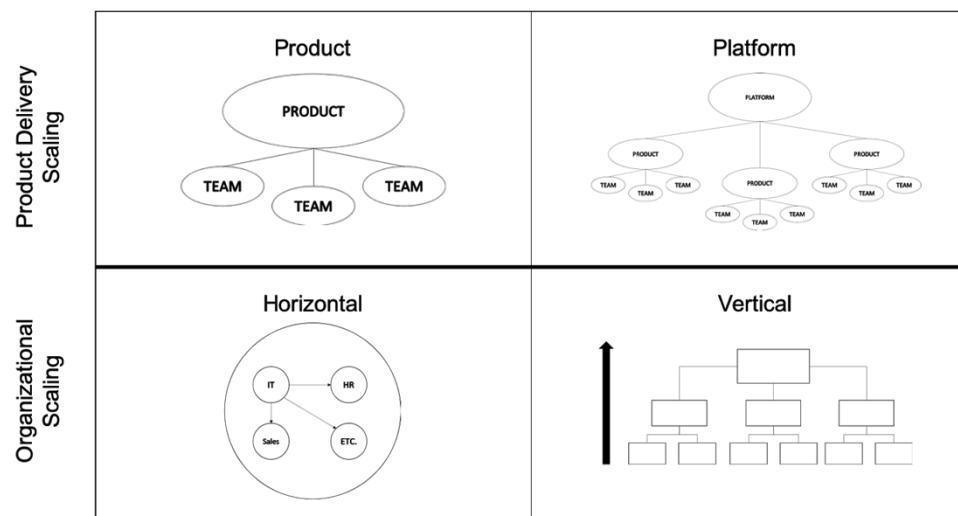


Figure 2.3 Scaling Agile, inspired by Bob Hartman

In order to help companies in this transition, several frameworks for scaling Agile has been developed, for example Scaled Agile Framework, Large-Scale Scrum and Disciplined Agile (VersionOne, 2018). Both Hartman however claim that these frameworks only focus on "product delivery scaling" and therefore lacks methods of making the organization truly Agile (Denning, 2016).

2.3.2 Scaled Agile Management

The existing differences between Agile and large-scale Agile results in a similar view of the manager than the one presented in a previous section, but more extensive.

Moravec (1999) state that operational management becomes redundant. Even though this is a rather cynical view according to Parker et al. (2015) more practitioners agree to some degree (Maximini, 2015). The self-organizing teams are supposed to work very autonomously, and when practice Scrum, the PO takes responsibility for technical aspects and the ScM removes impediments and coaches the team. Therefore, in a small Agile setting the traditional line manager may be redundant, but Medinilla (2012) state "manager-less environments have not been proven on bigger companies". All managers or leaders in an Agile organization, including line management, need to practice a servant leadership style (Maximini, 2015).

Medinilla (2012) presents a list of responsibilities that a manager in an Agile organization should take on: “Motivating and developing Agile teams”, “Managing self-organizing teams and aligning their effort with the purpose of the company”, “Creating an Agile structure”, “Managing workload and capacity in an Agile way” and “Building an Agile corporate culture and driving change”. He does not state that this manager needs to be independent from the Agile team but taking on all these areas go beyond the described Agile roles. Thus, in his view the Agile manager needs to embrace the Agile mindset. Also Appelo (2011) has created a model stating six areas an Agile Manager is responsible for, the first three; “energize people, empower people and develop competence” are all in accordance with what was stated in section 2.2.5. “Align constraints” and “Grow structure” are similar to Medinilla’s areas and this seems to be exclusive to large-scale Agile. Appelo’s (2011) last area “Improve everything” indicates continuous improvement.

According to Maximini (2015), in a traditional organization the line management is responsible for the team, whereas in an Agile organization the line management is responsible for the individual. Individual development paths, feedback and possible role changes are important tasks that the line management should do. In order to do these tasks and, Maximini (2015) states that the manager needs to have frequent feedback loops with its employees. Maximini (2015) also refers to the German researchers Gloger and Häusling’s (2011) book about agile personnel management *Erfolgreich mit Scrum – Einflussfaktor Personalmanagement*, where they claim that the frequency should be weekly for best result. Gloger and Häusling (2011) also emphasize that management should focus on strategy instead of daily routine, and by having self-organizing teams time is freed up for other valuable tasks.

One challenge that organizations face when implementing large-scale Agile is the required shift in mindset in their managers (Dikert et al., 2016). Dikert et al. (2016) claim it is difficult to change mindsets, and yet companies let managers stay in the same position. They furthermore state that many managers felt excluded since their role is very unclear in Agile. Another challenge concerns direct communication. In Scrum, technical disagreements are supposed to be voiced with the PO and process questions with the ScM, the existing literature does however not state what team members are supposed to bring up with their line manager (Maximini, 2015).

2.4 Concluding remarks

Boehm & Turner (2015) writes that when talking with managers working with traditional software development, many express concerns when “*scaling up and integrating them [Agile practices] into traditional, top-down systems development organizations.*” (p. 30). This creates a problem for large traditional organizations which are built largely upon line management (Hobbs & Petit, 2017). From taking part of the theoretical framework of this study, the question of line management in a Scaled Agile organization is somewhat contradictory, as illustrated by the differences in management tasks and responsibilities shown in figure 2.4. All components stated under “Agile Management” are also part of Scaled Agile Management.

Traditional Management	Agile Management	Scaled Agile Management
Individual performance Group performance Provide technical expertise Retailer communication Coordinating between groups Supervise Instruct subordinates Encourage & develop subordinates Monitor business environment Representing one's staff Administration Short term planning Awareness of company mission Training & performance coaching	Servant leadership Adaptive leadership Situational leadership Empowerment Enabler Trust Facilitating and coordinating Remove impediments	Motivating team Developing team Managing self-organizing teams Align to the company's purpose Creating an Agile structure Managing workload and capacity in an Agile way Building an Agile culture Drive change Responsible for individual Develop competence Energize and empower people Recruiting and relocating Improve everything

Figure 2.4 Compilation of the three management styles

Managers in Agile and Scaled Agile are focusing on trusting and empowering their teams, they have ultimate responsibility for individual competence development, and possessing HR expertise. In contrast, traditional managers supervise and instruct subordinates, check for individual and team performance and are supposed to have both technical and HR expertise. Managers in Scaled Agile are also responsible for spreading the Agile way. Researchers have observed organizations that choose to let some of the old hierarchies remain after the Agile transformation (Hobbs & Petit, 2017). Unfortunately, there are limited research in studying how Scale Agile transformations have been performed (Dikert et. al, 2016), which is partly the reason behind the focus of this study .

3 Method

3.1 Research strategy and design

This thesis aimed to investigate the line manager role in a Scaled Agile setting. This research area is novel with practitioners looking for more research (Dikert et al. 2016). Case studies are appropriate in research areas where existing theory seems inadequate (Eisenhardt, 1989) and therefore a case study was deemed suitable for this thesis. VCC had begun its Scaled Agile transformation and was considered a very suitable case. In order to get deeper understanding of VCC and some of their issues, the students also chose to look at three more companies as illustrative examples. All four organizations fulfilled three main objectives which made them comparable to VCC: (1) they are all large enough to be categorized as Scaled Agile, (2) they were at the time of the interviews still ongoing transformation from a traditional organization aiming to become Agile, and (3) they were all working with software development. The organizations did however vary in size, and how far they have gone in their transformation. Because of their size and the limited time, this thesis did not describe the full picture of the organizations covering all departments, but rather provide an insight. Note that this is not a multiple case study, since the investigation on the three additional organizations has not been as thorough as on VCC. This thesis took a management theory perspective and leadership theories were only mentioned when the management theory involved them. Due to time constraints the students chose to narrow down the data collection to mainly address the views of FLMs who had also attained that position before the transformation.

Furthermore, this thesis was performed by using a qualitative research strategy. This was deemed suitable for the thesis' purpose, as Bryman and Bell (2011) claim that qualitative is more suitable when the researched question requires more in-depth understanding of a complex issue. The main method to collect data was through interviews. By conducting qualitative interviews the students hoped to gain an in-depth understanding of how the different organizations had tackled the transforming role of the line manager and their reasoning behind the transformation.

Design in qualitative studies is an ongoing process which involves going back and forth between the components (Maxwell, 2012). This thesis was no exception, theory, data collection and analysis was done both explanatory and in an iterative way with an theory outcome purpose, which are characteristics of an inductive approach (Bryman and Bell, 2011). The students drew general conclusions from specific observations.

3.2 Research process

The research process of this study is depicted in figure 3.1 below, which contains a pre-study, creation of a theoretical framework and research questions, data collection and analysis, and finally a discussion and conclusion based on findings and theory.

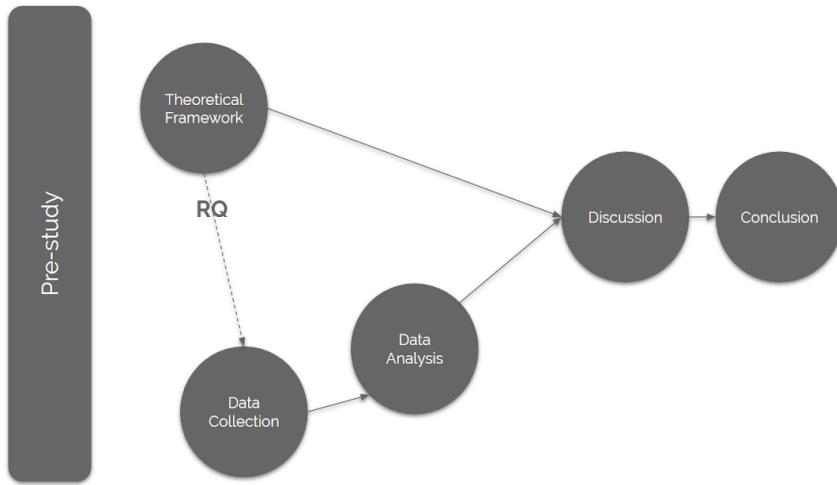


Figure 3.1 Schematic figure of the study's research process

The basis of the study came from the student's interest of studying Agile leadership. Through their supervisors at Knowit Insight, it was identified that VCC was facing challenges in implementing line management when transitioning into Scaled Agile. To better understand and identify potential problems and to become familiarized with previous research, a pre-study in the characteristics of traditional, Agile and large Scaled Agile organizations and their management styles was performed. Further, the students gained knowledge in how to perform qualitative interviews to make sure that the conducted interviews would be valuable for the study's purpose. Additionally, the students attended 3 days of courses in VCCs chosen Scaled Agile Framework to get a better picture of their organizational structure. The supervisors from Knowit Insight, VCC and the students then met to discuss the thesis. Following, the theoretical framework was built as a basis for the study, focusing on the characteristics of traditional, Agile and Scaled Agile organizations and their respective management styles. By compiling the theoretical framework, the students could get a theoretical description of the line manager in both a traditional organization and in an Agile organization. The students were also able to access internal documents which gave a better understanding of VCC. Based on the theoretical framework, the research questions were then formulated.

An interview template was then formulated, see Appendix A. The template remained much the same during the interviews, but some topics were added during the interviewing process. Bryman and Bell (2011) suggests that interviewees get informed of the content beforehand, therefore the students sent out emails describing the purpose and aim for the interviews. During the interviews, the students used the template, a recorder and a notebook as aiding material. The first interview was conducted with an employee in upper management at VCC to gain a perspective of the organizational structure and the line manager role. This was followed by the rest of the interviews at VCC in no particular order. All interviews were semi-structured, and the topics of the interviews concerned changes in organizational structure; change of tasks and responsibilities for the FLMs; and the FLM role description and its importance. The interviews were transcribed, and the result was coded parallel to conducting the interviews. After finishing the interviews at VCC the template was revised before initiating the

interviews at the three remaining organizations. The purpose of interviewing additional organizations was to get examples that could give a deeper understanding of the situation at VCC.

The findings of the interviews were then compiled into case descriptions of each organization, their changes in organizational structure, the interplay between the ScM, PO and FLM, and challenges for the line manager. The findings were later analyzed with the help of the theoretical framework, and the possible implications were discussed. The study ended in a conclusion including managerial implications and thoughts for future research.

3.3 Data collection

3.3.1 Primary data

As mentioned above, the primary data was collected by conducting interviews. Qualitative interviews can gain insights into the interviewee's own point of view when allowing the conversation to get "off-topic". The interviews were semi-structured, that is, an interview template with questions and topics was prepared before performing the interview in order to guide the interview. In a semi-structure it is however important that the guide is flexible to enable the interviewee's free thoughts, but focused enough so that the students get answers to what they seek (Bryman & Bell, 2011). For simplicity all interviewees will have a female pronoun.

The interviews were done by the two students and were recorded. All interviews were done in person at the organization's offices. In accordance with research ethics, all interviewees first approved to being recorded and they are all anonymous. All interviews were then listened through and transcribed. In addition to the interviews, information was gathered through informal conversations with a Change Management Specialist at VCC, who acted as the supervisor of the students during the thesis.

For this case study, 16 people have been interviewed whereof 10 at VCC and two each at the three additional organizations. The interviewees at VCC were working in four Software Development departments totaling approximately six thousand employees. Their roles are listed in table 3.1. The interviewees were sampled from mainly two categories; FLMs who had a line management role previous to the transformation and could give a perspective to past and previous line manager responsibilities; and employees in top management who could provide an overview of the organizational structure. At VCC, five FLMs, one Senior Director, one Deputy Vice President and one Section Line Manager was chosen for the interviews. The Deputy Vice President had been at Volvo since 1987 and could therefore give a clear recollection of events. In addition to these, one developer and one ScM has been interviewed to provide a team perspective.

Table 3.1 Interviewees at VCC

VCC	Job Title	Interviewee
	Deputy Vice President	
	Developer	
	First Line Manager	FLM 1
	First Line Manager	FLM 2
	First Line Manager	FLM 3
	First Line Manager	FLM 4
	First Line Manager	FLM 5
	Scrum Master	
	Second Line Manager	
	Senior Director	

To provide a contrast to VCC's implementation of the line management structure in Scaled Agile, six interviews at three additional organizations were sampled, see table 3.2. The organization were chosen because they were large sized and were going through a Scaled Agile transformation, and because they also had offices situated on the Swedish West Coast. All interviewees were working in Software Development departments. The interviewees from organization A were one Change Manager and one FLM in two different departments. At organization B both interviewees were FLMs. At organization C, the two interviewees were a Vice President and a FLM in two connecting departments. At each organization, the FLMs had been working as FLMs previous to the Agile transformation.

Table 3.2 Interviewees at the additional organizations

Organization	Job Title	Interviewee
A	Change Manager	
	First Line Manager	
B	First Line Manager	FLM X
	First Line Manager	FLM Y
C	First Line Manager	
	Vice President	

3.3.2 Secondary data

The students had access to VCC's intranet and could therefore collect secondary data, in the form of internal documents. These documents described the organizational structure, role descriptions, and VCC's view of Agile leadership and group dynamics. The organizational structure and role descriptions gave the students a quick understanding that could be confirmed and deepen during the interviews. VCC's view of Agile leadership and group dynamics gave the students an overview which aided in developing the interview template.

3.4 Data analysis

The students followed an iterative coding process in order to generate categories related to the research questions from the collected data. Familiarization and reflection were first initiated by shifting through available data with the research focus in mind, trying to merely understand the data in the light of theory and in relation to each other. As soon as the first interview was transcribed, the students noted down phrases and statements that was said by more than one interviewee, trying to tie each of them to the two research questions. According to Easterby-Smith, Thorpe, & Jackson (2015) this is “Open Coding”, which is the first step in “making sense” of the data. Once the initial codes were determined, the students tried to see patterns and links between them and recorded frequency and perceived significance in order to generate concepts. After this, the students performed a focused re-coding, which means one rework the codes and the data (Easterby-Smith et al., 2015). From the concepts and first open coding, and by going back to the interview data, finalized categories could be established where all relevant gathered data could fit in. They were *Changes in the Organizational Structure*, *The Interplay Between PO, ScM and FLM*, *Line Manager Responsibilities*, and *Challenges of the Line Manager*.

3.5 Research quality

Bryman and Bell (2011) suggest that for qualitative research, the most important factor for ensuring high quality in the research is trustworthiness. Trustworthiness consists of credibility, transferability, dependability and confirmability. To ensure credibility, the students performed respondent validation by confirming the interviewees’ statements with them, thus making sure that the answers were exactly as what the interviewees intended. Higher degree of credibility can also be achieved by using triangulation that is multiple data sources (Bryman & Bell, 2011). This thesis’ data collection consisted of multiple interviews, internal documents, informal meeting with VCC employees and access to VCC’s intranet. By interviewing three additional organizations, the result gained a higher transferability, implying that the topic of the thesis could be applied on other organizations of a similar organizational structure. To ensure dependability, the students kept records during the research process by saving interview templates (see Appendix A), transcripts, interview notes and recordings; explaining the sampling of the interviewees; and keeping records of their data analysis process. Since the topic of this thesis was novel to the students, they held no personal values in the subject. The students had supervisors from both Knowit Insight and VCC, but was allowed to work independently, ensuring confirmability.

All interviewees were informed prior to the interviews of the subject, purpose and aim of the interviews. No interviewee was forced to attend and could refuse to participate at any time. The interviewees were kept anonymous and consent was assured before recording. This conduct was in accordance with Bryman and Bell’s (2011) requirements for proper ethical conduct: “harm to participants”, “lack of informed consent”, and “invasion of privacy and deception”.

4 Case descriptions

This section contains descriptions of each organization included in this study, focusing on VCC. The information is gathered from the interviews, internal documents, and the companies official websites.

4.1 Volvo Cars Corporation

VCC is an automotive firm, founded on the West Coast of Sweden. VCC employs 38 000 globally, but the departments investigated in this thesis sum up to about 6 000 employees, all of which work with software. The big implementation for becoming Agile started in summer 2017 and VCC deployed a framework called SAFe.

4.1.1 SAFe

The Scaled Agile framework (SAFe), was first mentioned by the founder Dean Leffingwell (2007) in 2007 and the first version was published in 2011 (Scaled Agile Framework, n.d.a). SAFe's knowledge base is today available online for free, and provides a guide and structure for how teams, activities, roles and artifacts should be designed in a large organization to fit the Lean and Agile principles, where Lean-Agile leadership is one of SAFe's core values (Scaled Agile Framework, n.d.a). SAFe is organized around value streams, i.e. the value the organization is delivering to their customers. All information in this subchapter (4.1.1) is retrieved from the SAFe website.

There are four different configurations of SAFe, essential SAFe, large solution SAFe, portfolio SAFe and full SAFe (Scaled Agile Framework, n.d.b). The differences are regarding which levels are included of team level, program level, large solution level and portfolio level, see figure 4.1. The question of which SAFe configuration that is most suitable depends mainly on the size of the organization; essential is for smaller (50 employees) ones, and full is for organizations with several thousand employees. The framework is pyramid shaped in terms of size, where the portfolio level is managing several Solution Trains, each containing several Agile Release Trains, ARTs, each containing several teams. The three bottom levels (team, program an large solution) is distributed into three main responsibilities: *what* gets built, *how* it gets built, and the *execution and operation of servant leadership*, as depicted by the circle of roles aligned vertically on the left side of figure 4.1. The grey rectangular on the left side of the framework contains support functions. One of them is Community of Practice. Each role has their own Community of Practice which encourages colleagues to discuss issues and share best practice.

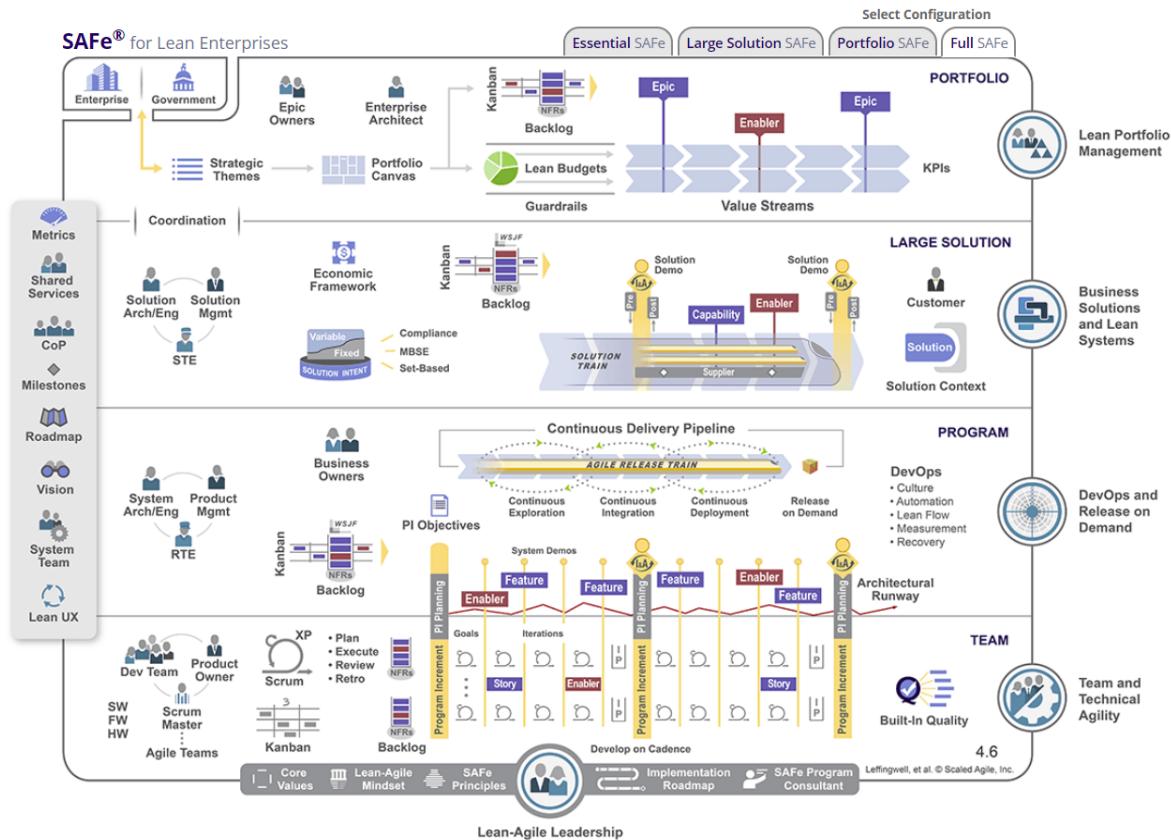


Figure 4.1 SAFe, (www.scaledagileframework.com, 2019)

Portfolio Level (Scaled Agile Framework, n.d.c)

The portfolio level is the highest level of SAFe. This is where long-term strategies and plans are made and set for the entire organization. In the portfolio level practices like Lean budgeting, investing and governing are included. The purpose is to organize the enterprise in a Lean-Agile way. The work done at portfolio level results in an Epic, which are large initiatives that the enterprise wants to conduct, and Enablers, that are supporting the Epics.

Large Solution Level (Scaled Agile Framework, n.d.d)

The Large Solution Level consists of a Solution Train. One organization can have several Solution Trains that together deliver Epics. Each Solution Train is managed by three roles: the Solution Manager (responsible for what), the Solution Architects/Engineers (responsible for how), and the Solution Train Engineer (responsible for execution and operation of servant leadership).

Program Level (Scaled Agile Framework, n.d.e)

The Program Level consists of an ART. Every ART consists of a number of teams, and several ARTs combined forms one Solution Train. The three management roles at program level are: The Product Manager (responsible for what), the System Architect/Engineer (responsible for how), and the Release Train Engineer (responsible for execution and operation of servant leadership).

Team Level (Scaled Agile Framework, n.d.f)

The team level is the foundation of SAFe and the level where essentially all the value creation is done. This level is where the Agile teams within an enterprise is located. The Agile team is self-organized and responsible for how the work is done, and consists of one PO (responsible for what), one ScM (responsible for execution and operation of servant leadership) and a number of developers. The preferred working process is Scrum, but also Kanban or XP can be used. The work tasks are called

Stories, which the developers are responsible for doing, but it is the PO that prioritize them, accept new ones and announce them as done.

Since SAFe partly uses Scrum, all events and artifacts found in the Scrum Guide is also implemented with slightly different variations. Program Increment (PI) and PI planning are important to understand in this case. A PI is a time box for when a ART is delivering value. A PI is supposed to be 8-12 weeks (Scaled Agile Framework, n.d.g). Prior to the PI, the ART has a PI planning event, which is a two day activity with all ART members present in preferably one big room (Scaled Agile Framework, n.d.h). During this event the following PI's objectives are presented, the teams commit to stories and try to solve dependencies with other teams. The ScM is part of the team and is active by supporting their team during the PI planning..

4.1.2 VCAF

VCAF, Volvo Scaled Agile Framework, is an extension and modification of SAFe. SAFe did not explain where a line manager fits into the organization. Therefore, VCC added a line structure to SAFe, since the framework is interpreted as an organizational structure itself. Every level of the framework has a corresponding level in the line structure. To SAFe, VCC made modifications and added Vehicle Streams. Vehicle Streams are several merged product streams that essentially builds a car. Volvo Cars Agile Framework (VCAF) is what this adapted SAFe at VCC is called, see figure XX. At the time of the interviews VCC had 60-70 ARTs running.



Figure 4.4 VCC's Agile Framework with its line management structure

At the first level, team level, in SAFe the Scrum team is placed, the team consists of a ScM, a PO and the development team. The first line manager (FLM), is however a VCC specific role. At the time of the interview, the teams were cross-functional rather than specialized like before the transformation. VCC talks of their management roles as the “three Ps”; people, product and process. At team level, the three Ps consists of the FLM (People), the PO (product) and the ScM (process). The Portfolio and Large Solution Level has management responsibilities similar to the first level, with responsibilities are

separated into the three Ps. Here, the Program and Solution Manager is responsible for product, the System and Solution Architect/Engineer is responsible for Process, and the Second and Third Line Manager is responsible for people.

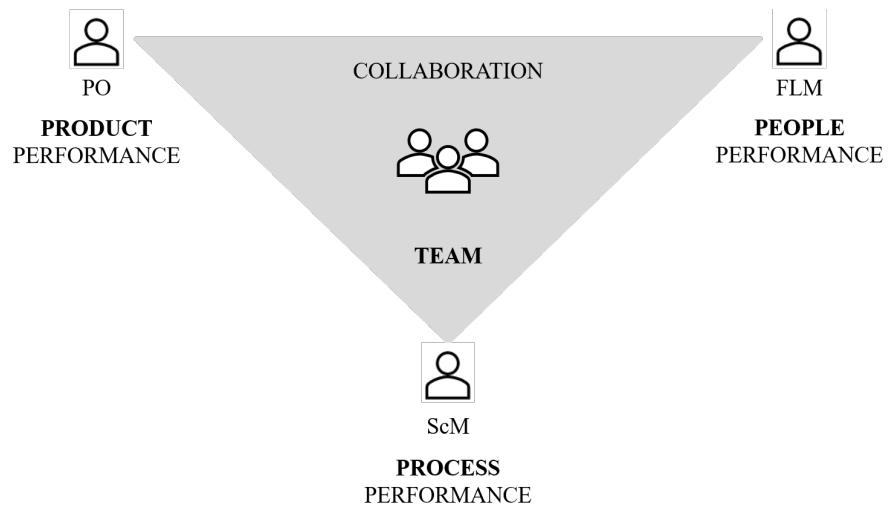


Figure 4.3 Roles and collaboration at VCC's team level

PO	ScM	FLM
<p>My purpose is to maximize value-added work by owning and deciding upon priorities in the Team Backlog from a business perspective to streamline execution, while maintaining technical integrity of the features/components for the team.</p>	<p>My purpose is to be a servant leader and coach the team using Agile team practices with focus on flow and take lead in continuous improvements.</p>	<p>My purpose is to be a servant leader and have complete employee responsibility including work environment, and continuously assist in aligning teams to long term strategies.</p>

Figure 4.4 The purpose of the PO, the ScM and the FLM at VCC

4.2 Additional organizations

4.2.1 Organization A

Organization A is a leading provider of Information and Communication Technology to service providers, with their networks carrying 40% of the world's mobile traffic. Organization A has more than 95 000 employees worldwide, and begun their agile journey in Sweden in 2009. They have not chosen one specific framework to follow, rather they have picked concepts from several frameworks and developed some solutions of their own. The interviews were conducted at one of their Swedish offices.

4.2.2 Organization B

Organization B is creating software solutions for automotive retailers and is aiming to digitalize Swedish and Norwegian dealers. It is the smallest of the companies investigated in this study, but with its 100 employees in the software development department (200 in total), Organization B is still categorized as large-scale. Organization B started its agile journey in 2016, and have chosen not to adopt a specific framework. The interviews were conducted in their office in Sweden.

4.2.3 Organization C

Organization C is an automotive technology and product development organization of a larger industry group. Organization C operates globally and has 7 000 employees. Organization C officially began their agile journey in 2016. Organization C has adopted parts of SAFe and had ARTs running at the time of the interviews. The interviews were conducted at one of their Swedish offices.

5 Findings and analysis

This section will cover the information gathered from VCC and the three additional organizations. The first and most substantial part describes VCC, their past and present organizational structure and changes and challenges of the line manager role. The second part covers the result from interviewing three additional organizations.

5.1 Volvo Cars Corporation

5.1.1 Changes in organizational structure

Before transforming into Scaled Agile, VCC had a functional and hierarchical organizational structure and were running waterfall projects. The organization had a line- and a project structure, with project managers present on the first line level. Line managers were often recruited based on their technical knowledge and were responsible for specific areas regarding both people and product, and according to FLM 1 the line manager was traditionally in charge of managing and distributing work.

The Deputy Vice President described this way of working to be insufficient when it came to software development. The communication between different projects were lacking, causing two separate project to be developing almost an identical product or feature independent from one another, thus doing double the work. The Deputy Vice President explained that the first requests to adopt Agile came from the developers themselves. Her department began trying out Agile methods on team level early out at VCC in 2010-2011. In the beginning the Agile teams had to adapt to the rest of the “waterfall organization”. More and more teams started working accordingly to Agile practices and eventually in summer 2016 the board of VCC decided to “go Agile”. The Deputy Vice President explained that they realized that having teams working Agile is not the same as Agile on the enterprise level, and an investigation was initiated to find a framework that could assist their transition. VCC eventually chose to adopt SAFe. The SAFe implementation started in the summer 2017, but an obvious problem in VCC case was according to the Deputy Vice President that the framework lacks a line structure, which is necessary for structure and also because every employee is legally required to have a manager. VCC thus developed VCAF, a framework built upon SAFe but modified and extended. According to FLM 2, the change was communicated early on, and information of the ongoing process was available through the organization’s intranet. All interviewees have received education in Scaled Agile and their line managers have been driving the transformation to a varying degree.

The teams have gone from being specialized to cross-functional. The FLM is responsible for the team, the ScM and sometimes the PO. The placement of the PO varies throughout the organization, and sometimes the PO is placed below the Second Line Manager, see figure 5.1. The Senior Director said that top management has deliberately chosen “*not to put our foot down*” in terms of setting the structure, but rather give employees the freedom to create their own structure that suits them best. If the Second Line Manager is responsible for the PO, the PO is at the same hierarchical level of the FLM. This could be either advantageous or disadvantageous. When the Second Line Manager is responsible, the FLM is relieved from HR responsibility of the PO and thus can give the PO more space. The Second Line Manager expressed concerns that she could not give the POs enough of her time, and that POs could in effect be getting too little attention from line management. The ScM was worried that the separation of the PO might lead to them getting a position of power and viewing their role as more of a project leader.

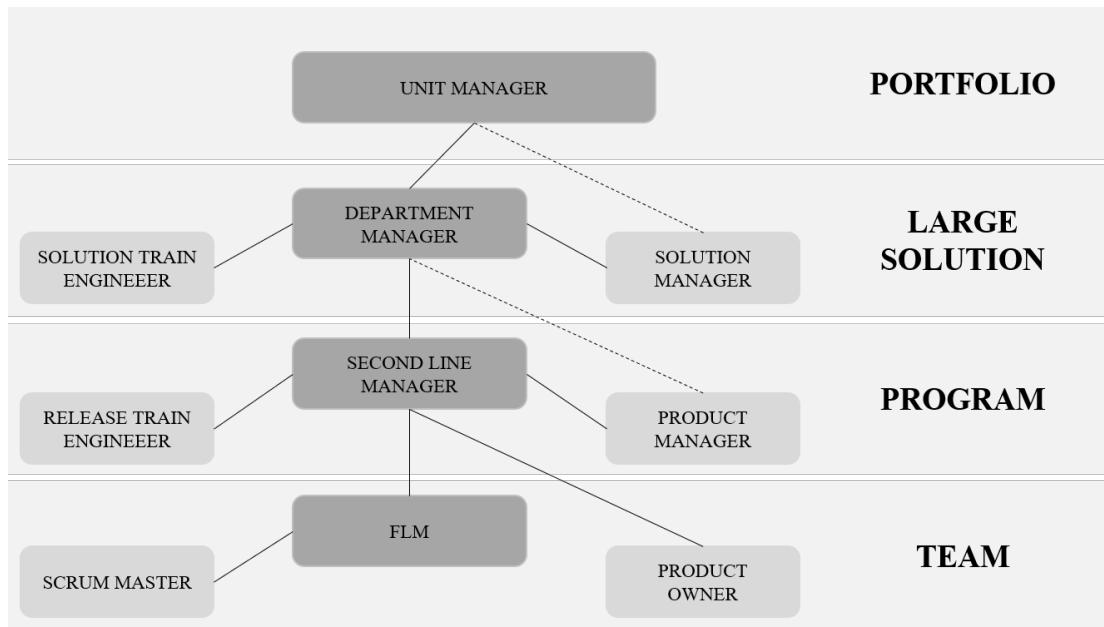


Figure 5.1 The Agile line manager structure at VCC

From conversations with the supervisor at VCC, she mentioned that there had been discussions about moving the ScM one level upwards to receive balance. The supervisor emphasized that the ScM is from the leadership perspective perhaps the most challenging role, because it's lack of power compared to the PO and FLM makes it an informal leader, meaning that the ScM needs to put even more effort on successfully leading, not managing people.

The Second Line Manager explained how she and her colleagues at their managerial level were trying to work Agile together by using Agile methods and viewing themselves as a team. They also performed evaluations on themselves and communicated to the developing teams what areas within Agile they needed to improve in.

The flow of information within the organization has changed when transitioning to Scaled Agile. FLM 2 explained that all information previously went through the line unless it was specifically project-related. That way, they took part of technical information which they then shared with employees. In Scaled Agile, since they are not involved with the product, the information they received concerns only “line information” as FLM 2 put it, i.e. budgets, strategies and HR.

5.1.2 The interplay between PO, ScM and FLM

At VCAF’s team level there were three roles that supported the team: the ScM, PO and FLM. These three roles were referred to as “The Trinity” by all interviewees and it was argued that it is important that the three of them are working tightly to do what is best for the team. The tasks and responsibilities of each role are stated in their role descriptions, see Appendix B. All interviewees deemed the role descriptions to be important in the beginning of the transformation but less important for the daily work once the new organizational structure has set. According to FLM 5, both managers and individuals need to work together and focus less on their individual responsibilities and more on creating output for the team, as the quote illustrates.

"It's simply required to have something to start out from, at least in the beginning. But later on, especially in this way of working, everything becomes one big gray area, so it's important to keep in mind- you can't blindly follow a model, rather use it as a point of reference and then test yourself what works well."

FLM 5 expressed concerns that the role description could become an obstacle if employees became too locked in within their own role description and responsibilities.

"They are important. But I am allergic to when you are sitting in a meeting and need to get something done, and someone's sitting on a chair saying: that's not in my role description so I can't do it. No [it doesn't], but we are a team and we are going to solve this task."

FLM 4 made an analogy, explaining that the three roles could be looked upon as a carpenter, plumber and electrician when building a house. They all have their own tools and responsibilities but in order to actually build the house they need to cooperate. The ScM stated that the trinity represents three perspectives and good conflicts between them is beneficial. The Deputy Vice President however expressed concern for these conflicts turning into more tense situations and mentioned a situation where a ScM had taken her team on an off-site team building activity without even telling the team's FLM, which did not end well.

FLM 4 shared her perspective on how the distribution of responsibilities should look like. She said that the FLM must understand what challenges they are facing, in both short and long-term. This includes technical areas, but the PO should still be responsible for them, but it is essential that the FLM understand which competencies within the group will be necessary. The Scrum Masters should handle most of the planning and keep the pace. The FLM need to communicate with the Scrum Master to gain insight to the teams current competence level and understand how the people in the team are feeling.

Apart from having technical competence and being responsible for the current product, at VCC there is the question of how strategically involved the PO should be or rather how much of the strategic responsibilities should the PO take over from the former FLM role. According to FLM 2 this degree varies throughout the company, and she sees it as POs having the technical strategic focus in the short run and that she as a FLM should have a long-term perspective and taking care of supplier contacts. But she could also see the PO having the full technical strategic role while she is responsible for recruiting and staffing to fit the required product strategy.

A ScM role at VCC can be either a part-time or full-time position, where a full-time position usually means having more than one team. The ScM, who herself was 100% ScM, claimed that if you are not devoted completely to one thing you will not be as good at it, and referred back to when she was both developer and ScM and how that did not work well. Another positive aspect of having more than one team for the ScM according to FLM 4 was not having to repeat past mistakes. FLM 5 said that a disadvantage however of having more teams is that for example during a PI Planning, the ScM has to be available for several teams at once.

The ScM role and its responsibilities are novel to the employees and sometimes they seem to not fully understand what the ScM can do. The Second Line Manager described that during a workshop, without the ScM present, with the purpose to define tasks and responsibilities for the trinity, most was

divided between PO and FLM, with little left for the ScM. The developer however, believed the ScM to be the channel of communication between the team and the FLM, which indicates no direct contact between the FLM and the team.

“... they [the team] talk to the ScM, who then talks to the FLM.”

5.1.3 Line manager responsibilities

FLMs have previously been recruited based on their technical skills and ability to lead projects on group level according to the Deputy Vice President. The Second Line Manager, who had previously had a FLM role, explained that the FLM was previously responsible for people and product, and that the technical competence was of great importance. The product responsibilities included deliveries to projects, and product strategy according to FLM 2. According to the Second Line Manager, this meant that the FLM was always in need of a lot of technical information, which was taking focus and time away from one-to-one meetings with employees. FLM 1 described the previous structure as command and control, with management focus on dictating and distributing work. With Scaled Agile however, she explained that the FLM is supposed to be a supporting role towards the team. FLM 1 did not see that as a difficult transition since she always strived for this way of working. FLM 3 described that the prioritization of tasks and offering technical support had disappeared since Scaled Agile. According to the Deputy Vice President, the FLM is expected to let go of their product responsibilities to the PO. However, FLM 1’s view is that as long as the FLM is responsible for the PO, they will always be involved in the product to some degree.

At the time of the interviews, the FLMs were responsible for the staff in terms of employee health, recruitment, feedback and evaluation, competence development, salaries, and work environment, according to all FLMs. They also attended different sync meetings with the PO and ScM, upper management and developers, although the number of meetings were less than before according to FLM 2. It was still undecided whether the FLM should attend retrospectives. FLM 1 believed that retrospectives could be a good chance of understanding team needs, however developers could have more difficulties discussing openly when the wage setting manager was present.

The role description of the FLM states that they should be a servant leader. At the time of the interviews some teams were not very mature and thus not autonomous, and FLM 1 argued that the FLM had to adopt situational leadership, and might need to step in more often initially to give support to the team. When teams become more matured however, she emphasized the need to give the teams more space. FLM 5 said one of the main tasks of the FLM is to motivate the teams, ensure competence levels, and build trust. She also runs one-to-one meetings with every developer in her teams every second week. The Second Line manager also brought up coaching new leaders to be an important task for the line management.

FLM 2 felt that Scaled Agile had freed up more time, however most of that time she spent on managing the transformation. She was less involved with daily operations at the time of the interview, and her main responsibilities were staff, work environment and competence development. The Senior Director described the FLM responsibilities to have transitioned more towards HR and strategy, however, FLM 5 argues that the FLM still needs to have some technical knowledge to be able to fill the team’s needs and support them. This view was also shared by FLM 1. FLM 5 perceived that it had gotten easier to

get in contact with HR, and that she has been in contact with them more for the past month than during a year's time before the transformation.

Technical strategic responsibilities varied between different departments. FLM 3 were unsure of who should take on strategic discussions with suppliers, however the daily technical delivery questions have been removed. FLM 2 said that it was initially intended that the FLM had long-term technical strategic responsibilities, but that this had been solved differently throughout the organization. Some FLMs appeared to have no technical strategic responsibilities, but she noticed that many FLMs still held on to it. Her impression was that if the FLM were still heavily involved with the technology, no substantial change had occurred. She still managed contacts with suppliers since it had traditionally been made by the FLM and most suppliers expected to talk to a manager. The Second Line Manager's intention was that the FLMs could support the POs in supplier strategy when necessary. She believed that the FLM could have more long term strategic responsibilities such as competence development.

The question of who holds the responsibility of the team vs the individual has varied throughout the transformation. According to FLM 1, 2 and the Second Line Manager, the FLM initially only had responsibility for the individual and the ScM had a team focus, but FLM 2 argued that one cannot develop the individual without having a team perspective. At the time of the interview, the FLMs were responsible for the team, and both 1 and 2 were trying to develop the team competence instead of looking at individual competence development. This to create competence breadth within the team so that it is less dependent on single team members.

The future of the FLM is uncertain, and FLM 1 was unsure what tasks the FLM would take on in one or two years time, once the transformation was complete. The Second Line Manager believed that there might be fewer line managers in the future, and that they would take on more employees. FLM 4 believed that HR staff could become FLMs in the future if they were willing to learn more about the product. She also believes that the FLM could take on more HR tasks. She would have wanted FLMs to get more autonomy and responsibility for recruitment and setting wages in the future.

5.1.4 Challenges of the line manager

One challenge for the FLM in the Scaled Agile organizational setup was the perceived distance to its team. After leaving the day-to-day business behind, FLM 2 and FLM 3 had the feeling of interacting less with their teams and losing some of the understanding of what they were doing, which made it more difficult to give feedback than before. FLM 3 also believed this problem will grow bigger the more time passes, since the FLM will remember less and less of the daily work. As a result of not going through legal organizational structure changes yet, FLM 2 not only has two full teams but is also responsible for stray individuals in other teams. These individuals were particularly difficult to assess since she felt that she did not even have the time to talk to their ScM or PO, and that they were physically located further away. Not all interviewees did however share this view on the distance. The ScM claimed the distance decreased due to the FLM only focusing on soft questions resulting in a closer relation. FLM 5 had a similar view and thought the daily stand-ups and more freed time for one-to-one meetings had improved the relation to her employees.

Many of VCC's line managers have technical background and it is difficult for some to let go of the product responsibilities. The Deputy Vice President had seen different reactions to the FLM's loss of product responsibility. Some FLM's were relieved to have more time to engage in HR responsibilities and to develop people. Others had a very hard time letting go because they felt that their expertise and

interest was with the product. For those individuals, VCC tried to encourage them to become POs instead. This challenge has been brought up by all interviewees, and the following quote is from FLM 4.

"And a few of those that are Team Managers [new title for the FLM] could have been Group Managers [old title for the FLM] in the past, and there is a big challenge here: when you have been a technical manager and a staff manager, to not stick your nose in and only manage the soft areas if that is what you have chosen."

FLM 3 confessed that this is something she is struggling with and that the former line manager role, with both personal and technical responsibilities, suited her really well and that she did not want to pick only one. Also FLM 2 struggled with this at times but she said that one of her ScMs kept her in place. FLM 3 also argued that keeping technical strategical responsibilities while not being involved in day-to-day operations could be challenging since an FLM might no longer be up to date in technology.

In order to make the teams work Agile, positive role models needed to be found in manager positions according to FLM 4. She further argued that if the line management has a negative attitude towards Agile, it will never work. Much of the information of the change has been up to every line manager to communicate and FLM 5 described that the issue of negative attitude had occurred at some departments. The Second Line Manager and her manager group has however truly tried to set an example of how even upper management can work Agile. They tried to be as transparent as possible, working with a backlog and working iteratively, however she believed that this was still rather unique at VCC.

By using SAFe another challenge also arised due to the line management not being satisfactory mentioned in the framework. FLM 4 thought it to be unfortunate that the FLM role is not described, and the Second Line Manager worried that that caused people to not wanting to be a line manager anymore. The ScM said the framework is good, but they need to remember that it is only a blueprint and they need to move away from the frame eventually.

Furthermore, the distribution of tasks and responsibilities within the trinity is not obvious to everyone at VCC. The developer who had not yet started working in Scaled Agile explained a workshop where she and her team performed a simulation of the new organization and working process. At the end of the workshop she and her team did not know what the FLM could help the team with or when to approach the FLM.

Since the FLM core responsibility has shifted to people and freed up more time for HR questions, the expectations of how well they can deal with them has risen, but FLM 2 state that even so, no additional education regarding HR have been offered. She was also relying more and more on the ScM view on her employees even if she felt uncomfortable breaking the trust to her employees by bringing in a third party. Lastly, the ScM brought up that the reward and wage system is still based on individual performance which could be a contradiction to team work.

5.2 Additional Organizations

5.2.1 Organization A

5.2.1.1 Changes in organizational structure

Organization A had previously had a strong matrix organization with a line and project structure. The organization was then structured into competence areas, and releases were made twice a year. The Change Manager explained how the organization in 2008-2009 started to move away from project and towards a process based structure with cross-functional and independent teams. In 2011, the organization moved towards Agile practices and started to adopt Scrum. The organization has also experienced budget cuts and has let go of most of their HR department, and were at the time of the interview using external companies for HR services such as recruiting.

At the time of the interviews organization A had adopted Scaled Agile, but still used project for each release, which had increased from 2 to 10 per year. The teams had become cross-functional, and the Change Manager explained that they had not chosen to follow any specific framework, but rather taken inspiration from different frameworks. The line structure was still present, and the Change Manager described it as still being a matrix structure. The Change Manager perceived that at some parts in the organization, the structure of meetings has stayed the same after the transformation. However, she emphasized that the success of Scaled Agile in different parts of the organization depended much on the people of the organization, and that there were high functioning teams present within the organization today.

The FLM's department had one Department Manager, one deputy and 15 FLMs. The FLM interviewee was the representative of 5 other FLMs and their teams during board meetings with the Department Manager. This solution was made to not get an extra level in the hierarchy but still keep the board meetings smaller in size. Each FLM is responsible for 2-3 cross-functional teams. At organization A, there is a slightly different form of POs present, called Operational Product Owner (OPO). The structure as described by the Change Manager is depicted in figure 5.2. An OPO differed slightly from a PO, since they were not running technology or architectural details. These were taken care of by technology experts and Architects at the team level. According to the FLM, the OPO was responsible for what needed to be done and why, and the Architect was concerned with how it was designed and integrated. The FLM was responsible for one OPO in her team, while other FLMs were responsible for the OPO in her other teams, as exemplified by the shaded area in figure 5.2. She described this to be legacy from the structure from the old organization, and she still communicated a lot with all OPOs regardless. At the FLM's department they had 5 OPOs for 13 teams, and the OPOs always reported to the first line management. To coordinate more teams and larger products, there was a product owner hierarchy with OPO, Area Product Owner, and Total Product Owner that was connected to the line structure.

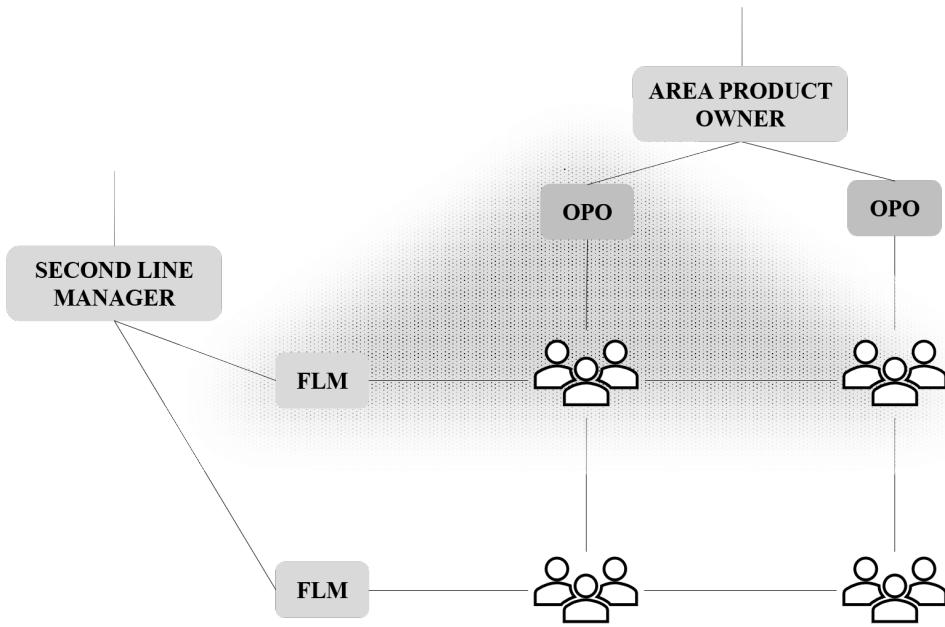


Figure 5.2 Organization A's matrix structure

The FLM explained that she and her group of 6 FLMs are also trying to work as a team. The FLM team also tried to adopt Agile practices, and have tried running a backlog. When the interview took place however, they had not been able to withhold their backlog because of last minute unforeseen problems that kept them from planning ahead. At the time of the interview they had trouble coordinating the development of a product with other development groups in Europe and Asia. The FLM also explained that they were trying to move away from what she referred to as “boxed mindset” i.e. seeing themselves as separate units, as the following quote illustrates.

“We are trying to put it behind us. Every employee should have their line manager, their coach, but the six of us [FLMs] want to view ourselves as one community. It does not matter... if I am not there they [the developers] can turn to one of my colleagues. We are also a team, but a team of leaders.”

The Change Manager emphasized the importance of the individual to succeed in Agile. She had observed middle line managers that failed to work Agile and that this affected the communication in the whole line structure. In effect, she explained that it could force the FLM to work in two ways at once - Agile with their team, and traditional with the middle line manager. The FLM did not perceive this to be the case with her middle line manager, who had changed their communication of product questions from the FLM to the PO. She also said that her department manager and her board were trying to use a backlog as well.

5.2.1.2 The interplay between PO, ScM and FLM

The FLM mentioned the trinity at organization A and to them it consists of FLM, OPO and ScM. The Change Manager said that their matrix organization reflected the trinity but that the ScM had a smaller role. All three of them needed to cooperate in order to do what is best for the team, and the dialogue was often about current team needs, enough competence, how well is the backlog functioning and anything relevant from the retrospectives and then see who can do something about it. However, the FLM had few ScMs, and she said some of the teams did not even want to have one so the role was

rotating among the team members resulting in different persons showing up on sync meetings. Since the ScM was part of the team unlike the OPO, she also experienced that the ScM was not as open as the OPO because they did not want to tell on other team members.

The OPO was responsible for the team's backlog and partly for the product. Due to dependencies from the higher level in the organization and product stream the OPO was not considered fully responsible for the product. The OPO should be able to answer the questions "What" and "Why" to its team and stakeholders but organization A also had additional roles that could technically support the OPO, thus also the team. The FLM was working very tightly with the OPOs to figure out how to best solve staffing, competences etc.

As mentioned, the ScM did not have a full time position but was also a part-time developer role. The amount of time spent as a ScM varied between 10%-90% depending on how the performance level and maturity of the team. According to the Change Manager, in some teams one could not tell who was the ScM and in other teams the role rotated. The Change Manager said that typically the ScM spent 25% of the time on Scrum and the remaining on working along the team. According to the FLM, a ScM should help the team with the work process but it is important that they do not become the team's spokesperson or team leader and she thought it could easily happen since the persons used to be the team leader took on the ScM role.

5.2.1.3 Line manager responsibilities

Previous to the transformation the FLM had the ultimate responsibility for the product, and since the groups were based on specific technical disciplines the FLMs often held technical competence within that specific area. In contrast, the teams had become cross-functional after the transformation, and the manager could no longer have knowledge in all areas. The number of employees that the FLM was responsible for had been rather constant, between 16 and 20. The FLM had experienced a change in how the feedback process worked. Previously, she used to collect inside information from an appointed team leader, but since no one was supposed to have such a role after the transformation she had to perform detective work to build a picture of the people.

In the ideal world, according to the Change Manager, the line manager is there to support, make sure that the right competencies and resources are available for the team, make sure that individuals are feeling well, and deal with administrative tasks such as holidays. The FLM expressed that she was there to make people grow and to reach the common objective - to improve organization A. In organization A, FLMs focused on coaching and managing conflicts. These are tasks that possibly could be done by a ScM but the FLM believed these are better done by a more objective part, thus by the line manager.

More concrete, the FLM's tasks included recruiting, wage revision, one-to-one meeting with the employees, weekly sync meeting with OPO (sometimes the ScM), facilitating workshops for the team and OPO, and competence development according to strategic decisions and administrative tasks. The HR department at organization A was very small, thus many questions related to HR was the responsibility of the line management. Apart from syncing between the teams, syncing between sites can be necessary. FLMs also had meetings with their own management team. In the case of the interviewed FLM, this meeting occurred on a weekly basis, where two APOs and one technical expert was also present. During the meeting they discussed what changes was needed, how they could support

each other or any urgent issues. At these meetings they could also bring up requests that would affect the budget. As mentioned, the FLMs work together as a team as well, and this has resulted in an advantage in the wage revision process. They have had the opportunity to connect to all employees in the department, not just the ones they are formally responsible for and when the lump sum of wage raise came they were able to more fairly distribute among all teams and individuals..

5.2.1.4 Challenges of the line manager

At organization A, the Change Manager knew of cases where the line manager had become more distant from their employees due to dropping day-to-day work with them, but there were equally many cases where the opposite was true. Furthermore, she said that trust was extremely important and if the line managers were not able to build it towards their employees, it was very challenging to work in this organizational setup.

The FLM experienced a contradiction in the feedback system. According to Agile, the team is essential and performance is measured on how well the team is delivering, but still feedback has to be given on an individual level from the line manager. She aspired for a culture where the team members give feedback to each other and help each other. Since the teams were cross-functional and the FLM was no longer technically competent in all areas it had become more difficult for the FLM to determine who was doing a great job and who needed more education or support. Another challenge that came up was that suppliers and customers outside of the organization did not always understand the new roles and always wanted to talk to a manager even if the technical competence had moved to the OPO.

The Change Manager claimed that large organizations going into a transformation always run into issues on the middle manager hierarchical level. In some parts of organization A she had observed that the FLMs were working according to Agile ‘down’ but had to work according to the old structure ‘up’. She gave an example, where the FLM attended Agile meetings with its Scrum Teams while still attending the same old meetings with its middle manager. She believed that this had resulted in a heavier workload than before, as the quote states.

“The idea was that they [FLMs] should get less to do so they could focus on it, but that is not the case in reality.”

The Change Manager continued stating that the structure itself was however not to blame, but most due to the mindset of the middle managers. This varied between different departments at organization A alone, and at some of them this was not an issue.

5.2.2 Organization B

5.2.2.1 Changes in organizational structure

Organization B used to have a competence based organization where specialized people belonged to the same technical area, with one line manager for each. They typically released three projects per year, all with pre-study requirements and a waterfall based process. For staffing the projects they tried to put together people from the different technical areas. This was not working well according to FLM X.

When transitioning into Scaled Agile, they actively chose not to use a framework such as SAFe. They said the reason for this was that they wanted the change to focus on the organization’s demands, and

not on following a specific framework. FLM Y described their Agile journey as experimental as they constantly tried new ways of working. One way to keep their flexibility during the transformation had been to group all 20 cross-functional scrum-teams of 100 developers into one “box”, called Development & Delivery, see figure 5.2. Six FLMs were collectively responsible, although in practice the teams were distributed between the FLMs. This has allowed the organization to avoid union negotiations when moving developers between the six FLMs. It also allowed the FLMs to share responsibilities between themselves when it is needed. The organization had functions outside of the software development “box”; the FLM team, HR, Economy, and Strategy & Relations.

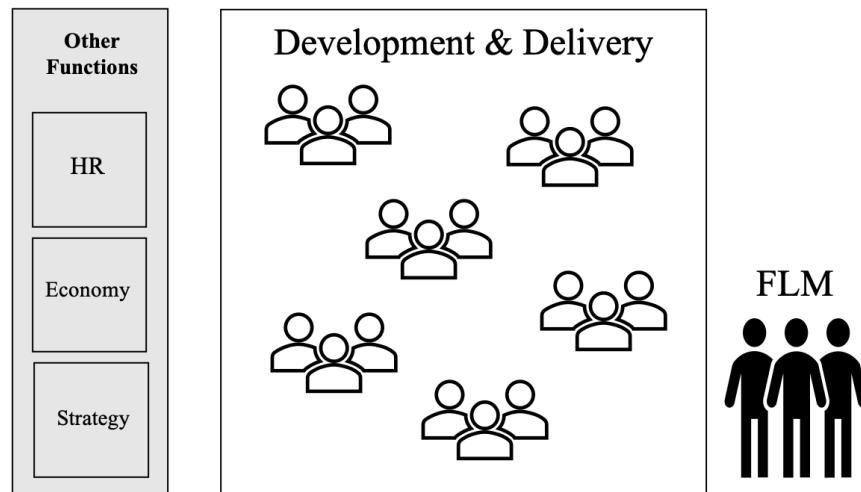


Figure 5.3 How organization B sees its organizational structure

FLM X explained that when first designing the teams, they had a big room workshop where the developers had the opportunity to arrange themselves into respective teams. In this workshop, management had set the purpose and the required competence for all teams, and the developers could choose how to arrange themselves. At the time of the interview, each team had a PO and a ScM. POs could have more than one team, and ScMs were part-time developers. Both FLMs considered themselves to have well-functioning teams.

5.2.2.2 The interplay between PO, ScM and FLM

At organization B, the FLM together with the PO and ScM formed what they call ‘the Trinity’ and it was of high importance that all three of them are cooperating in making what was best for the team. The PO was considered part of the team and had the same hierarchical level as the rest of the development team, the same holds true for the ScM, which was an active choice by organization B.

Their POs had technical responsibility and expertise, responsibilities towards the customer and some were often visiting customers. The FLMs thought it was challenging to staff this position, because not only do the PO need to have great technical capabilities but also being able to communicate and present to customers and teams. FLM Y stated that, this role should even be on a higher salary level than the line management. ScMs did not have a 100% role, it has been tried but the role landed in being part-time developer as well. The ScM was simply responsible for the work process and making sure the team was following Scrum. However, FLM X also confirmed in the cases where the ScM was embracing its role more, and questioning their team and pushing them, the result was better.

5.2.2.3 Line manager responsibilities

When organization B had the competence based organisation, the line manager only dealt with people within one technical area and most of them were the experts themselves in that area and they had the formal responsibility for the product. When transitioning into Agile, the line management had to let go of the product responsibility and since the teams have become cross-functional they no longer hold the expertise for all of them.

The FLMs were responsible for developing their teams and individuals. Their tasks included wage revision, recruitment, staffing and administrative tasks such as sick leave and holidays. They had one-to-one meetings with their employees at least once a month and weekly meetings with their POs. With the PO they discussed budget and strategic goals in order to find out how they need to develop their teams to meet them. The FLMs were normally not present at the Scrum retrospective, but may join if the teams allow it, it was still a bit sensitive to have the manager present.

A FLM also had responsibility towards its peers and at organization B all FLMs worked together as a team. Furthermore, the FLM also facilitated team activities, was responsible for having good functioning teams as well as coaching them. How FLM Y describe her own role is illustrated by the following quote.

"My task is to be a servant leader and making sure that their [the POs] agenda works out. Line managers and Agile leaders stand behind and support"

5.2.2.4 Challenges of the line manager

Finding the right distance to the team was a challenge for both FLMs. At the time of the interview, they both felt like they had a good relation with their team thanks to one-to-one meetings and being present on daily team meetings, but initially they struggled. Both of them felt like they had an identity-crisis during their transformation, since the traditional FLM-role changed dramatically. As a result, they backed further and further away from the team to give them space, which made it hard for them to be involved, and to give feedback. Eventually though, the team asked them to be more present, but in other ways than they traditionally had. Today, they feel closer to their teams than before the transformation. FLM Y strongly emphasized the importance of listening to her employees, something she felt she could do better than previously. She never felt that she had issues with interfering too much in the daily work, since she did not have the technical competence to do so either way.

According to both FLMs another challenge was some customers lack of understanding of Agile ways of working. Oftentimes, customers wanted to send large orders which would involve bigger pre-planned projects with a set budget. The organization then had to explain that they wanted to work in smaller increments and would like to start off with a smaller initial prototype. Upper management also had problems understanding Agile ways of working according to FLM X, who described that the FLMs were sometimes expected to report technical information to upper management, even though the PO held this knowledge.

Recruitment and wage revision was part of the tasks of the FLM, but they still needed to go through HR and had little freedom in wage setting. FLM Y expressed worries that if the FLM-responsibilities become too narrow they would have to take on substantially more employees when teams become more

independent. If taken too far, she fears that the FLM role could be reduced solely to a HR-role, which she did not think that many FLMs would be interested in.

5.2.3 Organization C

5.2.3.1 Changes in organizational structure

Organization C historically had a competence based matrix organization with a heavy project focus. The previous CEO focused on developing a project organizational structure, and the Vice President believed that this mindset was very rooted in the organization today. Agile practices first started about 8 years ago as per request from the developers, and began at the bottom level of the organization. The Vice President explained that developers had free reins to implement Agile locally, and she described it as an informal change without any thoughts of scaling. The line were positive about the early adoption of Agile, and as the organization grew, they focused on Agile skillsets when recruiting new people.

About 4 years ago, the Vice President's department launched a program which included plans of how to scale Agile practices, implementation guidelines, education plans for employees and so on. She believed that this had advantages since all employees were receiving training at the same time. However, she explained that the project culture in organization C was so deeply rooted that Agile practices had to give way for projects, since employees believed that project are essential when launching a new product. She believed that organization C would in time move further away from project organization towards Scaled Agile, but she believed this will take time. Organization C were at the time of the interviews using Scrum, Kanban, and some parts of SAFe, such as using ARTs where they had big room planning every 10th week.

At the time of the interviews organization C had organized larger groups consisting of several teams under the first line management. The FLM's group consisted of four teams and in total 32 individuals, which was an increase of employees from their previous structure. The teams became more cross-functional than before and most of the teams had a PO and a ScM, and were working according to Scrum. As the PO was part of the team, they always reported to the first line management, so did the ScM. The reporting structure for the Product Manager, on ART level was not consistent throughout the company, and the FLM said it is because it was never designed how it was supposed to be, rather it just happened that way. In fact they had chosen to actively ignore how the reporting structure is designed for the moment being as long as they cooperate, as the quote illustrates.

"We don't care about organization structure. We have chosen to ignore it for now. To get the system working. Let's focus on the principles, we don't care who reports where, but we work together and collaborate to make what is a good way. When we know that we have landed something constructive, then we will review the organization."

At organization C most of the Agile implementation had come top-down, and teams and ARTs were picked. The FLM expressed a wish for it to rather develop from the inside out. There are 14-15 ARTs running, but in some cases the managers at program level; product manager, Release Train Engineer and System Architects still need support, and the same for many POs at team level as well. At time for the interviews, the software development department was arranged in ARTs that were unloaded into projects, where each project was one product launch, see figure 5.3. Each project had a project manager which communicates with the product manager for the ART. In the Vice President's opinion, the

disadvantages of this structure was that they lost the Agile vision of optimizing output and value in relations to costs and resources.



Figure 5.4 The Agile Release Trains at organization C supports its projects

With a change of CEO at organization C, new directives were communicated in December 2018 about which role has product ownership. At the time of the interviews, it is placed on the PO, but in the future, the FLM will take on all product ownership, i.e. the two roles will merge into one. This will in practice mean that the FLM takes a larger responsibility for a smaller group of people, from ~30 developers today to 8 developers. This merge will also be applied at ART level, where the Second Line Manager will take on the Product Manager role. The Vice President saw disadvantages with FLMs having fewer employees, since the organization needed to negotiate with the union when moving employees from one manager to the other. When a FLM has more employees, the employees can move between the FLMs different scrum teams without going through negotiations.

The Vice President explained that while this change had been communicated throughout the organization, she was not sure that all employees had understood what this change implied. She believed that this change would have big consequences since it goes against what many employees have believed the structure to be previously. The idea behind this change was according to the Vice President to create a clearer chain of command when the line takes full responsibility, and that it will decrease the amounts of meetings needed to hold together different role hierarchies (such as line, project, POs) within the organizational structure. Thus, she said, it could decrease the complexity of the matrix organizational structure they have today.

5.2.3.2 The interplay between PO, ScM and FLM

A trinity consisting of ScM, PO and FLM did not exist at organization C, even though all three roles existed. Many of the POs were heavily operative, still building a functional backlog. The FLM did however describe a higher level of cooperation in place in the few cases of mature POs. Then the PO has a more strategic role and is able to discuss future staffing requirements with the FLM. The ScMs had so far only learned the Scrum practices and had yet to embrace principles. The ScM role had not been discussed much according to the Vice President, but she viewed it as a first step in a management career.

When the new directives are put into action, the FLM will also be the team's PO. The Vice President said that this person might not be able to cope with the entire workload and it could result in entrusting its team and ScM with more responsibility. This could result in the team growing their autonomy, but too many responsibilities concentrated in one person could also lead to some of the FLMs responsibilities to be neglected according to the Vice President.

5.2.3.3 Line manager responsibilities

According to the FLM, the biggest change from before the Scaled Agile transformation was that she is no longer present in the day-to-day operative business. This has freed up time, most of which has gone to the transformation work but also to her staff, which had grown from 25 to 32 employees. As a leader, she did not believe that she changed much as she had always seen herself as an enabler, something which suits well into the organizational structure. She described the traditional manager as a bottleneck for making decisions, something she tried to avoid, rather she believes the manager should act as a resource for the team by making things happen when the team need it. She still leads the teams in terms of setting direction and taking the hard dialogues when they are not performing. She described her role as fluid and undefined.

The FLM's weekly tasks included several meeting, one-to-one with 2-3 developers a week, and 3h management meetings with other FLMs. She also facilitated workshops and hold project reviews, and engaged in additional tasks such as experimenting which future steps should be taken through cross-group discussions. She said she spend a lot of time on transformational work, and admitted that she did not know what she will do with freed up time once the transformation is over. Additionally, she also worked short-term with strategy. At the time, according to the Vice President, the FLM only held staff responsibility, not product responsibility. However the FLM said that the decision making process had not changed fully, and that she still had legacy ownership of the product, but she separated accountability and responsibility. She said that while she was accountable for the product to protect the team, she believed that the team was responsible.

5.2.3.4 Challenges of the line manager

When the first line management got separated from the day-to-day business the FLM saw how that could result in FLMs becoming distant from the team and the individuals they had to evaluate and take care of. She said however that it depended on how you are as a manager and your own behavior and that she personally always made connections with her employees, even though it had become more difficult but only because of the increased size of her group, not the Agile transformation. Since she was also able to listen to the teams stand-ups and that their work was displayed visibly she did not even experience lack of information compared to before.

The Vice President describes that there had been clashes between the old project structure and Scaled Agile. The Project Leaders, which historically had a very influential role especially regarding product, had felt left out in the transformation, which they have tried to discuss through retrospectives.

The HR department at organization C was rather distant from the FLMs and only gave support with courses and general guidelines. The Vice President said that it was not until her level one get actual support from the HR, so the FLM was lonely and had to understand HR and practice it well by itself. In the future structure, this would become even more demanding since the FLM needs to, apart from the personal questions also take care of all product related questions. The recent feedback she heard from some FLMs was that they felt overwhelmed with all the responsibilities they will have to take on, since a lot of the product responsibility used to lay with a project manager. Thus, in this case, she thought it may result in the FLM having to prioritize either one, with the high risk of always prioritizing product before people. The Vice President believes it is difficult to become skillful at something if one cannot dedicate full time to it and by combining this with offering a manager position for only eight people, she saw it as very challenging to recruit 25 new persons that can take on this role.

6 Discussion

6.1 All Organizations had the same starting point

From the findings VCC and all three of the additional organizations showed strong similarities in terms of the organizational structure before starting their Agile journey. These structures were comparable to the hierarchical and traditional organization described by Cole (2004) and Fayol (1949), but with projects going across which is described by Maylor (2010) as a matrix organization. All of them stated to have had functional specialization departments, roles within a hierarchy and products being built mainly on project basis using a waterfall methodology. Also the first step towards Agile was similar to all of them, that is, the software departments realized that following a waterfall approach was not successful and they were allowed to start trying out Agile as long as they adopted to the rest of the organization. Eventually the organizations wanted to take advantage of the Agile benefits on a larger scale, but realized that Agile on team level is not the same as on enterprise level. At this point the similarities stop, and they have chosen different ways of scaling and different ways of incorporating the former line structure and project structure.

6.1.1 How have the organizations Scaled Agile?

As Bob Hartman (Denning, 2016) explained there are different ways for an organization to scale Agile (see figure 2.3 in section 2.3.1) and the preferred way according to him is to spread the Agile concept in the organization “vertically” and “horizontally”. However, he claimed that using one of the Scaled Agile frameworks available on the market is only a way of “scaling product delivery”. In this study, only VCC is aiming to fully incorporate a Scaled Agile framework, SAFe, and the starting point for them was to change the way of delivering product. However, the result still indicates that “vertical” scaling also was present, since the top management decided that Agile was the way to go and at least at some parts also middle managers really tried to incorporate Agile practices and believed it to be the better way of working. The HR practices seem to not have changed though, so “horizontal” scaling was likely not present.

Both organization A and B claimed to only look at the frameworks for reference and their approach to scaling was more organic. Especially organization B adopted a very experimental approach where the FLMs could be said to think Agile as well, thus reaching beyond only product delivery scaling. Even so, both top management and connected departments had troubles understanding, indicating there is potential for improving the scaling further. Since organization A was large, the level of scaling varied throughout the organization. At some parts the management seemed to adopt the Agile concepts, thus vertically scaled, but in others there were blockages. Budgeting, staffing and wage setting seemed to be more dynamic and closer to the teams in organization A and it is therefore deemed to have more horizontal scaling at least in comparison to the others. Organization C had a more crooked journey than the rest, where they started off with the same framework as VCC but not aiming to implement it fully. Instead some departments were organized to follow SAFe and the output from them were supposed to supply the still existing project structure. Neither horizontal nor vertical scaling was present, and seemingly only product scaling.

6.1.2 Structure and framework

The theoretical framework state that managers still are needed in an Agile setting. For example Dikert et al. (2016) state that a large setting needs more coordination and Medinilla (2012) claimed that “manager-less environments have not been proven on bigger companies”. This view has been shared by all organizations, and in all cases they have chosen to let the line managers stay, but not necessarily structured organizationally in the same way.

VCC had a hierarchical line structure that had not changed much since before, but in the Agile setting every level maps to a level in SAFe and the people the line manager is responsible is no longer specialized in the same functional area but are cross-functional. By letting this structure remain hierarchical, and often letting the same individual stay at their positions in the line, seemingly little has changed in the line structure. However, to be Agile, the line managers’ way of working should arguably still change. At VCAF’s team level, working as a team had been comfortably incorporated, which included the FLM. The FLMs also had as SAFe suggests, a community, but they did not spontaneously form a team as organization A and B did. The Change Manager from organization A had a rather strong claim, that middle managers could hinder transformations. This is something a framework like SAFe could counteract: if you follow it, it is obvious that all levels in the framework are supposed to work like teams. This is what happened in the case of the Second Line Manager in VCC, she viewed herself and the managers at her level as one team, and already used Agile tools and performed evaluations on themselves which they communicated to their employees. It could be that SAFe configuration of people, product and process managers at each hierarchical level favors and even enforces Agile practices throughout the hierarchy. Further research is however needed to draw any conclusions.

Organization A has also let the hierarchical line structure remain, which maps one-to-one with the added product owner structure. They however showed that even if it still is a formal hierarchical structure it is possible to be more Agile, if the people are willing. The FLMs collectively formed a team of managers, which means the managers can help each other and that all team members always will have a manager to turn to when needed even when their formal one is not available. Organization B had also incorporated a similar team of managers. The reason why these two have been so flexible could be as a result of not following a framework. By always looking for answers in the framework and not daring to step out of the frame might actually result in becoming less Agile even if the purpose of the framework is the contrary.

Organization C’s new directives were very different from any of the rest. By merging the Agile product ownership with its line structure, it wanted to create a “clearer chain of command”, which gives the impression of wanting to become a more traditional organization again..

6.2 Does the organizations’ Agile practice differ from the theory?

All organizations in this study use Scrum as their main Agile method of working. According to the Scrum Guide (Schwaber & Sutherland, 2017), when practicing Scrum, the Scrum Team is essential for delivering value and it consists of three roles: PO, ScM and the Development Team. At VCC and Organization B the cooperation between FLM, PO and ScM was however the most frequently mentioned where they even referred to it as “the Trinity”. Even though the purpose of this trinity was to make what was best for the team looking at it from three different perspectives, it differs from the

presented trio of Scrum. This may even diminish the importance and equality that the development team should have.

At VCC and organization A the PO was not really considered part of the team, but at organization B and C the PO was. This situation might have occurred at VCC because it chose to move the PO one step up in the hierarchy, which is in direct contradiction to what Nerur et al. (2005) claim, that the members in Agile teams are on the same level, without hierarchy. As a result, the PO fell out of the team. VCC however wanted to do so in order to give the PO formal authority to stand against the FLM, if any conflicts would occur, and several FLMs themselves at VCC said if they kept the formal responsibility for their POs it would be more difficult to let go of the product. In organization A, the FLM was responsible for both team and PO, but it existed a PO hierarchy which is a probable reason for organization A to also place the POs outside of their teams. The new directives at organization C will merge FLM with PO and the teams will have one person with unproportional power compared to the rest. This could give even less power to the Scrum teams in proportion to their managers, and the amount of responsibilities on the FLM might lead to them neglecting HR responsibilities in turn for product issues. Organization B showed a team composition the most similar to the original Scrum, and it had actively chosen to have all team members on the same hierarchical level and, at least according to itself, most teams were well functioning and autonomous.

In all organizations, POs usually had more than one team and ScMs were almost always also a developer. The Scrum Guide states that both these roles are part of the team, it does not say that it is impossible to be member in more than one, but that a PO “have 2-3 teams” is most likely not what was intended. The ScM was brought up during the interviews surprisingly little, considering that the ScM according to the theory has a rather prominent role. At VCC there was initially discussions about also moving this role up in the hierarchy to get balance in its “trinity”, but maybe as a result of not doing so the ScM was deemed less important and lost focus.

6.2.1 Scrum Master vs. First Line Manager

The theory of the ScM role describes it as a servant leader that supports the PO, development team and the organization, as well as handling the communication outside of the Scrum team (Schwaber & Sutherland, 2017). This description matches the responsibilities of an Agile manager, such as removing impediments, build skills and being a servant leader. It also reminds of the FLM responsibilities reported by the interviewees in all four organizations, and it corresponds with some parts of VCC’s FLM role description such as; servant leader; coaching the team; and removing impediments. Theory also says that the ScM often lacks disciplinary power, and that neither the PO or the ScM should be bosses but instead should be regarded as being on the same level of the team (Maximini, 2015). Additionally, while FLM is a qualified role at VCC, the ScM role is open for application to anyone who is interested.

From the interviews, it seems that the insertion of a FLM creates a shift in power and responsibilities since the ScM role is fading or taking a smaller role in all four organizations. When the FLM is positioned above the Scrum team, including the ScM, the FLM comes into a position of power. This could be a natural reason that when the FLM and ScM holds the same responsibilities, the FLM has the power to choose to take those responsibilities themselves, especially since the ScM role is novel to the organization and some of these responsibilities previously lied on the FLM. One example of this was mentioned by the Second Line Manager at VCC, where during a workshop with the POs and the FLMs where the ScMs were unpresent, most tasks and responsibilities which could have been done by a ScM were divided between the POs and FLMs. Interesting enough the Vice President at organization C

thought of the ScM as a first step in a management career, so perhaps the ScM role will gain new relevance as a first step of a management hierarchy.

6.3 Agile Mindset - The individual determine whether or not Agile is successful

6.3.1 Challenges with the mindset

To succeed in implementing Scaled Agile, theory claims that the mindset of the manager needs to change, but that this shift in mindset is difficult (Dikert et al., 2016). From Hales' study (2005), it was found that the FLM had not changed significantly and that its supervising role had only strengthened because of its position in "systems of external, hierarchical supervision". Even so, the theory and results from the interviews suggest that organizations let managers stay in the same position. This was also found at VCC, where FLM 3 were struggling with giving up technical responsibilities and not interfering with the team during meetings. FLM 2 also struggled, but said that having a strong ScM helped keeping her in place. Some of the FLMs however, such as FLM 1 at VCC, FLM Y at organization B and FLM at organization C, did not experience difficulties as they felt they already had this mindset before the transformation, i.e. they did not feel like they needed to change their mindset. This implies that the mindsets with the FLMs have not really changed. However, having a strong and supporting ScM can help them not to get stuck in old mindsets and adopting a more Agile mindset.

The challenge of an old mindset could also be a growing insecurity of the person's future relevance for the organization. Some FLMs at both organization B and VCC were both comfortable with working in Scaled Agile and did not believe that their role as a FLM would become obsolete in the future. However, the FLMs at organization B had described an identity crisis early in the transformation, and other FLMs at VCC were worried about that when losing many of their previous tasks they would eventually not be needed. This worry could result in them holding on to those tasks, making it even harder to change their mindset.

6.3.2 Distance to team

FLM 2 and 3 at VCC felt that loss of product involvement and involvement in day-to-day business had moved them further away from the team and that it was harder to give individual feedback to their employees. FLM 3 even believed that this issue will grow greater with time as she would remember less and less of the daily work. The ScM and FLM 5 at VCC, the FLMs at organization B and the FLM at organization C had the opposite experience, and FLM 5 said she felt closer to the team than before thanks to the daily standups. The FLM at organization C said she also had a good understanding of the work process thanks to the visual and transparent work process of the teams. It appears that when making use of Agile tools, working together with the PO and ScM, and by attending daily meetings the FLM does not necessarily lose distance to its teams.

At organization B the FLMs had also experienced the same issues but have handled the issue in an interesting way. When the FLMs started to back off, they initially experienced an identity crisis as managers. However, by backing away, the teams eventually turned to them and asked them to be more present. This way, the FLMs became present and served the teams when the teams themselves needed it. Perhaps this can be a key take away when shaping the future role of the FLM: that the teams themselves can figure out when, and for what they need their FLM. This also connects with theory

which says that the teams should be self-regulated, semi-autonomous and plan their day-to-day work under little or no supervision (Parker et al., 2015).

6.3.3 Middle managers

According to theory, one of the tasks of an Agile manager is to build an Agile corporate culture and drive change (Medinilla, 2012). The interviews highlighted the importance of the mindset of the middle manager in an Agile transformation, and how they affect the FLM. Organization A was the first of the four organization to begin their Scaled Agile transformation, still they struggled with the mindset of middle managers. The Change Manager at Organization A described how the wrong mindset in a middle manager can affect the communication in the whole line structure. Specifically, old meeting structures can take a lot of time from the FLMs other tasks, and lead to double the work when they need to attend Agile meetings “down” with their teams, and traditional meetings “up” with their manager. She did not believe it had to do with the organization’s structure, but instead with the manager’s mindset. This was exemplified for the FLM in the same organization who described that her middle manager were trying to use Agile tools and had changed the flow of communication.

6.3.4 Thinking outside of the “Box”

Organization B chose to put their FLMs outside of their pool of developers. This possibility could partly be granted because they were much smaller compared to the three other organizations. However, this presents significant advantages as the barriers between the FLMs disappeared. Not only did the FLMs collaborate more, it was also easier to move developers between the different teams as the FLMs took responsibility of all the developers in their teams, even if the formal responsibility was with another FLM. At VCC, the situation was different. A few of FLM 2’s developers were stationed out in teams that another FLM was responsible for, but she was still responsible for that single individual. It is more likely that the FLM responsible for that team could be more present for that individual, and provide better feedback. Thus, if VCC’s FLMs could move away from their formal responsibilities and view themselves more as a group and help each other this could be a great benefit for the employees. The FLM at organization A gave an example how this could be done when she described herself and the other FLMs as “team of leaders” and that they together were available for all the developers.

6.4 Line Manager Responsibilities

This section covers the tasks and responsibilities of the FLM divided into the five domains stated by Sandwith (1993): technical, administration, interpersonal, leadership and conceptual.

6.4.1 Technical

The technical expertise that was previously needed of the FLM has been moved to the PO role, however it was unclear at VCC whether the PO should take on product strategy or not. Gloger and Häusling (2011) discuss that management should focus on strategy instead of daily routines. FLM 2 was discussing whether she should hold on to the long term product strategy, but she believed that the PO could possibly take on this responsibility as well. However, FLM 2 was still handling the communication with her suppliers, as she claimed that they were expecting to talk to a traditional manager. This becomes problematic in the long term if the FLM still needs to hold the communication with suppliers when the PO possesses the product knowledge. The FLM would then need to ask for information from the PO which would create unnecessary reporting and force the FLM to still be heavily

involved in the product. It could be that old mindsets outside of the organization will affect the distribution of responsibilities between the PO and the FLM as mentioned by FLM 2 at VCC, but it could also be argued that an organization as large as VCC could communicate the change of responsibilities clearly to their suppliers if they wished to. The additional organizations show varying solutions to technical responsibility. Organization B has chosen to leave all technical responsibility on the PO, while organization C has decided to merge the PO with the FLM instead.

Even though most of the product responsibilities were agreed upon to be moved to the PO in all organizations, there was still a discussion if the FLM should have a technical background. The findings suggest that at VCC and organization C it was deemed beneficial to still possess technical competence as a line manager in order to understand the struggles the teams were facing better. One FLM at organization B, however claimed that she never had had the same technical competence as her employees and FLM 4 from VCC could see potential in recruiting FLMs from HR. The theoretical framework did not bring up any requirements of technical competence from an Agile manager. It does seem contradictory if the one who is engaging in the daily technical aspects (the PO) is not in charge of handling technical strategy as well. Additionally, with the fast pace of technology development, it might eventually be difficult for the FLM to stay updated in technology if it is not present in the technical day-to-day business. This could also pose challenges when recruiting, since the FLM candidate would still need both technical skills and HR competence, and the PO who is also qualified would not be given the responsibility for product strategy as it might expect. If the PO would take on all technical responsibilities, the FLM's technical competence requirements would only need to be contextual. In this case, a future FLM candidate does not need to have a technical background, but could possibly have a background in HR instead.

6.4.2 Administration

The administrative tasks of the FLM have mostly seemed to go untouched, tasks such as employee health, recruitment, feedback and evaluation, competence development, salaries, and work environment resemble those mentioned in traditional management theory (Sandwith, 1993). All four organizations discussed that the FLM held HR strategy in ensuring future competence through hiring or competence development.

6.4.3 Interpersonal

The delegation of work has previously been a FLM responsibility (Sandwith, 1993). In Scaled Agile, his role has been moved towards the PO and the teams themselves. The responsibility of the individual still lies with the FLM, as stated by the FLMs during interviews, however the focused has shifted more towards the team according to some of the FLMs at VCC and organization B. The reason for this was according to FLM 2 that one could not develop the individual without putting them in perspective with the team, especially since they wanted to achieve cross functional teams and team members. This does not correspond with Maximini's (2015) view, which states that in an Agile organization the line manager is responsible for the individual and the team. This seems to go against what FLMs themselves are requesting.

The FLM was still attending several meetings, however the meeting structure had changed, and they now engaged in sync meetings with the PO, ScM, and upper management. The FLMs were still present at meetings with the team, but instead of having a leading role, they were more of a passive observer, trying to better understand their team and what they needed.

Since SAFe does not mention where the line management fits in, it is not clear for employees when and for what reasons they should be in contact with their FLMs. This was exemplified by the developer at VCC who during a workshop was unsure what a FLM could help the team with. This could be a future problem as a consequence of VCC choosing a framework without a line structure while still choosing to keep it, and literature does not mention what team members are supposed to bring up with their line manager (Maximini, 2015).

6.4.4 Leadership

The leadership domain according to Sandwith (1993) is still present in the FLM role, but the definition of a leader has expanded greatly and traditional tasks have less focus in a Scaled Agile organization. According to Maximini (2015), all managers including line managers need to practice a servant leadership style, and this was confirmed by the FLMs in all organizations. When having cross functional teams, the FLM at organization A believed it to be harder to measure performance. However, she had tried to encourage that the developers give each other feedback instead. Both FLMs at organization B described their roles as to developing their teams and individuals. The FLMs at organization A and B also mentioned that their task is to coach their teams. The Second Line Manager at VCC also mentioned that coaching new managers is an important responsibility of middle management. This leadership style matches Maximini's view of a servant leader, who teach, facilitate, mentor and coach the team. Additionally, the mindset of the interviewees might suggest that the more traditional focus on individual performance has shifted more towards individual development (Kraut et. al., 2005; Medinilla, 2012).

The maturity level of the teams varied in all four organizations, and FLM 1 at VCC argued that a FLM needs to adopt situational leadership to be supportive of the teams initially. This is in tune with Agile theory, where Appelo (2011) discusses that a manager needs to adapt to the team's level of self-organization. FLM 1 emphasized the need to give the teams more space when they become more mature, but it was unclear who would ensure that the FLM would eventually give the team more autonomy.

FLM 5 mentions that the main task of an FLM is to motivate teams, ensure competence levels and build trust. She also built trust during one-to-one meetings with employees every second week. Building trust is not mentioned in traditional line management theory, but is present in Agile and Scaled Agile management theory. Hoda et. al. (2013) mention managers practicing leadership-collaboration and trusting their teams; and Cockburn and Highsmith (2001) discuss the need for mutual trust within the team. The Change Manager at organization A argued that for managers to build trust towards their employees was extremely important when managing in this organizational setup.

One example where trust was important was during the retrospective. According to Maximini (2015), the retrospective is only attended by the Scrum Team. The FLMs at organization B explained that they were allowed to join if they wished, but that having the wage-setting manager present could be sensitive. The FLM at organization A did not attend but received necessary information from her ScM, however she sometimes felt that the ScM were trying to protect the team by not telling everything. FLM 5 at VCC did not see any issues with her attending the retrospective, however, she emphasized the need to build trust with the team. It seems that it is not impossible for the FLM to attend the retrospective and that it might help them understand their team's needs, but in order to do this the team has to trust their FLM. The purpose of the retrospective is for the Scrum Team to inspect themselves in order to improve (Schwaber & Sutherland, 2017). Thus, if a FLM is to attend the meeting, it needs to build trust to ensure that its presence will not hinder the retrospective and that the Scrum Team can still speak openly.

6.4.5 Conceptual

The FLM had become more involved with organizational development because of their involvement in the transformation. The FLM at organization A stated that her role was to make people grow and reach the common objective: to improve organization A. Scaled Agile theory also mentions that the manager's role is to build Agile corporate culture and drive change (Medinilla, 2012).

6.5 What the Line Manager does with freed up time

If letting go of their product responsibility and daily operative business, the FLMs could free up time for other responsibilities. This was found in theory as well, "by having self-organizing teams time is freed up for other valuable tasks" (Gloer & Häusling, 2011). At the time of the interviews most of this time went to the transformation work, but some managers, explicitly at VCC and organization C, asked themselves what they could do once the transformation is over. Organization A, started their transformation over ten years ago, so the transformation will most likely take its time in the other organizations as well, thus the transformation work will not disappear in near future. That line managers have time for improving and driving change is also part of what an Agile manager should do.

The freed up time could also be considered to allow the managers to spend time on HR responsibilities which they already were supposed to do but previously did not have time for. As the Deputy Vice President at VCC mentioned, many FLM's were relieved they finally had time to take care of HR responsibilities and to develop their employees. The Agile organization also requires more frequent feedback to its employees, maybe even as often as every week. FLM 5 at VCC stated she meet her employees one-to-one every second week and FLM Y at organization B did so once a month. Both of them thought they had a good relation to their employees and never had a problem providing valuable feedback to them. Having time for HR questions does however not indicate that FLMs possess the needed skills. If the FLM would take on further administrative responsibilities in HR by taking over more of the recruitment process and having freedom in wage setting as suggested by FLM 4 at VCC, the FLMs would need to develop their competence.

Lastly, the FLM could also take responsibility for more employees. The number of employees every FLM had varied between 16 and 32 in the different organizations. All FLMs experienced that their responsibilities took up all of their time, however the FLM with 32 employees had no possibility to meet her employees on a weekly basis. This could imply that when a FLM takes on more employees, responsibilities regarding the individual will be more difficult to fulfill. The Second Line Manager at VCC described that in the future when the transformation has passed and the teams are more mature, the need for line managers may decrease and then all remaining need to take on more employees. This could work but then the feedback system, that Agile value very highly, needs to be incorporated in a different way as well.

7 Conclusion

7.1 Summary of findings

7.1.1 How has the line management structure changed when going through a Scaled Agile transformation?

From analyzing the findings of this study, it is apparent that there is no one single solution in how to insert a line management structure in a Scaled Agile organization. Removing the line management structure appears challenging for both cultural and legal reasons, thus organizations choose to keep it when scaling Agile. Maintaining and incorporating a line management structure in Scaled Agile does however put pressure on the individual to adopt new ways of working and a new mindset. In this situation, the mindset of the employees makes a difference, and the level of collaboration beyond individual responsibilities can considerably aid in the transformation.

VCC still appears to Scale Agile vertically by implementing Agile practices throughout the management hierarchy. This could possibly be an advantage of using a framework such as SAFe, however disadvantages could be inflexibility in implementation, and failing to find solutions outside of the framework. The FLM has been given the responsibility for the Scrum Team in all organizations, and at VCC the line structure matches each level of the SAFe framework. None of the organizations were following Scrum as it was presented by the Scrum Guide in the sense that the ScM, the PO and the development team were often not kept on the same hierarchical level. At VCC, the PO had been moved up in the hierarchy to get more formal power and balance in relation to the FLM, and as a result has fallen out of the Scrum Team. With both the FLM and PO one level up the hierarchy, the balance towards the ScM was lost and the ScM lost part of its significance.

7.1.2 What tasks and responsibilities have been removed respectively emerged and what does this require of a first line manager in a Scaled Agile organization?

All interviewees agreed that line management was still necessary in their present organizational structure, however, the role of a FLM has changed. The FLM role has transitioned away from product responsibilities and towards HR administration, leadership, interpersonal and conceptual tasks. As they lose technical responsibility, they have more time to engage to perform interpersonal tasks and engage in the transformation. Servant leadership skills become of greater importance as well as developing trust between the FLM and its employees. As teams become more mature, this is a role which the FLM needs to commit to. To work out how the FLM can interplay between and serve the team, it could be beneficial if the FLM gives the teams more space, so that the team themselves can ask for the FLM and thus organically shape the interplay between the FLM and the team. This puts pressure on the individual FLMs and their mindset, and they can be either a driving or a blocking force during a transformation. Additionally, the findings suggest that the FLM might need both individual and team responsibilities to be able to develop cross-functional competence within a team.

The technical responsibilities of the FLM varies between the organizations involved in this study. It is apparent that this topic is still under discussion at VCC and that the distribution of responsibilities between the FLM and the PO is not yet set. The FLM seems however to be losing its daily technical

responsibilities. This is a challenge for FLMs in employing a different mindset where their focus is turned away from the product. If the FLM loses its technical strategic responsibility, their interpersonal, administrative and conceptual tasks will become more relevant. In the future, the FLM could possibly take on a larger HR responsibility, and candidates could possibly have less of a technical and more of an HR background.

7.2 Managerial implications

The mindset of the individual becomes significant throughout a Scaled Agile transformation. Mindsets can be hard to change, however it seems that one individual can affect their surroundings. Ensuring that people with an Agile mindset hold positions of influence, not necessarily power, can be an important step in succeeding with a Scaled Agile transformation.

The skills required of a FLM is shifting, and with it the competence requested when recruiting a FLM. Technical know-how is losing significance in favor of soft skills in people and servant leadership. For FLMs who have been confident in the previous FLM tasks and is comfortable with a traditional mindset, this change can be worrisome. This puts even more effort with building a safe environment where FLMs feel free to explore and learn Agile principles, so that they do not enforce old ways of working.

7.3 Future research

This study has focused on one company in the automotive industry and mainly on the first managerial level. This study could be continued by using the same case but incorporating more views from the teams and interviewing FLMs that had no previous experience of being a manager at VCC. The middle manager has come up as an interesting and important role for spreading the Agile concept and further research on how it can affect both the line structure and shaping of the roles in Scaled Agile is necessary. When the line managers are relieved from their product responsibilities, time is freed up and it is of interest for all organizations attempting to scale Agile to understand how this time is best utilized. Therefore, a longitudinal study on this issue could be of interest and it should not be limited to only one organization or even one industry.

Since scaling Agile not only affects the manufacturing and developing part of an organization but also includes spreading to other departments such as HR, studies on how this could be done in practice are requested. Furthermore, even though Agile has been proven to have benefits, implementing Agile in large settings is still rather novel and longitudinal studies are required in order to evaluate how it affects performance. The same applies to the use of Scaled Agile frameworks, there is a need to investigate if they are enhancing the transformation or if a more organic approach without frameworks is more beneficial.

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Appendices

A. Interview templates

Andra företag

How has the traditional line management role changed when large organizations went through an agile transformation?

- svar på genom HR
- bekräfta med anställda
- Varför beslutade man sig för att göra så? (Kan ha baserats på den tidigare strukturen, arbetsuppgifter, kanske fanns ingen tidigare gruppchef då är det ju enkelt)
- Rollbeskrivningar

HR och experter

Vad har egentligen hänt med linjeheten när organisation blev agil?

MÅL

- Förläring av organisationsstrukturen: förr och nu
- Vilka kärnkomplicer tycker man att linjeheten hade, hur har detta utnyttjats?
- Varför beslutade man sig för att göra så? (Kan ha baserats på den tidigare strukturen, arbetsuppgifter, kanske fanns ingen tidigare gruppchef då är det ju enkelt)
- Hur har ni säkerhetsställt att dessa människor har rätt kompetens/fått ny kompetens om det behövdes?
- Om det är mest mjuka grejer kvar har då dessa fått extra träning inom sånt?

MANAGEMENT INTERVIEWS

Introduction

- Vad har vi för syfte
- Vad vi har för förhoppningar på den vi intervjuar

Frame

- How long have you worked at volvo cars?
- State previous and new role
- How long have you worked within agile methods?
- How long have you worked as a traditional manager?

Responsibilities and Tasks

Kan du förklara för oss hur en vanlig dag se ut?

Vad är du ansvarig för?

MÅL

- Förstå rutiner
- Vad anser denna personen vara viktigt

Rollbeskrivning (använda faktiska rollbeskrivningen som diskussionsunderlag)

- Vad tyckte om din nuvarande rollbeskrivning när du först såg den?
- Hur ser du på den nu (Highlighta vissa ansvarsuppgifter på rollbeskrivningen)?
 - Finns det några uppgifter som du inte känner att du gör?
 - Finns det uppgifter du gör utanför de som är beskrivna här?
 - Vilka är lättast och svårast?

Hur skiljer sig detta från den förra beskrivningen?

Hur har du ändrat arbetssätt?

Tycker du att du fått tillräckligt med support för att utföra det nya arbetsuppgifter och ansvarsområden som din nya roll innebär?

- Vilke supportfunktioner kan du tänka dig?

Relations

Hur är den nu, hur har den ändrats:

- teams?
 - Hur mycket får dem jobba själva?
 - Tycker du att dem gör ett bra?
 - Kommer dem ofta till dig med frågor?
 - Måste du lösa deras konflikter?
- sm?
- po?

Vad tycker de om den nuvarande fördelningen av ansvar, mellan TM, PO, SM?

- Är den självklar?
- Blir det konflikter?

Hur fungerar kommunikation till:

- horizontal management?
- vertical management?

Agile Manager

Vad är en agil ledare enligt dig?

(stämmer detta med agilt som vi har läst eller är det fortfarande traditionellt?)

Hur ser du på framtiden och deras roll som ledare?

- Anser du att din roll behöver förändras för att möte de organisatoriska förändringarna?

MÅL:

How do you find out what the group needs and how do you solve that problem? Please give examples

- upplever de ett kontrollbehov?
- Vad känner du är de största utmaningarna i din roll? är den motsägelsefull på något sätt?

TEAMS

Scrum Master representing teams

Introduction

- Vad har vi för syfte
- Vad vi har för förhoppningar på den vi intervjuar

Uppfattar teamen chefen på det sättet som chefen säger att han är

Frame

- How long have you worked at volvo cars?
- State previous and new role
- How long have you worked within agile methods?
- How long have you worked with traditional methods?

Responsibilities and Tasks

Rollbeskrivningar

Detta ska PO göra, vad gör er PO?

Detta ska Team manager göra, hur gör er?

Är det någonting dem gör som inte är med här?

- Är det bra eller dåligt?

Får ni i teamet jobba självständigt?

Interactions

Vad tycker de om den nuvarande fördelningen av ansvar, mellan TM, PO, SM?

- Är den självklar?
- Blir det konflikter?

Agile Manager

Vad tycker ni är viktigast hos er team manager?

- Ansvarsområde
- Arbetsuppgifter

B. Role descriptions

FLM - First Line Manager

100% Line Manager for 2-3 teams (15-25 individuals)

Suitable Candidates: Line Manager, Project Manager or equivalent skills.

My purpose is to be a servant leader and have complete employee responsibility including work environment, and continuously assist in aligning teams to long term strategies.

Tasks

- I am a servant leader for my teams
- I collaborate closely with my teams' POs and ScMs to assure we are synced when supporting our teams
- I support my teams in their everyday work by being present and attentive to their needs
- I challenge my teams to continuously learn
- I listen closely to, identify and solve escalated team impediments with main attention on flow and escalate when needed
- I recruit highly skilled individuals in line with identified capability and competence needs
- I facilitate real-time data transparency e.g. visualization of KPIs, Quality metrics, Test coverage etc
- I support suppliers becoming a part of our agile development and collaborate closely with procurement when doing so
- I am responsible for my employees work environment according to defined tasks
- I am responsible for all HR employee related processes (e.g. salary setting, appraisals, goal setting)
- I attend ceremonies and formal procedures on request or when relevant (e.g. demos, PI planning, retrospectives)
- I encourage, facilitate and support team celebrations for team achievements
- I stay updated and drive continuous improvements related to my responsibilities (e.g. tools, IT, flow, ways of working)
- I actively participate in technical discussions to stay updated in my technology domain to guide and coach my teams
- I safeguard long term technical strategies in close collaboration with the PO:s and System Architects
- I proactively work with competence development to assure the right competence in line with long term technical strategies
- I guide and coach in agile development

PO - Product Owner

100% PO for 2-4 teams

My purpose is to maximize value-added work by owning and deciding upon priorities in the Team Backlog from a business perspective to streamline execution, while maintaining technical integrity of the features/components for the team.

Tasks

- I own, build, prioritize, decide and refine the stories in the Team Backlog including defects and enablers
- I approve and sign Change Order (CO/ÄO) for my product
- I participate in the development of acceptance criteria for stories and draft them when feasible
- I review and reprioritize the backlog as part of the preparatory work for Iteration including coordination of content
- dependencies with other POs and all relevant stakeholders
- I protect the long term technical integrity of the feature/component

- I involve the team in backlog refinement to achieve minimum handover and maximum joint understanding
- I understand the scope of the upcoming enabler work and collaborate with System and Solution Architect/Engineering to
- assist with decision-making and sequencing of the key technological infrastructures
- I accept or reject stories. Accepting a story includes validation that the story meets acceptance criteria and has the
- appropriate acceptance tests, and that it meets its Definition of Done (DoD). Doing so, I also assure a level of quality
- I draft the team's specific objectives for the upcoming program increment
- I participate in Sprint Team Demo and Retrospective (as requested by the team)
- I coordinate content dependencies with other POs and all relevant stakeholders
- I contribute to the Program Increment (PI) system demo for program stakeholders to ensure that it will show the most
- critical aspects of the solution to the stakeholders
- I participate as a member of the extended Product Management team and review and contribute to the program-level
- vision, roadmap, and content presentations

ScM - Scrum Master

50% ScM, /50% developer or 100% ScM for 2 teams

Suitable candidates: Anyone willing, Project Leaders, developers, managers, Team Leaders, Operation Developers etc.

My purpose is to be a servant leader and coach the team using Agile team practices with focus on flow and take lead in continuous improvements.

I help the team embrace, adopt and apply agile principles and practices

Tasks

- I support the team's agile ways of working like SAFe, Scrum, Kanban, Definition-of-Done, WIP limits etc
- I facilitate the team's progress toward team goals by focusing on improving performance in the areas of quality,
- predictability, flow and velocity as well as staying focused on the team's iteration goals
- I lead team efforts in continuous improvement by helping the team in retrospectives and take responsibility for their
- improvement actions
- I facilitate all team meetings like the daily stand-up, iteration planning, demo and retrospective
- I support the Product Owner in their efforts to manage the backlog with respect to priorities and scope
- I eliminate impediments by removing hindrances beyond the team's ability so that the team can remain focused on achieving
- the objectives of the iteration
- I help the team broaden its competence and manage interpersonal conflicts/challenges/opportunities for team growth
- I communicate with management and outside stakeholders to protect the team from uncontrolled injection of work
- I help the team operate as an effective “team on the train”
- I collaborate with other SMs to learn and improve my profession
- I facilitate preparation and readiness for ART ceremonies like PI Planning, System Demos and the Inspect and Adapt
- I support the team develop techniques for work breakdown, estimating, planning and follow-up