The bottom-up agency in driving institutional change

A case study in a corporate environment

Timo Punkka
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Abstract

Agile development methods have moved into the mainstream. Agile development relies on short iterations and continuous adaptation to changing conditions. However, to fully benefit from these rapid development cycles, the rest of the organization should be aligned with this manner of thinking. Unfortunately, scaling agile thinking has been identified as challenging, particularly regarding how this magnitude of change can be driven in a bottom-up approach.

This research concentrates on organizational change and specifically on how an individual bottom-up agency can initiate and drive even institutional change. The research utilized an abductive approach and continuously combined existing theories with empirical findings. The research consisted of three individual studies: The first study concentrated on the theoretical feasibility of utilizing the team-based organization model as an approach to help agile thinking unfold in an organization. For the second study, two-year action research was conducted to empirically test the approach in the case organization. The final study aimed at understanding the bottom-up transformation in retrospect. The data for the first and third study consists primarily of interviews utilizing different techniques. For the action research, the primary data-gathering methods consisted of various information systems of the case organization, workshop and meeting memos, and author’s notes from direct and participatory observation. During the research, the author conducted a total of 18 individual interviews and one focus group interview.

Based on the findings, this research states that it is possible to initiate a change of this magnitude through an individual bottom-up agency. The success of such an endeavor depends on finding solutions to organizational boundaries. The key differentiator in large-scale bottom-up transformation and its success concerns whether the actors can find ways to understand the constellation of institutional logics at play in different parts of the organization and can re-form the suggested change in order to legitimize the new state of affairs. Legitimization, in turn, is a precondition for institutional change.

The main contribution of this research comprises a three-layer model for bottom-up institutional change. The findings strengthen the potential of using institutional logics as a theory for efforts to accelerate organizational change. In addition, this research provides empirical evidence for one possible route for unfolding agile thinking at the organizational level.

Keywords Agile development, team-based organization, Holacracy, organizational change, organizational development, bottom-up change, organizational structure, institutional theory, institutional logics
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**Tiivistelmä**


Tutkimuksen tulosten perusteella voidaan todeta, että näinkin merkittävä muutos organisaatiossa on mahdollista käynnistää ja ohjata alhaalta ylöspäin suuntautuvan toimijuden kautta. Tämän tyypisen muutoksen onnistuminen riippuu ratkaisuiden löytämisestä organisaation rajapinnoissa. Merkittävien alhaallah ylöspäin suuntautuvien organisaatiomuutosten onnistumisen ratkaisee toimijoiden kyky ymmärtää organisaation eri osissa vaikuttavien institutionaalisten logiikoiden yhteistoiminta, ja onnistutaanko ehdotettua muutosta muokkaamaan vastaavasti. Tämä on tärkeää muutoksen legitimaatiolle organisaatiossa, joka puolestaan on edellytys instituutioiden muuttumiselle.

Tämän tutkimuksen pääkohde on alhaalta ylöspäin suuntautuvan institutionaalisen muutoksen kolmiokerroksinen malli. Tutkimuksen tulokset tukevat institutionaalisten logiikoiden teorian käyttöä etsittäessä keinoja toteuttaa ja nopeuttaa organisaatiomuutoksia. Lisäksi tämä tutkimus tarjoaa eriempirisen näytön yhdestä mahdollisesta keinoista ketterän ajattelutavan edistämiseen organisaatiossa.

**Avainsanat**
Ketterä tuotekehitys, tiimipohjainen organisaatio, Holacracy, organisaatiomuutos, alhaalta ylöspäin muutos, organisaatioarakenne, institutionaalinen teoria, institutionaalinen logiikka

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Acknowledgements

Having personally helped teams and organizations implement agile development methods for the past 20 years, I have certainly seen the need for change beyond product development as well as the barriers hindering progress. Furthermore, I became frustrated with the sole focus on the product development function. I was confident that agile thinking should be scaled beyond product development to fully leverage the potential. Additionally, I was convinced that organizations need to be changing faster to meet today’s demands, and the way organizations work needs to be aligned with people’s cognitive development and expectations. Eventually, it was time to roll up my sleeves with the indispensable help of my colleagues and friends to experiment with how to scale agile thinking at the organizational level and how to drive this change within a bottom-up approach. This thesis provides a detailed account of this experimentation.

As I am polishing these final sentences, my academic journey is reaching a certain milestone. Whether the academic track in my life is to be continued remains to be seen, but this thesis concludes my quarter-century-long quest for understanding organizations. I am quite proud that I have been able to gather my ideas in several academic writings while working full time in the industry. Though challenging, I believe that the practitioner’s perspective brings more depth to my academic work. Similarly, the systematic reasoning required in academic work has provided me with new tools for my day job.

I have always struggled when asked why I have followed parallel academic endeavors in my life. The best answer I have been able come up with is that I truly have an urge to deeply understand the “why” of things. In the context of this thesis, I wanted to gain deeper insights into “why” people organize in a certain way in order to accomplish their objectives, as well as how the manner of organizing changes from time to time. Looking back, I certainly understand this subject better now. However, with human systems being so complex, the learning continues.

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Author’s Contribution

This research is conducted solely by the author. The author devised the idea for experimentation in the case organization, and his roles included subject matter expert, facilitator of the transformation, a practitioner as a member of the case organization, and the researcher.
List of Abbreviations and Terminology

The terminology used in the thesis is defined to help the reader. The objective of the list is not to be inclusive, but to provide sufficient understanding for the reader to follow the text. For this reason, this list does not cover terms that are adequately familiarized in the context.

*Cross-disciplined* means different engineering disciplines working together toward a shared goal.

*Cross-functional* means representatives from different organizational functions (design, testing, manufacturing, marketing, etc.) working together toward a shared goal.

*Incremental development* means adding something to the design, for example, a new feature.

*ISO9001* is a standard developed by the International Organization for Standardization (ISO), which defines how an organization defines, executes and maintains a quality assurance system. Independent certification bodies provide assessments for organizations looking to become certified.

*Iteration* means a time-boxed (fixed time frame) activity delivering a coherent set of value.

*Iterative development* means refining, or reworking, a design.

*Kanban board* is a visualization method for work and workflow. It is often used to manage the work at various levels in organization implementing agile methods.

*Lean* is a term describing the philosophy, principles and practices based on the research of Toyota Production System.

*Lean Startup* is an approach to developing new products and businesses iteratively innovating, experimenting and testing the new idea.

*Lean Thinking* aims to define a new way to think about how to organize and operate, according to Lean philosophy.

*Pair Programming* is a way of programming when two developers write the software together. It is focal part of Extreme Programming and can be considered to entail real-time reviewing.
**PMO (Project Management Office)** is an organizational entity normally responsible for execution of projects according the defined process.

**Portfolio** is used to manage large development initiatives and their priorities.

**Roadmap** is prioritized order of increments implementing the larger initiatives defined in portfolio.

**Scaled Agile Framework (SAFe)** is a model for scaling agile development methods in large organizations. It prescribes specific practices for managing the work of a large development organization.

**Scrum** is a widely implemented agile project management method. It defines specific roles, meetings and artefacts for iterative and incremental development.

**State-Gate** is a process model and project management technique which divides the activities in a project to stages. The stages are separated by gates which are corresponding control and decision-making points.

**XP (Extreme Programming)** is an agile development method that defines specific rules to strictly follow in software development, including the management of the process.
In this thesis, I present how a bottom-up agency drives organizational change, which can be identified as institutional change. To this end, I use institutional theory and the concept of institutional logics to explore the potentials and limitations of such an approach. The opening chapter begins by providing the background and the motives to research how introducing agile development methods in product development influences the rest of the organization, as well as how these implications can be addressed in a bottom-up fashion unfolding agile thinking in an organization. Following this, the concrete objectives and the scope of the research are defined. Finally, the chapter presents an overview of the structure of this thesis.

1.1 Motivation for the study

The demands for organizations are becoming increasingly complex all the time. Customer requirements are more versatile and personalized, technology advancement is accelerating, and ethical requirements affect companies’ success more and more all the time. Despite this, however, companies are required to deliver more, be more diverse, and be more profitable. To accomplish this, they must continually and more quickly design and develop both the products and services they deliver to changing markets and the ways they organize. The world is now changing at a rate at which the basic systems, structures, and cultures built over the past century cannot keep up with the demands being placed upon them (Kotter, 2014).

Agile development methods were defined in the early 2000s to better answer the challenges caused by the ever-increasing speed of change in software development (Highsmith, 2001). Agile development, as a fast-paced incremental and iterative development approach, suggests adapting to changes via continuous re-planning based on new discoveries. Today, agile development methods have moved into the mainstream (West & Grant, 2010). The change in product development processes creates a need for change in other organizational functions, as well as how the organization is managed (Punkka, 2016). If this change does not occur, the business and organizational benefits enabled by agile product development are not achieved (Kettunen & Laanti,
Introduction: How to reach an agile organization?

However, organizations are facing barriers for further changes (Dikert, et al., 2016; Version One, 2016), predominately the inability to change the existing organizational culture.

Another change affecting organizations concerns how people see themselves in the world and how they see the role of work in their life (Zuboff & Maxmin, 2002). The shift in people’s values and attitudes has been discussed for decades, it has been argued that there is a shift toward increasing reflexivity, individualization and de-traditionalization (Majiba & Savago, 2007). The current generation, for example, is looking for not just one career, but several, possibly in completely different endeavors. Organizations are not designed to meet these needs. In 2013, CNBC news channel reported a study by Kelly’s Services stating that a staggering 48% of employees globally are unhappy with their work1. One possible explanation is that organizations are not changing to accommodate their employees’ changing values. Interestingly, a positive link with job satisfaction and agile development has been identified (Tripp, et al., 2016). As for what can be learned from this, agile development is facing challenges because the rest of the organization is slow or reluctant to change. Furthermore, people in general do not enjoy being at their current workplace. It seems that the way work is structured in organizations at large is facing a new evolutionary cycle. However, it remains to be seen what the next evolutionary stage will be and how companies can be expected to move from one stage to another.

Due to my interest in agile development, I have been following the development of different models for scaling values and principles from agile development. I knew such models existed, but I also knew that considerable work has focused on simplistic adoptions and solely the immediate proximity to product development. Frameworks and models of operating have been defined for whole organizations, such as learning organization (Senge, 2006), but they seemed a bit vague, and the instructions for getting started were lacking. Over the last decade, however, more models and theories began to emerge, catching my attention. Some of them strongly affected the start of this research, such as Beyond Budgeting (Bogsnes, 2008), BetaCodex (Pflaeging, 2014), Teal (Laloux, 2014), and Holacracy (Robertson, 2015). They also refer to agile development as a source, providing me an easy path to relate myself to these approaches. Eventually, this resulted in initiating this research.

Others have found this gap and opportunity as well. Dikert et al. (2016) conducted a systematic literature review on large-scale agile transformations. The authors identified five areas for future research: 1) Case studies for transformations, 2) scaling practices, 3) scaling frameworks, 4) enterprise agile, and 5) surveys on challenges and success factors. According to them, the academic research was missing or notably limited in these areas.

Upon starting my research, I had been working in the case company for eight years. During that time, we had taken agile development to a quite mature state including a defined level of business planning (a journey described in more

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detail in section 5.3.1). Cross-functional groups focusing on non-development activities of the organization already existed, but these newer organizational experiments lacked defined process. Furthermore, a clear plan on how to go forward was missing. As such, the situation demonstrated in practice what was documented in the existing literature. Agile development presented a need for greater change, but clear guidance regarding what to do or how was missing. The situation provided a perfect environment for a case study. As mentioned above, defined models for organizational structure existed that embrace self-organization and dynamic structuring, or dynamic governance. These models took a more holistic approach than, for example, process development alone. On the other hand, they provided concrete guidelines in contrast to a rather broad discussion on, for example, organizational culture. The approach to scale agile thinking through these models felt to be sitting right in between, and as such, to be a promising path to explore in the case organization. The research was started in order to experiment with a novel model for organizational structure. The objective was to determine if such a fundamental change provides an effective means to scale agile thinking at the organizational level. The research, however, revealed that the transformation itself is more interesting. As such, how the change unfolds in practice became the focus of the research, as well as how one can address this magnitude of change in a bottom-up fashion.

1.2 Objectives

My primary objective in this research is to provide a pragmatic, practitioner-focused answer to the question of how to scale agile thinking (from agile development) at the organizational level. The answer to this “how” question is divided into two parts: First, the goal is to craft and experiment with an organizational structure model that embraces agile thinking. Prior research has identified the inability to affect existing organizational structures as a primary cause of inertia in scaling agile in organizations. However, if the existing structure needs to be modified, this raises the question of what the new structure will be. Second, the goal is to provide guidance regarding how to get started for those organizations considering moving in that direction. Conventional organizational change literature often considers changes to occur in a planned, top-down controlled manner. Agile development usually concerns only one function in an organization (product development). If that cascades into a change event at the organizational level, this can be considered a bottom-up-driven change initiative. Furthermore, if an organization’s structure is going to be new, and if the culture is going to change, this raises the question of whether the manner in which the change in that particular organization is initiated and executed should also differ from conventional organizational change approaches. The research comprises three individual studies. The main research questions guide the research process. Each of the three individual studies has separate more focused research questions. Chapter 4.1 introduces all research questions and how they contribute to the main research problem.
Throughout this research, existing theories and frameworks are studied to develop explanations for the case under study and to strengthen the validity of the resultant model. By combining the observations from the empirical research and existing theories, this research seeks to improve the current understanding of how a change toward agile organization unfolds in an organization. The research provides both an empirically tested framework for scaling agile thinking in an organization as well as concrete guidance for the transformation. In this way, the results contribute to both the theory and practitioners in the industry, further easing the follow-up initiatives. Through the research findings, I demonstrate that it is possible to initiate a change, even one as fundamental as changing the organizational structure model, in a bottom-up fashion. To this end, a framework is presented to explain the dynamics between local micro-level actions and macro-level changes in such an endeavor.

My hope, but also my belief, is that this research will also play a role in helping people enjoy their work and life even further.

1.3 Scope

This research focused on how to scale agile thinking, as it is understood in product development, at the organizational level. The objective was to define and empirically test an organizational structure model that enables cross-functional teams structured and organized to optimize value creation and to better align with agile development. Simultaneously, the transformation, and especially a bottom-up-initiated transformation, resided at the center of interest. Therefore, the primary research discipline is organizational sciences in general. The product development’s management and process development, in particular agile development methods, provide the research context for the case. The abductive research approach incorporated a practice of continuously refining the scope of the research. The transformation itself was driven by experimentation. The experimentation replaced the conventional extensive and systematic pre-analysis for alternative solutions to a given situation. Therefore, this section explains the final version of the scope as it emerged through experimentation. We will return to some of the identified alternative research paths in section 10.2 when discussing avenues for further research.

The case organization’s agile transformation began in product development teams. The need for scaling agile thinking to other functions was later initiated from the product development. Furthermore, the case organization is only a single operative unit in a large corporation. As such, the scope of this research is to specifically study the bottom-up change initiative in search of its limitations and potentials.

Since the case organization is part of a larger corporation, it is, of course, far from independent. How people external to the case organization were affected, or how they saw the transformation, remains outside the scope of this research except for where these interactions influenced what was occurring within the case organization.
The organization possesses considerable experience in agile development methods, affecting the scope of this research. Similar to other published reports, members of the case organization experienced the implementation of agile development to bring many benefits. We were interested in the implications that implementation of agile methods in product development function had for the rest of the organization. Agile development as the cornerstone for the researched organizational change was not questioned. However, the original objective of the research on whether the chosen approach would result in increased responsiveness to change was excluded from the scope. Instead, the identified challenges in the transformation became the focus of the research. The tested approach resulted in identified improvements for the case organization, but the comparison to any alternatives is outside the research scope.

The environment also features a long history of conventional organizational design and management practices. However, these were not particularly bureaucratic or rigid. Since the organization was familiar with agile development methods, it possessed a certain readiness for novel organizing models. Situations and events without such a background are not considered in this research.

Change management itself is only researched in areas where it was needed in terms of the action research on the transformation undergone by the case organization. The conventional organizational change models were reviewed during the research to form the theoretical framework. The objective was to understand these models' limitations in the context of this research. This theory and experiences were then utilized in retrospective to understand what happened during the research.

At the outset of the research, organizational culture as a field of research was considered the main theoretical framework for explaining inertia in the type of transformations covered in this research. During the research, however, other fields regarding organizational change became more prominent, leading to institutional theory becoming the dominant theoretical framework. This was studied only to better explain how large-scale change can occur in a bottom-up fashion. A more thorough and wider analysis of existing theories was left out of the scope. The reason is simply that the author became aware of these theories at late stages of the research.

Several methods, frameworks, and theories for novel organizing models were studied for inspiration, but not in detail, as they were not subjects of specific interest during the research. These include Teal, Holacracy, Sociocracy, and Beyond Budgeting. Holacracy was selected as a starting point for the case organization purely based on the fact that, at the time, it was the best documented framework available. The literature on Holacracy also referred to agile development, making it easy to connect with. Teal was studied in more detail to gather broader theoretical backgrounds on novel organizing and what characteristics these share. Analyzing a specific method or framework, however, remains outside of the scope of this research.
1.4 The structure of the thesis

Chapter 2 provides a more in-depth introduction to the background of the research. The chapter contrasts conventional product development processes and agile development processes, explaining the challenges agile development was targeted at helping with. It then continues to discuss why agile development is not sufficient, but the entire organization needs to be aligned to answer these challenges and to fully benefit from agile development. The rest of the second chapter discusses the barriers in scaling agile development and summarizes how agile development triggers a need for change in an organization.

Chapter 3 summarizes the theoretical framework as it emerged during the research. This research utilized an abductive approach to research, and, contrary to more conventional research approaches, the theory was researched simultaneously with the empirical research. This chapter, therefore, presents the final state of the theoretical framework and how different elements in it relate to this research.

Chapter 4 presents the research design and methods for the entire research. The research consists of three studies, and the following chapters provide a more detailed explanation of the research methods utilized in each study. This chapter, however, provides the overarching research problem and the research questions. It also examines the methodological approach. This chapter should help the reader to understand how the individual studies form the overall research.

Chapter 5 presents the first study. It begins with the introduction to the background of the study. It then introduces the specific research questions for the study. The following section elaborates on the research methods in more detail specifically for this study. The next two sections present the results and key findings, respectively. The chapter ends with a discussion, which provides the details on the matching and redirecting process. The following two chapters describe the other two studies and their structure is similar to this one.

Chapter 6 presents the second study. The second study is a two-year action research. Compared to chapter 5, this chapter also includes a section for a rather comprehensive narrative of each of the four action research cycles.

Chapter 7 presents the final study. It is a retrospective examination of the transformation in the case organization. The structure of the chapter follows the earlier two chapters.

Chapter 8 concludes and unites the individual studies by, first, presenting a brief summary of each study and then forming a synthesis of the key findings.

Chapter 9 contains both theoretical and practical implications. The section on theoretical implications presents the main contribution of the research, as well as, provides answers to research questions. The practical implications are presented in the format of propositions as a means for knowledge transfer to other contexts. The chapter ends with an evaluation of the research itself and the utilized research methods.

Chapter 10 consists of conclusions and proposals for future research.
2. Background for the research: Scaling agile development

This chapter builds the foundation for this research. It begins by examining what types of challenges are faced in the so-called “conventional product development processes,” as well as how agile development is hypothesized to help. Second, the scaling of agile thinking in both large development initiatives and specific functions of organizations is discussed. Following this, hindrances for further scaling of agile thinking are reviewed. The final part of the chapter summarizes the chapter and provides further description of the motivation behind the research.

2.1 Challenges in conventional plan-driven product development

There are multiple indicators of the accelerating rhythm of life in general. This can be seen, for example, in the increasing number of patent applications (Kotter, 2014, p. 2) and changes in the competitive landscape in terms of decreasing average lifetime of S&P 500² companies (Foster & Kaplan, 2001, p. 13). The product development organizations, and particularly software development organizations, have accordingly faced challenges in keeping up with changes in the turbulent environment. Even early in the millennium, the product development processes were not designed to cope with change, but instead relied on up-front planning and then executing to that plan. Cooper (2009) references studies conducted by the Product Development and Management Association (PDMA) and the American Productivity & Quality Center, concluding that 70% of product developers in North America use the State-Gate™ process model or similar. The referenced studies were conducted in 2004 and 2002, respectively. From this, it is possible to conclude that, during the first decade of the 21st century, the plan-driven, phased, and sequential process model dominated new product development in this industry. These process models have commonly been labeled waterfall process models.

Larman (2004) summarized the following problems in the waterfall model: “Complete” up-front specification with sign-off, late integration and test,

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² S&P 500 or Standard and Poor’s 500 Index is a stock market index of the 500 largest United States publicly traded companies.
“reliable” up-front schedules and estimates, and “plan the work, work the plan” values. Leffingwell (2007) listed false—or at least outdated—assumptions underlying the waterfall model using slightly different argumentations from Larman, as follows: Requirements can be defined beforehand, changes will be small and manageable, system integration will go well, and we can deliver on schedule. In the following, these arguments are examined one at a time.

The belief of being able to identify the requirements before has already been considered false by Thomke and Reinertsen (1998, p. 12):

One of the authors has worked with hundreds of product developers and has yet to find a single project in which the requirements remained stable throughout the design. Surveying more than 200 product developers over the past five years, he found that fewer than 5% had a complete specification before beginning product design. On average, only 58% of requirements were specified before design activities began. The inevitable result is changes.

Furthermore, the assumption that requirements should be gathered before the development leads to other drawbacks. First, a great deal of time is spent on this activity before the actual development and learning begins. The second issue concerns over-specification. If specifications in advance represent the only time the requirements can enter the development pipeline, this tends to guide people to include all possible requirements that they can think about.

The world is moving in the direction of ever more frequent changes. The assumption that change will be small and manageable is thus becoming obsolete, if it ever held truth for product development projects in the first place. Well-established research has stated that, in large projects, requirements can increase by changing their scope by up to 40% after the requirements have been first considered to be fixed (Jones, 1991, p. 153). The plan-driven approach to development was designed to fight against the changes. As we can see, changes still occurred, and they can lead to several negative impacts. First, if the project formally decided to adapt to a change, this proved to be a cumbersome and slow activity due to the rigorous change control process. For this reason, two additional drawbacks may emerge: On the one hand, the project team might decide not to adapt to a change, even though it would make sense. On the other hand, if they decide to adapt, but do not follow the formal method of doing so, this can result in poor communication and surprises among different stakeholders.

A simplified waterfall process includes system integration and testing only as the final stage in a project. The assumption is that system integration will go well, and this stage, with the final acceptance test, is merely a final check that everything went according to plan. When surprises or defects are identified at this stage, their influence tends to be rather expensive (Boehm, 1981). The cost of fixing a defect increases exponentially based on how late the need is discovered, as can be seen in Figure 1. The main reason for increasing costs is that considerable further development efforts may have been performed based on the faulty component or a misunderstood requirement. Furthermore, when
the product or a system is fully developed, it is more complicated and complex to change than it was when it was still under development.

![Diagram](image)

**Figure 1.** The impact of delay on the cost of fixing a defect (Boehm, 1981, p. 40).

The underlying belief behind the assumption that *we can deliver on schedule* is that, by planning, we can get everything right the first time. The mindset of having the testing phase only in the end, together with the fact that estimating how long the development is going to take is difficult (Figure 2), leads to the deferred discovery of the problems. As illustrated above, it is costly to discover problems at late stage of development, which also sends a shock wave of surprise across the organization. The launch and marketing activities are deferred, and customer communication changes from raising expectations to providing excuses. At the same time, the next initiative expected to start immediately after the delivery is pushed behind the schedule even before starting. This represents a vicious cycle resulting in an organization always playing catch-up and never gaining back control of the situation.
2.2 Agile development as a response to the identified challenges

In the 1990s, several different lightweight methods were developed to make software development more successful by better adapting it to continuous change, which seemed inevitable. The common use of the term “agile development” for these methods began after the creation of the agile manifesto in 2001 (Highsmith, 2001). In 2001, 17 software method developers met to discuss their ideas on software development. As a result of this event, the agile manifesto summarizes their shared understanding of better software development. Today, agile development comprises a broad topic, but its roots stretch back far in history (Abrahamson, et al., 2003; Larman, 2004). Numerous agile methods share the values of the agile manifesto, such as Scrum (Schwaber & Beedle, 2002) and Extreme Programming (Beck, 2000). The evolution of methods under the agile umbrella is continuing. Many scaling frameworks have been developed (chapter 2.4) and, for example, during recent years the DevOps model has gained attention (Gene, et al., 2016). DevOps focuses on a culture that considers the development and the maintenance (operation) of a system as a shared responsibility during the system’s life cycle. Interestingly, the practices follow similar value stream thinking as this research. In this thesis, we do not discuss different methods, frameworks or practices for agile development in detail, but refer to all of them as agile development. In the case organization, the agile development was taken for granted approach and
worked as an unchallenged setting for the research. In other words, the following brief and generic introduction to agile development provides the context for the empirical research.

Here, we consider a few key concepts through the assumptions behind the waterfall development. Specifically, we consider agile development processes through four principles: emerging requirements, adapting to change, continuous testing, and incremental and iterative development. Furthermore, we consider how the four principles contrast with the assumptions behind the waterfall process models (Table 1):

Table 1. How agile development addresses the challenges in the waterfall process.

<table>
<thead>
<tr>
<th>Assumption in waterfall mindset</th>
<th>Assumptions in agile mindset</th>
</tr>
</thead>
<tbody>
<tr>
<td>[We can] identify the requirements beforehand</td>
<td>Requirements are refined in a rolling-wave manner enabling continuous prioritization. Agile development is designed to keep the cost of emerging requirements low throughout the project. This can be achieved through intensive investment in test and project automation and modularity in design.</td>
</tr>
<tr>
<td>Change will be small and manageable</td>
<td>Changes are understood as evident as more knowledge is acquired and considered in many cases as an opportunity for optimizing the solution.</td>
</tr>
<tr>
<td>System integration will go well</td>
<td>Testing is a continuous parallel activity aiming at minimizing the cost of late discovery of issues.</td>
</tr>
<tr>
<td>We can deliver on schedule</td>
<td>Development is done in small iterations and increments enabling frequent deliveries.</td>
</tr>
</tbody>
</table>

To avoid over-specification, agile development gathers emerging requirements. This means that, in the beginning, only high-level requirements are defined without much detail. As the development has started, further requirements are refined while the current ones are being developed. The practice is called rolling-wave planning. This provides numerous benefits, such as avoiding the need to invest in writing requirements that will never be implemented and the possibility to continuously prioritize and replace requirements as more is learned.

Agile development acknowledges that changes are evident and unavoidable and is designed to adapt to changes. A change is considered an opportunity to better match market needs rather than a threat to a development project. However, being able to perform system changes at later stages requires teams to be skilled in the modular design and architecture.

Acknowledging that testing only as the last phase of development entails a large number of surprising elements, agile development relies on continuous testing. Testing is considered a parallel activity to the actual development. Cost effectiveness is often used as an argument for having only one comprehensive testing period at the end of the development. To make continuous testing cost effective, the organization must invest in test and project automation.

Incrementally adding more functionality enables frequent releases. This, in turn, allows an organization, at will, to release and begin revenue generation earlier. The very essence of agile development is the fast-paced incremental and
iterative development. Iteratively refining the solution enables frequent points for fine-tuning the requirements based on feedback, which greatly reduces the risk of misunderstanding requirements.

Agile development includes important elements beyond those mentioned above. One of the key principles concerns the continuous reflection to improve performance. This contrasts with a “lessons learned” activity at the end of the project in conventional project management. The latter features several drawbacks, such as that the improvement ideas are not helping the project itself, the problematic situation may not happen again, and the project team is likely to be disassembled after the project and transferring the knowledge to new projects and teams is challenging.

The outcomes reported by organizations adapting agile development are quite impressive. In 2008, QSM Associates conducted a study benchmarking 29 projects using agile development against 7,500 primarily traditionally managed projects. The study revealed improvements in three main areas: 37% faster time-to-market, 16% more productive, and no rise in defect counts despite the compressed schedule (QSMA, 2008).

2.3 Why agile development is not sufficient

Several authors have revealed that implementing flexible product development also requires changes outside the boundary of product development. This can be called “a change beyond engineering” (Punkka, 2016). Smith (1990) emphasized that senior management should intensively engage and commit throughout the development phase. In many cases, this might represent a new type of responsibility for senior management that requires being comfortable with uncertainty. Regarding speed and flexibility, Takeuchi and Nonaka (1986) stated that line management responsibilities are also defined from an unconventional perspective. They call for executing only subtle control and managing the environment. This represents quite a contrast to traditional duties, such as assigning micro-tasks and then controlling their execution. To summarize, change beyond engineering and working more in parallel are needed to optimize the total time it takes to transform ideas to profit (Smith, 1990). Significant performance improvement potential can also be tapped by focusing on the portfolio and roadmap funneling practices when selecting the initiatives in which to invest (Cooper & Edgett, 2009).

Furthermore, Punkka (2016) summarized that the end goal of an organization should not be development agility, but rather, the overall value stream should be under consideration. The organization should be optimizing across the different activities to answer the shared challenges, as follows:

- Time available for introducing a new product is getting shorter
- The amount of change (or learning) during the development is increasing
- Products to be developed are becoming more complex
Following the same lines, Laanti (2012, p. 83) points out that agile development represents only one aspect of the project (or operation), offering a list of other aspects:

- Strategic agility
- Business agility
- Agile organization
- People agility
- Organizational culture
- Agility of the product that is built

In summary, product development in an organization does not happen in isolation. When the product development moves into a fast-paced iterative rhythm, this inevitably affects the entire organization. Based on the data from the case study, Punkka (2016) suggests early involvement of people responsible for transferring new products from product development to manufacturing as an example of the first step toward this. The reasoning is that, especially when an organization works with physical products and not just software, the industrialization phase is often the responsibility of an independent organization, and the transfer of responsibility from product development to industrialization is seen as a single event and can be quite bureaucratic. This is despite the fact that a more adaptive means of managing manufacturing, called agile manufacturing, possesses a longer history than agile development (Kidd, 1994). Another example concerns management. Traditional processes are often designed to avoid mistakes and aim at a right solution the first time. Agile development heavily utilizes experimenting, and thus, mistakes and failures represent a natural course of action, creating possible conflict with the rest of the organization and the existing process models (section 2.5). In a systematic literature review, it was found that agile product development calls for early involvement of senior management in the development process, a change in managerial style, and a company-wide focus on learning (Punkka, 2016). All in all, for a better outcome, agility in product development is not sufficient; company-wide alignment is needed as well.

2.4 Scaling agile development

Scaling agile development has been widely discussed in the literature (Eckstein, 2004; Leffingwell, 2007; Larman & Vodde, 2016). The challenge is that “scaling” is used interchangeably, referring to a rather broad array of topics. Bob Hartman, an expert in agile development coaching interviewed by Denning (2016) on this broad topic, classified scaling agile into four types (Figure 3). This model is used later in this thesis to describe the transformation the case organization was observed to go through, suggesting that the model is also useful in explaining the stages of transformation.
The first type of scaling (Product) in the top-left quadrant represents the most straightforward form of scaling agile thinking. It describes a situation wherein a single product requires such an amount and speed of development that a single agile team is unable to deliver. Therefore, an organization employs multiple teams to develop the same product. Common practice for tackling this basic scaling challenge is *Scrum of Scrums*. This is really an elementary agile practice and can be found even in introductory material (Schwaber & Beedle, 2002).

The second type of scaling (Platform) in the top-right quadrant illustrates a situation involving multiple products that are, to some degree, coupled for one reason or another. This may be due to technical dependency, such as the dependency between a platform and applications development. Products can also be coupled because of the business model, wherein products are combined to form a product line. The scaling challenge comes from the fact that the knowledge base and/or design space is too large for a single person or team to grasp. Teams with specific skill sets work on dedicated areas of the product. However, all these teams need to be synchronized at least for a release cadence. Today, several frameworks have been developed that seem to focus on these

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3 *Scrum of Scrums* meeting is a coordinating practice used when Scrum is scaled to multiple teams. In addition to the Daily Scrums of individual teams, each team sends a representative to *Scrum of Scrums* meetings to foster knowledge synchronization across the teams (Cohn, 2010).
challenges, such as Scaled Agile Framework (SAFe) (Leffingwell, 2007) and Large-Scale Scrum (LeSS) (Larman & Vodde, 2016).

The two types of scaling in the bottom quadrants are the ones that are truly interesting in the context of this research. Here, the focus shifts beyond the development function in an organization. The third type of scaling (Horizontal) in the bottom-left quadrant involves changing the manner of working in functions other than product development. However, the affected people largely possess responsibilities related to product development initiatives, such as field services, product management, sales, marketing, financial control, and so on.

The fourth type of scaling (Vertical) in the bottom-right quadrant moves the thinking upwards in a traditional hierarchical organization structure. This involves job titles such as CxO, VP, and so forth. The people working in these positions are not typically directly involved in any development initiative, but rather are responsible for setting the direction for a large group of functions and the entire organization. They are concerned with rather different matters, or at least, at rather different levels than the above-mentioned agile scaling frameworks provide answers for. When scaling vertically, it is essential to find an alignment regarding central themes in agile thinking, such as letting go of control, replacing detailed process descriptions with trust, and focusing on long-term outcomes instead of short-term compliancy. The goal is for everyone to be reasonably comfortable with the complexity and uncertainty instead of attempting to squeeze the uncontrollable reality into an illusion of control. It is this quadrant that takes “executive support” from supporting to practicing.

2.5 Barriers to scaling

It can be concluded that there is a need for larger-scale change and that some solutions have already been tested. Dikert et al. (2016) reviewed 52 studies from 42 industry cases in their study on large-scale agile adaptations. The main transformation challenges that emerged are presented in Table 2:

<table>
<thead>
<tr>
<th>Transformation challenges</th>
<th>Occurrence</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agile difficult to implement</td>
<td>48%</td>
</tr>
<tr>
<td>Integrating non-development functions</td>
<td>43%</td>
</tr>
<tr>
<td>Change resistance</td>
<td>38%</td>
</tr>
<tr>
<td>Requirements engineering challenges</td>
<td>38%</td>
</tr>
<tr>
<td>Hierarchical management and organizational boundaries</td>
<td>33%</td>
</tr>
<tr>
<td>Lack of investment</td>
<td>31%</td>
</tr>
<tr>
<td>Coordination challenges in multi-team environment</td>
<td>31%</td>
</tr>
<tr>
<td>Different approaches emerge in a multi-team environment</td>
<td>21%</td>
</tr>
<tr>
<td>Quality assurance challenges</td>
<td>14%</td>
</tr>
</tbody>
</table>

The most common challenge is that, while straightforward to understand, agile product development remains difficult to implement. The second common challenge mentioned concerns other organizational functions outside product development. In that category, 31% of studies listed “Other functions not willing to change” as the specific challenge. More specific listed issues include the inability to adapt to frequent incremental deliveries and human resources having conflicting processes. In particular, existing rewarding systems were
seen problematic. Overall, it can be concluded that agile development causes pressure to adapt in a whole company, not just in the product development.

Consulting company Version One has conducted a survey on the state of agile annually since 2007. In 2016, at the time of initiating this research, the survey included a question about “barriers to further agile adoption” (Version One, 2016). The survey identified several barriers, presented in Table 3. The top two barriers included the inability to trigger larger organizational cultural changes and a general organizational resistance to change.

<table>
<thead>
<tr>
<th>Barriers to adoption</th>
<th>Occurrence</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ability to change organizational culture</td>
<td>55%</td>
</tr>
<tr>
<td>General organizational resistance to change</td>
<td>42%</td>
</tr>
<tr>
<td>Pre-existing rigid/waterfall framework</td>
<td>40%</td>
</tr>
<tr>
<td>Not enough personnel with the necessary agile experience</td>
<td>39%</td>
</tr>
<tr>
<td>Management support</td>
<td>38%</td>
</tr>
</tbody>
</table>

The inability to change other functions leads to a situation wherein different approaches to operation conflict. This imposes a wide range of challenges. For example, a single funding decision practice in finance function conflicts with the agile development practice of frequent product increment deliveries. The planning and control mindset of the project management office conflicts with agile development practice of rolling-wave planning, and individual reward and career planning practices in human resources conflict with the focus on teams in agile development. These conflicts too often lead to a conclusion that “agile does not work here” by senior management when, in fact, the root cause is the conflict between the different ways of thinking. Agile development in product development has created a new sub-group in an organization, and this conflicts with the existing way of operating.

### 2.6 Agile development triggering organizational transformation

The observations on challenges in scaling agile thinking initiated this research on organizational transformation. The motivation comprises a combination of two factors: First, I wanted to start examining the entire organization from the perspective of value streams. The idea is that, by starting from this higher-level objective rather than simply looking at individual barriers for scaling agile thinking, a more profound solution can be found. Specifically, I was interested in how a change in the model for organizational structure can foster the change toward agile thinking within an organization. Second, since the need for this change is initiated from the product development function, I was interested in how a bottom-up change can occur at a large scale. The motivation is summarized in Table 4 below:
Table 4. Summary of the motivation for the research.

<table>
<thead>
<tr>
<th>Identified challenge</th>
<th>Research proposition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Limited success in scaling agile thinking beyond product development, inability to</td>
<td>The focus of organizational development is on the end-to-end value stream considering</td>
</tr>
<tr>
<td>harness the full business potential from flexible product development.</td>
<td>fundamental changes to ways of organizing.</td>
</tr>
<tr>
<td>Lack of effectiveness in organizational change, inability to match the pace of</td>
<td>Abandoning the conventional idea of organizational change management, focus on bottom-</td>
</tr>
<tr>
<td>continuous change.</td>
<td>up and on-the-job change.</td>
</tr>
</tbody>
</table>

Agile development was introduced as an answer to the accelerating change around us. It answered change pressures with the fast-paced incremental and iterative planning and self-organizing teams. The system was designed for adapting to changes with lightweight processes to systematically handle change needs. While research results for agile development have demonstrated benefits in shortened time to market, increased productivity, perceived quality (QSMA, 2008), and job satisfaction (Tripp, et al., 2016), it has also been found that these benefits do not necessarily result in better outcomes at a company level (BCG, 2015). A recent survey on the state of agile practices revealed that only 6% of the companies are observing increased adaptability to changing markets (VersionOne, 2019). As seen in the previous section, the largest barriers for harnessing the benefits of agile development at the organizational level include the inability to better align the non-development functions with agile principles, and therefore, the inability to change the means of operating in general. Successful experiments for working in an agile way in other functions have been reported, such as in human resources (Wijewardena, 2011) and marketing (van Solingen, et al., 2011; DeFauw, 2012). However, doing this respects the currently dominant means of organizing by functional division. These experiments have been focusing on techniques and practices familiar from agile development, but not necessarily leading to a significant change in the way of thinking about how organizations work. As can be seen from the earlier research, the adaptive strategic planning according to rapid changes in the business landscape remains widely unutilized in companies implementing agile development. The ability to quickly change the course in product development is a central principle of agile development. It enables the responsiveness of the entire organization. However, to fully benefit from this, the thinking behind organizing requires re-consideration from the end-to-end value stream perspective.

It is interesting to consider completely abandoning the current means of organizing and attempt to discover how the means of organizing could best serve the change toward agile thinking. This freedom could reveal new insights that are hidden or constrained by the existing models of organizational structure. To this end, one should start by observing the organization from the perspective of the actual value stream in operation. Figure 4 illustrates this definition for an organization. The gray area in the figure illustrates specific elements within a large corporation that are required to deliver a specific customer-facing value stream, such as products or services. These people and
resources within the corporation should be the focus when discussing the optimal model of organizational structure. This may sound obvious, but conventional companies often become so involved in their internal organization issues that they lose the sight of value (Ward & Sobek II, 2014). Emphasizing the perspective of value stream, in this thesis, organization is defined as follows (Arell, et al., 2012, p. 2):

[Organization] … may comprise of marketing, product management, development, operations and support for a single product or a certain business unit. What is important is their ability to support complete, end-to-end business value chains.

![Figure 4. An organization within a larger corporation.](image)

When the trigger for change in the manner of organizing comes from the product development function, this represents a bottom-up change in the organization. At the organizational level, changes or improvements are traditionally introduced as linear processes from one state to another according to pre-planned actions (Bamford & Forrester, 2003). This approach features some limitations, discussed in more detail in section 3.2.2. Carefully planning and then executing changes seem to involve an overly long response time in today’s rhythm of life. Furthermore, this model implies that, once the change project is complete, the organization will stabilize again at this new level of performance. Agile development was defined to better answer the continuous change affecting product development. The changing world, however, does not affect product development alone. It also affects entire organizations, which should be designed for continuous change and improvement. There is further a need to explore a more flexible, built-in approach to continuously adapt the organizational behavior and performance. This can be started by abandoning the idea of a centrally controlled up-front planned change project. Instead, the leadership for the change comes from the on-the-job practitioners, and the framework for organizational change is embedded within the normal way of working.
The previous chapter presented the gap in current knowledge regarding how to scale agile thinking and how the change toward agile thinking unfolds, producing the research challenge. The research consists of three individual studies each having its research questions supplementary to the main research questions. Section 4.1 introduces all research questions. Figure 16 (page 84) illustrates the overall research procedure. This chapter presents the theoretical framework that evolved during the research. The concepts of the framework are illustrated in Figure 5. It is important to note that, while the theoretical concepts and models are coherently presented in this chapter, they evolved and were developed in parallel with the empirical research. The abductive approach to identify theoretical explanations to emerging findings is described in detail in section 4.2.2.

![Theoretical framework diagram](image-url)
The research focused on changing the model of organizational structure in the case organization to better support the change initiated by agile development in the product development function. Therefore, models of organizational structure represented the initial area of the theoretical framework. The need to understand the process of the transformation triggered the inclusion of organizational change models in the theoretical framework. The realization of inertia in the transformation, and the complex interplay of different forces with it, directed the theoretical side of the research to the institutional theory in search of an explanation for what was observed. The concept of institutional logics guiding the individual agency’s behavior was focal in explaining the case organization’s transformation. On the other hand, the individual agency both acts on maintaining the existing institutional logics and creating the new ones. This dual role is very interesting in explaining organizational transformations in a novel way.

3.1 Institutional theory

Institutional theory became the overarching element of the theoretical framework toward the end of the research. Specifically, the new institutional theory, or neo-institutional theory, was utilized in the analysis and interpretation of the findings. The new institutional theory prompted a shift in how the theory was used to suit the idea that organizations and actors in them are influenced by the institutions (Meyer & Rowan, 1977). This chapter first introduces the institutional theory. Following this, the chapter considers the theory from the perspective of explaining how and why organizations change or, conversely, remain static. This represents the focal area of this research. Moving on to the core of the empirical research, this chapter specifically considers how institutional theory can explain why it is difficult to initiate a bottom-up change, as well as how and why it happens regardless. The last section introduces two key pillars for the research in concepts of institutional logic and agency.

3.1.1 The role of institutional theory in understanding organizations

Traditional organizational theories simplify organizations as being primarily driven by efficiency. In contrast, institutional theory emphasizes that organizations are not totally free in decision-making, but rather are influenced by cultural characteristics (Barley & Tolbert, 1997). Furusten (2013) used institutional theory to explain how organizations are strongly affected by other forces beyond their management and market. To this end, he defines an institutional environment in which organizations are embedded. The institutional environment constrains and controls how the organization feels it is expected to run its operation on the one hand, but on the other hand, that organization is in turn setting these expectations itself. As Barley and Tolbert explained (1997, p. 93), “Organizations, and the individuals who populate them, are suspended in a web of values, norms, rules, beliefs, and taken-for-granted
assumptions that are at least partially of their own making.” As an example, DiMaggio and Powell (1983) proposed that the dominance of bureaucracy in the corporation (and state) world is the result of organizations tending to become more homogeneous. However, institutions or cultural constraints in general do not fully constrain organizations. There is room for interpretation, but institutions definitely do prompt certain behavior. As defined by Barley and Tolbert (1997, p. 96),

Institution is shared rules and typifications that identify categories of social actors and their appropriate activities and relationships.

The concept of organizational fields is central to the institutional theory, as it presents an intermediate level between organization and society (Greenwood, et al., 2002). DiMaggio and Powell (1983, p. 148) defined an organizational field as collections of organizations that,

in the aggregate, constitute a recognized area of institutional life; key suppliers, resource and product consumers, regulatory agencies, and other organizations that produce similar services or products.

Initially, institutional theory focused on how and why different organizations come to resemble each other, or in other words homogenization occurs among organizations in a certain field. The homogenization (or isomorphic change) in organizations occurs through three mechanisms: coercive, mimetic, and normative (DiMaggio & Powell, 1983). Coercive isomorphism occurs due to the pressure the organization feels from other organizations and expectations within the society. Other examples include legal, political, or technical requirements, such as financial reporting. Subsidiaries must adopt accounting practices, performance evaluations, and budgetary plans compatible with the policies of the parent corporation. Mimetic processes contribute to isomorphic change through standard responses to uncertainty. When an organization faces a situation where it cannot determine a clear solution, it may choose to “play it safe” and follow what others are doing. Normative pressures represent the third source of isomorphic change. This primarily stems from professionalism. Professionals in each field begin to behave similarly due to two main mechanisms—first through formal education, and later through the professional networks and communities.

The theory of institutional isomorphism helps explain why organizations are more homogeneous, leading to a lack of innovation in those organizations to the extent of continuing irrationality (DiMaggio & Powell, 1983). Organizations, of course, do not possess a will of their own; organizations are formed by and of people. Institutional theory explains the diversity of anchoring mechanisms to the status quo of operating, setting the boundaries for individuals to act. The complexity of this simple idea was explained by Schelling (1978, p. 14): “People are responding to an environment that consists of other people responding to their environment, which consists of people responding to an environment of people’s responses.” Organizations cannot simply ignore what goes on around
them (the institutional demand), as otherwise, they would not extend the legitimacy required to run their activities (Furusten, 2013).

The institutional theory can, to a large extent, explain the phenomenon observed during this research. The research was conducted in an organization that forms just a small operative unit of a much larger industrial corporation. The case organization was embedded and affected by the institution of the large industrial corporation. The change the case organization was going through faced numerous obstacles and constraints at the interfaces and boundaries for the rest of the corporation. Many of the existing processes and structures at these interfaces were, even for the members of the case organization, “given,” “taken for granted,” or “mandatory” and even “just the way it is.” This created tension at the organizational boundaries, which set limitations for the speed and extent of the change. Institutional theory offers tools to model these tensions, and during the research, institutional theory became the main tool for analysis.

3.1.2 Institutional theory and change

Institutional theory focuses on stability and similarity between companies, and little is known as to why and how institutionalized practices within a field atrophy or change (i.e. deinstitutionalize and re-institutionalize) (Greenwood, et al., 2002). Institutional theory can be used to understand organizational changes as well (which, without a doubt, does happen), not just organizational stability and similarity (Palthe, 2014). An institutional change cycle occurs when the variation from the existing norm is legitimized and becomes the new norm, replacing the previous one. For this to happen, theorization is integral. Theorization describes the process of formatting new ideas in understandable and compelling ways for a wider audience to adapt (Greenwood, et al., 2002). In a similar vein, Strang and Meyer (1993) state that, for a new practice to become widely adapted, it first needs to be “theorized” and become a social movement. Furusten (2013) describes the same mechanism, calling it “decontextualization.” Greenwood et al. (2002) present a hypothesis that theorization is even more important in more mature settings with a longer history, offering highly professional settings as an example.

Greenwood et al. (2002) modelled the process of new ideas, making it into new institutions through six stages, as presented in Figure 6. According to the model, new ideas that have a chance to shake the existing institutions come into an organizational environment within roughly three categories: social, technological, and legal. Stage I in the process identifies these new ideas, and they become more widely noticed in stage II, where alert individuals in different contexts identify the same change initiative. Stage III includes innovation as a means of truly understanding the meaning of the new discovery and how the given institution can benefit from it. Stage IV represents the above-mentioned critical phase of theorization, and it requires generalization from the initial context to a more widely adaptable format. At this stage, a significant group of different actors from different groups, such as academic, consultancy, and industry, need to work together systematically. If successful, in stage V, more
and more organizations adapt the new theory, and more pragmatic examples of the implementation arise. Finally, in stage VI, the new idea or practice becomes the de facto standard or granted behavior in a specific institution. The new state thus becomes re-institutionalized. However, if the new idea does not make it all the way to the final stage, it becomes what is commonly known as a temporary fad or fashion, and it is forgotten.

Stage II: Deinstitutionalization
- Emergence of new players
- Ascendance of actors
- Institutional entrepreneurship

Stage III: Preinstitutionalization
- Independent innovation
- Technical viability paramount

Stage IV: Theorization
- Specification of general organizational failing
- Justification of abstract possible solution
- Moral and/or pragmatic legitimacy

Stage V: Diffusion
- Increasing objectification
- Pragmatic legitimacy

Stage VI: Reinstitutionalization
- Cognitive legitimacy

Figure 6. Macro-level institutional change (Greenwood, et al., 2002, p. 60).

As previously mentioned, the case organization in this research was strongly influenced by the institutional settings by being a part of a large global industrial corporation in a highly professional field of engineering. As such, there was a certain pressure, or taken-for-granted thinking, to run its activities similarly to other organizations. This applies from the organizational level all the way to the individual level as compliance to existing rules and to what is expected as the default means of career progress. To better align the organization with the values from agile development, a novel means of organizing was tested. Institutional theory helps us to understand that this represents a multi-faceted and multi-level organizational change effort.

3.1.3 Bottom-up agency stirring institutional logics

The concept of “institutional entrepreneurship” was introduced early to explain institutional change (DiMaggio, 1988). The literature on institutional entrepreneurship, however, has focused more on institutions and explaining the change in retrospective, seldom addressing the multi-dimensional individual agency (Lawrence, et al., 2011). When considering the role of an individual or a group in institutional change, two central streams within institutional theory play a significant role: institutional logics and agency or institutional work (Zilber, 2013). Both are examined in greater detail below, starting with the
institutional logic perspective. An often-cited definition of institutional logics was provided by Thornton and Ocasio (1999, p. 804) as follows:

The socially constructed, historical pattern of material practices, assumptions, values, beliefs and rules by which individuals produce and reproduce their material subsistence, organize time and space, and provide meaning to their social reality.

Institutional logics provide the means to understand individual and organizational behavior and identity. Logics provide guidelines for interpreting and functioning in social situations (Greenwood, et al., 2011). It has been suggested that a single logic holds dominance over others, but the thinking has since moved on to recognize the co-existence of multiple institutional logics in a constellation (Reay & Hinings, 2009; Goodrick & Reay, 2011; Greenwood, et al., 2011; Lawrence, et al., 2011; Reay, et al., 2017). While different logics have previously been conceptualized as rivalry and inherently conflicting, scholars have begun considering the importance of complementary relationships among multiple co-existing logics (Reay, et al., 2017). The co-existence of multiple logics is called institutional pluralism, and how individuals and collectives cope with often conflicting logics is termed institutional complexity (Ocasio, et al., 2017). Despite the growing attention paid to the co-existence of multiple logics, efforts to understand how these logics affect the every-day work-life of individual professionals have remained limited (Goodrick & Reay, 2011; Zilber, 2013). The idea of a constellation of co-existing logics and how they guide individual behavior during the organizational transformation enabled the utilization of institutional theory as a powerful main element in theoretical framework for this research.

Agency refers to an actor’s ability to produce some effect on the social world, whether through altering the rules, relational ties, or the distribution of resources (Scott, 2014). Within the institution, agency contributes to the interpretation of an institution’s context and presents voluntarism in deciding which action to take. A study investigating three different departments and finding different responses to the same institutional logics in one organization confirmed individuals’ ability to combine, play with, and choose logics (Reay, et al., 2017). Authors have further recognized the extent to which organizational participants do not always conform to conventional patterns, but instead respond variably, sometimes creating new ways of acting and organizing and being (Scott, 2014). Lawrence et al. (2011) identified an individual’s intentional, conscious, and reflective efforts to change, or even disrupt, the existing institutions as part of this institutional work.

Agency represents an important concept in this research, as it provides an analytical concept for studying individuals and sub-collectives affecting the institutional environment within a corporation (which, in turn, is anchored to institutions). It also provides tools to examine how a bottom-up initiative can be successful even in cases where the change influences existing institutions. Instead of focusing on the macro-level of institutional theory, it is interesting to
consider institutional change put into effect by individuals who energize their roles and rituals as they simultaneously challenge, modify, and disrupt them (Bettilana, 2006; Lawrence, et al., 2011).

Figure 7 illustrates how a constellation of logics interplay. Logics exist at different levels, such as departments, organizations, and fields. The circles in the figure represent this hierarchy. Within the institutional complexity, individual agency allows for individual interpretation and, at the same time, provides an opportunity to affect the institutional pluralism by changing the existing logics and creating new ones.

![Figure 7. Constellation of logics simultaneously constrains individuals' responses and is defined by the same individuals.](image)

Organizations or groups of organizations are documented as initiating institutional change, but research on individuals acting as institutional entrepreneurs remains scarce (Bettilana, 2006; Reay, et al., 2006). However, a few examples of bottom-up institutional work exist, and they provide some ideas of how institutional change can be initiated in a bottom-up fashion, and even by an individual (Reay, et al., 2006; Reay, et al., 2017). Embeddedness describes the degree to which actors and their actions are linked to their social context, and this has become an important concept for explaining institutional change (Reay, et al., 2006). An interesting perspective for bottom-up change concerns the idea that the embeddedness of an individual in a given institution can also offer opportunities to identify possibilities for institutional change. This contrasts the common notion among institutional theorists that embeddedness causes increased resistance to change (Reay, et al., 2006). Individuals that are deeply embedded within an institution can identify several micro-processes and
use them to introduce new ideas, including recognizing or creating opportunities to advance the “new” way, fitting the “new” way into established structures and systems, and proving the value of the “new” way to others (Reay, et al., 2006, p. 993).

The idea of multiple simultaneous logics and the individual’s or a group’s ability to interpret and modify logics through agency allows us to study how a new institutional logic can be introduced locally to complement or modify the current constellation of logics. Doing so within a given environment involves a collective process of interpreting the guiding institutional logics and the relationships among them. This process relies on four mechanisms: revealing the hidden influence of a logic, reinforcing the conflict between logics, reframing the meaning of a dominant logic, and re-embedding the new arrangement of logics (Reay, et al., 2017, p. 1064). The micro-processes at the local level can lead to a visible change in the macro level by first creating isolated examples of the new means of working and then moving to wide-spread acceptance. This stage is called legitimizing, separating it as a pre-state to institutionalizing or as a taken-for-granted means of working (Reay, et al., 2006). When sufficient momentum is achieved for a legitimized change, this has a chance to advance to the macro-level institutional change, affecting a field.

Important logics in light of this research obviously include the organization’s current dominant logic and the new logic stemming from the experimented model for organizing that relies on self-organizing teams. The team-based organization model is discussed in section 3.3.4. The fact that the company comprises part of a larger corporation brings another significant logic into play—namely, corporation logic. The three institutional logics and their key features are presented in Table 5. The institutional logics are defined with four organizational feature groups used to categorize organizations by Laloux (2014, pp. 327-331): structures, human resources, daily life, and major organizational processes.

The dominant, existing local logic at the outset of the transformation was characterized by functional division, though this was neither particularly formal nor bureaucratic. The product development department had practiced agile development for eight years, which also provided other functions familiarity with the cross-functionality and fixed cadence for different ceremonies. Human resources came from the corporation as a centralized service, but their involvement in practice was subtle. Close to the same time as the beginning of the team-based organization transformation, a larger corporation change took place. This involved a more thorough integration to the corporation for the case organization, and thus, the presence of the second logic—corporation logic.
Table 5. Organizational features of the three logics in the case organization. Model based on (Laloux, 2014).

<table>
<thead>
<tr>
<th>Organizational feature groups</th>
<th>Existing local logic</th>
<th>Corporation logic</th>
<th>Team-based organization logic</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Structure</strong></td>
<td>Divisional</td>
<td>Complex matrix organization</td>
<td>Self-organizing teams</td>
</tr>
<tr>
<td></td>
<td>Product development in agile teams</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Human resources</strong></td>
<td>Abstract job titles with hidden accountabilities</td>
<td>Rigid categorization with job codes</td>
<td>Dynamic role definitions</td>
</tr>
<tr>
<td></td>
<td>Performance review by manager</td>
<td>Individual performance reviews</td>
<td>Personal/team accountability for training/development</td>
</tr>
<tr>
<td></td>
<td>Training/development defined by manager (requested by employee)</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Daily life</strong></td>
<td>Informal decision making, no defined process</td>
<td>Decision-making in hierarchy</td>
<td>Explicit distributed decision making</td>
</tr>
<tr>
<td></td>
<td>Large meetings, no practices nor particular agenda or focus</td>
<td>Large status meetings</td>
<td>Focused, outcome oriented, synchronization meetings, and workshops for collaboration</td>
</tr>
<tr>
<td><strong>Major organizational processes</strong></td>
<td>Agile product development</td>
<td>Stage-Gate™ process for product development</td>
<td>Holacracy and agile product development</td>
</tr>
<tr>
<td></td>
<td>Annual budgeting for total, dynamic allocation for value streams</td>
<td>Annual budgeting process</td>
<td>Annual budgeting for total, dynamic allocation for value streams</td>
</tr>
</tbody>
</table>

Corporation logic is characterized by a complex matrix structure. Work management is largely plan-driven, even while officially agile and lean initiatives are affecting the process development. However, process development remains largely focused on the product development function and not the other functions. For example, finance mostly remains a conventional annual budget-planning activity. Human resources began to assume a larger role, most visibly a strong drive for individual rewarding systems and rather rigid individual job codes and grading systems. Many of these characteristics conflict with the team-based organization logic.

The third logic, and the focus of this research, is the team-based organization logic. A team-based organization model obviously and fundamentally changes the core organizing principle (the team-based organization model discussed in detail in section 3.3.4). From the divisional, manager-led model, the organization moves to a structure based on self-organizing teams. While individuals bear accountability for their roles, they are expected foremost to contribute to a team’s success at the cost of their own objectives. The role of a manager changes from managing people to supporting the structure. A considerable amount of conventional human resource accountabilities is shifted to teams and individuals themselves, such as employee development and performance management.
Modeling the institutional environment with just three logics is considerably simplified. As discussed above, there is a constellation of logics affecting a given organization. These are formed from different domains, such as professional fields of various disciplines of engineering, marketing, financing, and others. We set our sights on these three institutional logics, because they emerged during the analysis process of the third study. The three logics were relevant and sufficient for explaining the dynamics in the case organization’s transformation. This was done understanding that there are other logics at play as well.

3.2 Nature of organizational change

The second study sought to change the means of organizing in the case organization. While conventional organizational change models were abandoned rather early for this research, to better understand organizational change, it became an important element of the theoretical framework. This section provides the theoretical background on organizational change and organizational development. We start by discussing the wide spectrum of change that affects organizations. Specifically, we consider how conventional models and even mainstream contemporary models possess weaknesses and shortcomings. While widely recognized as challenging, organizational change without a doubt does occur. Therefore, we next summarize the identified success factors for organizational change initiatives from existing knowledge. This provides a lens to assess the case regarding organizational change. Going forward, we pay specific attention to what is known about change in large organizations or corporations in order to position this research in contrast to existing organizational change literature. Finally, we examine contemporary thinking in the field of organizational change and consider how it resonates with this research.

3.2.1 What is organizational change?

In this research, the potentials and limitations of bottom-up organizational change are studied. In short, organizational change means that an organization moves from the current state to a new state. Moran and Brightman (2000, p. 66) define change management as follows:

The process of continually renewing an organization’s direction, structure, and capabilities to serve the ever-changing need of external and internal customers.

Due to the wide spectrum of different organizational change initiatives, several authors have suggested ways to categorize them (Senior, 2002; Lawson & Price, 2003). We explore the versatility of change initiatives using three categories: discontinuous versus incremental change, the size of an affected organization, and the level of a needed mindset shift (Table 6). At the end of the chapter, we position this research using this categorization.
Table 6. Characteristics defining the type of change initiative.

<table>
<thead>
<tr>
<th>Category</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Discontinuous versus incremental</td>
<td>Discontinuous change is a rapid one-time event. In contrast, an incremental change is a series of smaller adjustments.</td>
</tr>
<tr>
<td>Size of an affected organization</td>
<td>Size of the organization, or part of the organization, that is affected by the change.</td>
</tr>
<tr>
<td>Level of mindset shift</td>
<td>How deeply the employees' current underlying assumptions and beliefs are challenged by the change.</td>
</tr>
</tbody>
</table>

Discontinuous change (Grundy, 1993, p. 26) describes “change which is marked by rapid shifts in either strategy, structure or culture, or in all three.” Examples of triggers for a discontinuous change include technological innovations or a new regulation on certain food products due health scares (Senior, 2002). In other words, a discontinuous change represents a “single, abrupt shift from the past” (Luecke, 2003, p. 102). Advocates of discontinuous changes argue that, when more dramatic changes in productivity, competitiveness, and profitability are needed, this can only be achieved through more radical change approaches (Dunphy & Stace, 1993; Guimaraes & Armstrong, 1998).

Burnes (2009) refers to incremental change when individual parts of an organization deal incrementally and separately with one problem and one goal at a time. Grundy (1993) suggests dividing incremental change into smooth and bumpy incremental changes. Smooth incremental changes describe a situation wherein a change evolves slowly in a systematic and predictable fashion and at a constant rate (Grundy, 1993; Senior, 2002). Bumpy incremental changes, meanwhile, are characterized by periods of relative tranquility punctuated by acceleration in the pace of change (Grundy, 1993). In between the more violent periods of change, the organization goes through periods of incremental change. In contrast to more turbulent changes, the incremental change that happens continuously may be mistakenly considered organizational stability (Nelson, 2003). This change model is often called punctuated equilibrium (Balogun & Hailey, 2004; Burnes, 2009). Advocates of incremental change argue that even a large-scale change is best implemented through successive, limited, and negotiated shifts, and that this represents the happy medium between stagnation and brutality of rapid corporate transformations (Burnes, 2009).

Dunphy and Stace (1993) differentiate change according to the size of an affected organization, resulting in fine-tuning, incremental adjustment, modular transformation, and corporate transformation. Fine-tuning describes an ongoing process to align organizations’ existing strategy, structure, people, and processes. Incremental adjustment involves changes in the existing business strategy, structures, and management processes, but does not entail radical changes. Expanding an existing sales territory would fall into this category. Modular transformation represents a radical change, but it only affects one or few departments or divisions—not the whole organization. A major restructuring of a particular department would be an instance of modular transformation. If the change is revolutionary and affects the entire organization, or if it is causing radical shifts in the existing strategy, then the
change is characterized as corporate transformation. A reform to the organizational mission and core values represents a change of this magnitude.

Lawson and Price (2003) differentiate the magnitude of change efforts into three levels according to the required level of mindset shift. The first level is straightforward, as it does not require people to change their means of working. An example in product development could be starting to develop a new product. The second level impacts employees more, but it simply involves adjusting the existing practices and possibly learning some new ones. The changes, however, occur within their current existing mind-set. In that sense, there is no impact on deeper beliefs that the individuals or the group of people in general hold. An example would be a new approach to software testing in an environment where investing in testing is already a common practice. The last level of change affects the organizational culture fundamentally. An example would be changing the management paradigm from hierarchical to self-organizing teams. This level of change requires a holistic approach.

<table>
<thead>
<tr>
<th>Type of change</th>
<th>Discontinuous</th>
<th>Continuous</th>
</tr>
</thead>
<tbody>
<tr>
<td>Size</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fine-tuning</td>
<td></td>
<td>Corporate</td>
</tr>
<tr>
<td>Adjustment</td>
<td>Modular</td>
<td></td>
</tr>
<tr>
<td>Level of mindset</td>
<td>Straightforward</td>
<td>New ways of thinking</td>
</tr>
<tr>
<td>change</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

![The change initiative in this research](image)

**Figure 8.** The type of change in this research.

Figure 8 illustrates the type of the change initiative researched in this study. The type of change is undoubtedly continuous in nature in that the change itself aims at developing structures designed for further continuous change. The size of the change initiative is modular, affecting only a part of the corporation. The initiative and the research focus on a single entity inside a much larger corporation. The entity, however, is affected by the corporation and is not independent. The level of required change in mindset is significant. For most of the people in the case organization, the proposed model challenges how they think about organizing and work management. We can conclude that, overall, the change is significant. Furthermore, it is initiated bottom-up in a corporation, which is not used to change in this fashion. From the research perspective, this also represents a challenge, as the conditions for the initiative
are highly unpredictable and are not controlled by the researcher or even by the members of the organization being studied.

### 3.2.2 Conventional approaches to organizational change

There is no lack of literature on organizational change. However, Todnem (2005) refers to several authors and identifies a lack of consensus regarding the organizational change frameworks. What is currently available comprises a wide range of contradictory and confusing theories, approaches, and recipes. There is no one universal approach to organizational change, but rather, the practitioners need to be aware of a plethora of models and theories and must be able to choose which are useful and when (Burnes, 2009). However, we can divide conventional change management literature into two main approaches to change: planned and emergent (Bamford & Forrester, 2003). The following takes a closer look at both and discusses their shortcomings.

*The planned approach to organizational change*

We begin by examining the planned approach to organizational change. Advocates of this approach insist that radical change cannot take place gradually or in a piecemeal manner, but must instead be rapid, disruptive, and even revolutionary (Chia, 2014). Table 7 summarizes this approach through three characteristics: phased up-front plan, assuming organizations are stable, and top-down execution.

**Table 7. Characteristics of planned approach to organizational change.**

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Phased and up-front planned</td>
<td>Change is implemented in a finite timeframe according to a pre-planned sequence of execution.</td>
</tr>
<tr>
<td>Organizations are normally stable</td>
<td>Stable operation in the organization is assumed. The change project aims at changing the state, but the new state is expected to be stabilized again.</td>
</tr>
<tr>
<td>Executed in top-down manner</td>
<td>It is assumed that top management observes and identifies the need for the organization to go through the change process. Equally, top management is responsible for controlling and monitoring the change project.</td>
</tr>
</tbody>
</table>

This approach is based on a *phased up-front plan* for driving change. The planned approach is often cited to be based on the work of Kurt Lewin, a German-American psychologist who lived between 1890 and 1947. While his influence on the change management body of knowledge is unquestionable, the references found in academic literature are less so. It has been argued that the change model was not the primary interest of Lewin, but that popularity was gained with others repackaging and marketing afterwards (Cummings, et al., 2016). Nevertheless, the model often cited as Lewin's unfreeze-stabilize-refreeze (or unfreezing-moving-freezing) model recognizes the need to discard the old behavior before any new behavior can be successfully adopted (Bamford
Theoretical framework

& Forrester, 2003). While Lewin’s focus was not on organizational change per se, but rather on a broader aim of resolving social conflict (Burnes & Bargal, 2017), this three-step model has influenced change management models for the past 70 years, leading numerous models to resemble each other. For example, Bullock and Batten (1985) reviewed 30 models for planned change and developed a four-phase model of planned change that split the process into exploration, planning, action, and integration.

Early approaches and theories regarding organizational change assumed organizations to be stable most of the time. After a change initiative, the new state is expected to be stabilized again. According to this view, it is not uncommon to believe that an organization could never be effective if it continues changing (Rieley & Clarkson, 2001). These mental models further anchor the idea of change as a temporary event in time.

The planned approach is typically executed in top-down manner and driven by senior management (Wilson, 1992). They are responsible for identifying the need and then planning and implementing the change in their organization.

Challenges with the planned approach to organizational change

As previously discussed, the planned approach to change has roots stretching back far into history, and it has been considered to be highly effective (Burnes, 2009). However, since the early 1980s all the way to the modern day, this approach has undergone increasing criticism (Kanter, et al., 1992; Burnes, 2009). Table 8 presents a summary of some of the challenges associated with conventional plan-driven organizational change programs.

<table>
<thead>
<tr>
<th>Challenge</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assuming organizations operate in stable conditions</td>
<td>Organizations are constantly changing, and it is difficult to isolate a specific period of change effort.</td>
</tr>
<tr>
<td>Change does not last</td>
<td>A single, focused change effort leads to consequences that can outweigh or undo the original intention.</td>
</tr>
<tr>
<td>Not taking complexity into picture</td>
<td>Every adjustment has consequences in the organization environment. This interdependency, and the subsequent complexity, is overlooked in the planned approach to change.</td>
</tr>
</tbody>
</table>

The first challenge is that the planned approach to organizational change assumes that organizations operate in stable conditions and that they control how they move from one stable state to another (Bamford & Forrester, 2003). However, this grounding assumption has been widely questioned over the years (Wilson, 1992; Burnes, 1996; Burnes, 2009). It is argued that the tendency for an ever-increasing speed of change on operational and strategic levels further weakens this underlying belief. Graetz (2000, p. 550) even summarizes that, “Against a backdrop of increasing globalization, deregulation, the rapid pace of technological innovation, a growing knowledge workforce, and shifting social
and democratic trends, few would dispute that the primary task for management today is the leadership of organizational change.”

A single planned change event is claimed to be unable to produce lasting changes in an organization (Grundy, 1993). After the change has seemingly been implemented, the focus of original change agents shifts to new territories, and the old paradigm may resurface. The change does not last. Luecke (2003) presents a more comprehensive explanation of underlying problems, stating that a single change initiative with fixed goals easily leads to complacency in senior management, which subsequently leads to defensive behavior, routines, and inward focus in departments. The complacency and discipline can only sustain the achieved change for so long. Without a continuum to re-energize the working environment, the new state will slowly degenerate if for no other reason than people growing bored with the same routines.

The planned approach seems too naïve regarding organizational complexity and relies on the assumption that group behavior is rather stable and predictable (Burnes, 2009). Another angle of criticism is directed toward assuming that people are willing to work in one direction with no disagreement and, in general are capable, willing, and interested in being engaged in the required change (Bamford & Forrester, 2003; Burnes, 2009). These presumptions neglect that an organization comprises a complex entity with organizational politics and power considerations (Wilson, 1992). These affect each other in a manner that is not easily identifiable even at the time of the effect. The planned approach's focus on isolated change events does not seem to be prepared for these discoveries (Burnes, 2009).

In summary, plans often do not survive reality. Despite the conventional focus on planning for change projects, it is widely acknowledged that reality rarely offers chances for extensive analysis and planning in a top-down manner. Rather, change is seen as a messy, unpredictable, open-ended, and political affair. Proponents of this view see the planned approach as unsuitable and support the emergent approach to change management (Burnes, 2009). For this reason, the planned approach to change for the case was abandoned early in this thesis. The desired end state was not clearly known at the outset, and furthermore, the goal was to create an organization that would be dynamically and continuously changing based on shared and distributed responsibility to sense the need for change, both at the local and entire organization levels. It would have been inappropriate to implement this change with a completely contrary approach.

The emergent approaches to organizational change

In response to this criticism of the planned approach to organizational change, the emergent approach has gained traction. This approach is sometimes referred to by other labels, such as continuous improvement and organizational learning (Burnes, 1996). Table 9 summarizes the characteristics of emergent approaches. Advocates of the emergent approach state that it is impossible to consider change as an isolated incident. They claim that, because of the
unpredictability involved, change initiatives are more than just executing planned change; in large part, it also involves a process of organizational learning (Altman & Iles, 1998). Furthermore, Burnes (1996, p. 13) argues that successful change is less dependent on detailed plans and projections than on reaching an understanding of the complexity of the issues concerned and identifying the range of available options.

Table 9. Characteristics of the emergent approach to organizational change.

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Change is continuous</td>
<td>Organizations face a need for continuous fast-paced change in their operation.</td>
</tr>
<tr>
<td>Bottom-up</td>
<td>Many of the triggers for change are only visible locally and are invisible to centralized senior management. The change initiatives become a responsibility of a wider group.</td>
</tr>
<tr>
<td>Complexity embraced</td>
<td>Unpredictable consequences and continuously changing situations are embraced. The navigation through change is adaptive and flexible.</td>
</tr>
</tbody>
</table>

In contrast to single change events, the ability to change continuously even in a fundamental manner is mandatory to keep up with the fast-paced change (Burnes, 2004). Change represents a normal and natural response to varying conditions rather than a special occasion. The emergent approach change is thus not a linear, one-off isolated event, but rather a continuous, open-ended, and iterative process of incrementally aligning and realigning organizational priorities with an ever-changing environment (Nelson, 2003; Chia, 2014). Todnem (2005) suggests that the emergent approach to change is more concerned with change readiness and facilitating change than with providing specific pre-planned steps for each change project and initiative.

The emergent approach considers change a bottom-up exercise rather than top-down, as is the case with the planned approach (Burnes, 1996; Bamford & Forrester, 2003; Burnes, 2009; Chia, 2014). This approach further acknowledges that change is so rapid, it is impossible for senior managers to effectively identify, plan, and implement the necessary organizational responses (Bamford & Forrester, 2003). Luecke (2003) suggests that everyone in an organization should be accountable for sensing and responding to changes, internal and external, as a continuous, ongoing process. The responsibility for organizational change is distributed throughout the organization. Therefore, the emergent approach views outcomes to be the result of cumulative and oftentimes “piecemeal” adaptive actions taken in situ by organizational members (Chia, 2014).

In contrast to the planned approach, the emergent approach embraces the complexity of organizations and the change that affects them. Instead of seeing change as a planned, linear series of events, it is seen as a complex, continuous adaptation to moving circumstances and conditions (Burnes, 1996; Burnes, 2009; Bamford & Forrester, 2003). To cope with the complexity and
uncertainty of the environment, it is suggested that organizations need to become open learning systems that continuously monitor and realign change programs (Nelson, 2003). It is further emphasized that change entails a significant amount of unpredictability, and there are multiple variables at play.

**Challenges in emergent approach to organizational change**

The emergent approach to change faces its own share of criticism as well, however. Table 10 summarizes the challenges:

**Table 10. Challenges with emergent approach to organizational change.**

<table>
<thead>
<tr>
<th>Challenge</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lacking clear guidance</td>
<td>The published models provide a wide range of rather abstract guidelines for the change and require knowledge to apply in real-life situations.</td>
</tr>
<tr>
<td>Organizations as a source of change</td>
<td>Organizations have freedom to choose whether to adapt to change triggers from outside, but they may also act on their own will as a source of change.</td>
</tr>
</tbody>
</table>

A clear theme in criticism regarding the emergent approach stems from the fact that this method features a relatively shorter history than the planned approach, and thus **lacks clear guidance**. Advocates of the emergent approach comprise a rather broad group of people who tend to be more united by their skepticism of the planned approach to change rather than by a well-focused and commonly agreed alternative (Bamford & Forrester, 2003; Burnes, 2009). The criticism of the lack of clear guidance might be missing the point, however. It is not the intent of emergent models to lay out detailed guidance. According to Burnes (2009), the general applicability of the emergent approach to organizational change largely depends on whether one believes that all organizations operate in dynamic and unpredictable environments to which they must continually adapt.

A great deal of the writings on organizational change focus on reacting to change. The change is triggered by some event outside the control of the organization. Emergent approaches improve responsiveness by distributing the responsibility for identifying and acting on change. Some authors, however, have already viewed change through a wider lens for some time, and they suggest that the **organizations create change** as well (Hamel & Prahalad, 1996; Highsmith, 2009).

The emergent approach to change would have been better suited to this thesis than the planned approach. However, as mentioned, it lacks clear guidance and seems to focus on organizational change as a response to external triggers. The case was set to go beyond this and to create an organization that would continuously change based also on internal impulses. Combined with the fact that there is no unified guidance in the existing models of emergent change, this resulted in the decision to not choose any model as a basis for this research.
3.2.3 Success factors in organizational change

In his doctoral dissertation, Lanning (2001) summarized 16 different success factors for organizational change initiatives found in the literature. Based on his empirical research, he identified three groups of factors affecting the success of change: will, ability, and opportunity. In Table 11, the success factors are divided into these three groups. Furthermore, the success factors in each group are listed based on how many individual studies they were listed in (weight column in the table). While this research chose not to follow any conventional approach to change, it is assumed that the success factors are more globally applicable with different approaches to change. Therefore, we use the list of success factors as a reference when evaluating the bottom-up transformation in chapter 9.

If employees possess the will to engage in the change or development initiative, they will actively take concrete actions to help the change progress. They also find intrinsic motivation high enough to counter any personal discomfort or stress caused during the change period. Additionally, effective communication providing realistic and supporting information for the change initiative results in greater change acceptance and support for change (Griffith-Cooper & King, 2007; Oreg, et al., 2011; van den Heuvel, et al., 2014). Furthermore, ongoing monitoring of the change initiative enables adjustments to further communication and activities, enabling controlling with feedback (Stouten, et al., 2018). Adjustments based on feedback steer the change, but aligned visions and goals provide the change initiative’s overall direction. The vision statement portrays an idea of an organization’s future state and plays a critical role in organizational change (Kirkpatrick, 2009). Goals, in turn, represent more concrete and specific shorter-term targets toward the vision. Continuing, for a change initiative to be successful, the change vision must align with an organization’s overall strategy (Lok, et al., 2005). Leadership comprises an important (although sometimes over-emphasized) element in change initiatives (By, et al., 2016). Earlier literature called for leaders as change agents at all levels of an organization, not just managers (Stouten, et al., 2018). Top and middle management, for example, can play both change initiation and change execution roles (Hayden, et al., 2017).
### Table 11: Summary of critical success factors of organizational changes in literature (Lanning, 2001, p. 24).

<table>
<thead>
<tr>
<th>Success Factors</th>
<th>Weight</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>WILL</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Effective communication</td>
<td>11</td>
<td>Transparent and open communication is needed to build trust and common understanding in the change initiative.</td>
</tr>
<tr>
<td>Control and feedback</td>
<td>10</td>
<td>The progress of the change initiative is monitored, steered, and communicated based on the feedback acquired.</td>
</tr>
<tr>
<td>Vision and clear goals</td>
<td>10</td>
<td>Vision and goals provide a direction to the future state of an organization and realistic, specific stepping stones toward this state, respectively.</td>
</tr>
<tr>
<td>Motivating people</td>
<td>5</td>
<td>For an organizational change, the motivation of individuals is crucial.</td>
</tr>
<tr>
<td>Connection to strategy</td>
<td>3</td>
<td>Change initiatives must be driven by the organization’s overall strategy.</td>
</tr>
<tr>
<td>Leadership</td>
<td>2</td>
<td>In a change initiative, the leadership becomes the force moving a group of people into an intended future state.</td>
</tr>
<tr>
<td><strong>ABILITY</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Purposeful participation</td>
<td>13</td>
<td>Those affected by the change initiative are empowered to take part in planning and implementing the required changes.</td>
</tr>
<tr>
<td>Management support</td>
<td>12</td>
<td>Many change initiatives are time-taking, and there are competing priorities during the change. Top management needs to be committed to support the change initiative for longer-term benefit but must also themselves be prepared to change their behavior accordingly.</td>
</tr>
<tr>
<td>Supporting environment</td>
<td>10</td>
<td>Structures, processes, and tools need to be reconsidered to support the new desired state of an organization.</td>
</tr>
<tr>
<td>Purposeful planning</td>
<td>9</td>
<td>A plan for change initiative should provide a good enough overall framework with flexibility to adapt to unpredictable reality of implementation.</td>
</tr>
<tr>
<td>Training</td>
<td>8</td>
<td>Training (academic and on-the-job) is essential for both willingness and ability.</td>
</tr>
<tr>
<td><strong>OPPORTUNITY</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Clear need for change</td>
<td>8</td>
<td>Comprehensive understanding of the change itself and motives behind it enable establishing a sense of urgency.</td>
</tr>
<tr>
<td>Key persons and organization</td>
<td>5</td>
<td>People in the core group should come from versatile backgrounds and have strong influence in the organization.</td>
</tr>
<tr>
<td>Paying attention to culture</td>
<td>4</td>
<td>Long-lasting change mandates cultural change (addressing deeply held fundamental beliefs). This is difficult to do directly, but it is important to respect and understand the organizational culture.</td>
</tr>
<tr>
<td>Risk management and dealing with resistance</td>
<td>4</td>
<td>Sustaining the status quo is natural to human beings. Therefore, it is important to communicate effectively and involve people in the change process.</td>
</tr>
<tr>
<td>Co-operation</td>
<td>3</td>
<td>Large-scale change initiatives require co-operation across organizational boundaries, including both functional and hierarchical levels.</td>
</tr>
</tbody>
</table>
Will alone is not enough; each person also requires the *ability* to perform according to the change initiative. Said ability includes generic knowledge, context-specific skills, and skills that the change itself mandates. Ability also includes an understanding of the overall motives behind the initiative and the role that an individual assumes in the big picture. Purposeful participation means that superiors and subordinates work jointly on an initiative. This approach might seem slower than in top-down management, but it captures deep knowledge from the organization and essentially changes peoples’ social habits while implementing the change. Furthermore, participation has been identified to improve information sharing and increase motivation, especially in smaller groups (Wagner, 2009). Management support transforms from supporting the change to participating by changing one’s own behavior as part of the change (Jacobsen, 2008; Hayden, et al., 2017). In addition, the overall environment needs to support the new state, including the rewarding and incentives processes, for example (Kaufman, 1992; Allen & Kilmann, 2001). Purposeful planning provides context for the change and the flexibility to react to tradeoff decisions due to the unpredictable nature of organizational change initiatives (Kaufman, 1992). Training is essential in change (Griffith-Cooper & King, 2007), but often remains overlooked due to the incorporated time and cost of intensive training. However, general training and follow-up on-the-job training and monitoring is mandatory for both the willingness and ability to operate in a new fashion.

The factors for success are not complete without a third element—namely, *opportunity*. Opportunity means enabling conditions for the change. In the work environment, this refers to aligned management behavior, supporting organizational structures, and aligned working agreements regarding conditions after a successful change. The most important element in involving everyone in the change is a generic understanding of the need for change (Rousseau & Tijoriwala, 1999). Even with everyone involved, there is typically a group of key persons at play in the change, such as a guiding coalition, as described by Kotter (Kotter, 2014). The core group should include people from versatile backgrounds with strong influence (not necessarily formal power, but being respected and listened to) and the ability to provide the necessary leadership. However, systematic research on guiding coalition activities is not available (Stouten, et al., 2018). One supporting mechanism could be that key persons possess knowledge regarding the organization’s past. Organizational change literature has largely overlooked an organization’s past events and history, especially with previous change efforts, which play an important role in how members of the organization respond to change (Bordia, et al., 2011). Paying attention to the organization’s past and culture is crucial for the change initiative’s success. Failing to do so often leads to resistance to change, one of the most often cited reasons for high numbers of failures in efforts for organizational change (Burnes, 2015). In most cases, the change requires cooperation across the organizational boundaries (Griffith-Cooper & King, 2007). Often, changes in one area will lead to changes in other areas as well.
3.2.4 Organizational changes in large organizations

While identified as key for large organizations’ future success, finding clear guidance for large-scale change based on empirical evidence remains difficult. Large transformations have been identified as a nascent research area, and the current research is biased toward successful cases based on short-term observations (Lee, et al., 2012). Furthermore, the results from a limited number of studies are even contradicting (Al-Haddad & Kotnour, 2015).

Large organizations often want to execute change even while being successful, such as to update the technology, product range, or business model to match future needs. This has proven to be challenging, however, as it remains difficult to argue the new ideology’s superiority at a large scale when the old ideology is institutionalized and taken for granted by the most if not all employees (Lukka & Partanen, 2014). Further complicating matters, it is likely that multiple views regarding a specific topic exist in a large organization. Heldal (2015) studied a transition of a Norwegian hospital over several years and found the change process to be highly influenced by professional boundaries and loose coupling between the different professional communities. Based on this, Heldal recommends that change managers pay attention to this, especially in work systems consisting of professionals. In a large corporation, multiple professions are typically divided by the formal organizational structure, such as project management office, financial control, sales, marketing, and human resources. The case organization in this research comprises a part of a large corporation. The case organization and the transformation were affected through the professional boundaries in the corporation, and during the transformation, only loose coupling existed between them.

The need to consider a large number of people in a complicated context may make one think that the planned approach is the most utilized approach in large organizations. In contrast, a study of multiple change efforts in a British multinational company discovered that the change execution was mostly emergent, or at least, none of the initiatives followed a recognizable planned change model (Bamford, 2006). Bamford further identified some areas where the empirical data from the case study linked with existing literature on emergent change; specifically, change represents a continuous process of experimentation, small-scale changes lead to transformation, managers create a climate supporting experimentation, and managers should be facilitators and provide the direction for the organization. The case in this research focused on a small-scale change in one operative unit of a large corporation, and it was driven in a bottom-up fashion. However, the case organization’s managing director was both supportive and affected by the change as a participant.

Hammer et al. (1994) studied organizational change in 228 large Norwegian firms. More than half (141) of the firms were from the private sector, and 52 possessed more than 200 employees, with the largest one possessing 5,730 employees. An interesting characteristic of this environment concerns the extensive set of laws dictating non-managerial employees’ participation in decision-making. Interestingly, no correlation was identified between the extent or form of workforce participation and the outcome of change projects or the
level of resistance. This might indicate that the law-mandated collaboration and participation in an organization’s governance has enforced a certain level of collaboration between management and employees, and investing more in this does not result in improvement. However, agreement was not reached concerning the change projects’ success. In over half of the firms, the management considered the goals of the change project met. The workforce in those case companies, however, did not consider the projects successful.

Based on the results from the continuous internal collaboration between the management and workforce, Hammer et al. (1994) did not support the idea of having special programs or external help in the execution of changes. The transformation of the case organization in this research sought to create a system for distributed dynamic governance within the same structure. While the case organization received some help from external experts during the transformation, the goal was to create a self-sustaining dynamic governance model. The research performed in Norway provides confidence regarding this approach’s feasibility and potential for answering future change needs. However, as mentioned above, the case organization’s transformation comprised a bottom-up initiative based on locally identified needs, and the larger corporation or entities across the professional boundaries were not part of this collaboration. This produced a significant effect on the case.

3.2.5 Novel approaches: Change as the backbone of effectiveness

The change models have been questioned for some time. As early as 1995, Edmonstone concluded that “many of the change processes over the last 25 years have been subject to fundamental flaws, preventing the successful management of change” (1995, p. 16). Some authors even suggest that, with only a few exceptions, existing practices and theories are mostly supported by unchallenged assumptions regarding the nature of contemporary organizational change management (Doyle, 2002; Stouten, et al., 2018). For example, the contemporary empowering structures and cultures in organizations create a need for different ways to introduce organizational change compared to what conventional management has been capable of accomplishing. As illustrated previously, while contrary to what most people might believe, even in large organizations, the change often occurs with the emergent approach, small changes leading to a larger impact and success requiring a collaborative approach including all members of the organization. Even if the prior knowledge was valid at that time, the volume of change has increased, creating a situation where organizations going through multiple changes in parallel represents a normal, stable situation. The organizational change is thus no longer an anomaly between stable phases. This phenomenon has also not gone unnoticed by practitioners. The organizational change presented in this research followed a bottom-up approach, and the new target state of the case organization included continuous on-the-job change management by the practitioners. Therefore, this research abandoned the idea of following conventional models for organizational change (sections 2.6 and
3.2.2). Rather, the idea was to implement a model that would allow the organization to implement further changes as part of normal operation. Table 12 summarizes characteristics of a novel approach to organizational change, and the rest of this chapter provides the reasoning behind the approach.

Table 12. Characteristics of novel approaches to organizational change.

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Change becomes the normal state</td>
<td>Organizations are continuously going through transformations, and it is becoming the common state.</td>
</tr>
<tr>
<td>On-the-job change</td>
<td>A change or transformation is embedded more and more in day-to-day working and not as a separate activity. Working teams, as self-organizing entities, become an important subject of changes.</td>
</tr>
<tr>
<td>Change is not managed</td>
<td>Because of the complexity, a change is not centrally managed, but steered by individuals reacting to situations locally.</td>
</tr>
</tbody>
</table>

Change has come to be the new normal state. There is growing awareness that theories regarding organizational change need to pay more attention to change processes as a nonlinear, continuous phenomenon characterized by chaotic dynamics (MacKay & Chia, 2013). This may represent an area where the Western world can learn something from other cultures. In Western management knowledge, the regulation itself is consciously maintained by leaders or managers. In contrast, Chinese consider regulation to be a natural process (Ivanova & Persson, 2017). In the ever-changing contemporary organizational environment, the change must be a natural continuum, not drawing any special attention. This was manifested in this case, as the case organization was affected by several parallel transformations. There were also signs that this situation was to be continued after the case, and more transformational change would follow.

Following the thinking above, moving from the current to future state happens more continuously as an on-the-job change, not as a distinctive change or training campaign. This idea is also not completely new. Lewin already believed that the best and most effective means of bringing about change in individuals occurred through group encounters (Burnes & Bargal, 2017). In the context of action research (aiming for change), Lewin also clearly stated the need for two origins of knowledge: "general laws," which are the product of basic and academic research, and more specific knowledge, which derives from the "specific character of the situation" (Burnes & Bargal, 2017). At the outset of this research, the model for organizing was not clear, and the members of the case organization lacked detailed knowledge, not to mention experience, regarding how the model worked. As such, the best approach was really the only option; the change must happen on the job.

An additional characteristic of novel change management is that change is not managed, creating a paradox with the term “change management” itself. This notion may be difficult to be acknowledged by Western managers, for whom it is more natural to actively do rather than “letting happen” (Chia, 2014). MacKay and Chia (2013) emphasize the fact that individual decision makers possess impartial control over the course of transformation. The intended actions
Theoretical framework

interact with the environmental circumstances, which may result in unintended consequences. This creates a complex, multi-causal process far beyond the potential of centralized control. The required change leadership incorporates subsequently made settled, quiet insertions that are more dependent on the timeliness and selectivity of engagement rather than weight of superiority of force (Chia, 2014). This role is also owned by more people than earlier, depending on the situation. Today, one can find all sorts of people in various situations helping to provide at least some degree of leadership (Kotter, 2014). Ivanova and Persson (2017) argue that the real change agents are the humble leaders in shadow who adopt a pragmatic approach to take full advantage of the context. The successful change strategies relate to patience and humility, opportunist observations, awareness of the situation, and relevance of action. Different members of the case organization possessed varying levels of participation, but the learning occurred in collaboration according to the observations made regarding the change. This practice is, in fact, focal in the experimented model for organizing.

3.3 Models of organizational structure

The final element in the theoretical framework concerns the models of organizational structure, and this section begins by reviewing the different models. While it is common to understand organizational structure as a hierarchy, alternatives have long been proposed based on the conditions of the work and the environment (Herbst, 1976). We examine different models to understand where the case organization, and the corporation to which it belongs, fits. Following this, the focus shifts to novel thinking about organizational structures as alternatives to conventional hierarchical models. The concept of teal organizations is thus introduced with characteristics that novel organic organizations share. One specific framework depicting these characteristics, Holacracy, is introduced in a rather detailed manner, as this represented the chosen framework for the case organization. We also examine what kind of guidelines these models provide for transforming existing organizations.

3.3.1 Adapting organizational structure

Organizations describe systems formed by individuals. Organizations need a way to control and group these individuals and the activities they perform in some way in order to steer away from chaos. The allocation of responsibilities and authorities and controlling the work is called an organization’s structure (Senior, 2002). Rosenfeld and Wilson (1999, p. 255) define organizational structure as
The theoretical framework

The established pattern of relationships between the component parts of an organization, outlining both communication, control and authority patterns. Structure distinguishes the parts of an organization and delineates the relationship between them.

The organizational structure thus offers the most immediate means of describing how the organization is expected to work. When examining different models of organizational structure, the simplest model can be called *the entrepreneurial structure* (Figure 9). In this model, everything depends on the owner or founder of the business. She or they make all the decisions and directly influence the organization’s culture. The model’s clear strength resides in the flexibility and clarity of responsibilities. The simple, entrepreneurial structure is organic, but it usually lacks a means to scale beyond the point where the CEO can make all the decisions.

Figure 9. Models of organizational structure.

The bureaucratic or *hierarchical structures* comprise a diverse group, but they are usually built around the departmentalization of an organization (Figure 9). Departments are defined based on, for example, products, functions, or business areas. The strength of these models is that they appear to provide clarity and economies of scale. This structure is expected to provide benefits in terms of effective utilization of people and a focus on improving particular kinds of operations. Paradoxically, the disadvantage is the exact opposite; these models often suffer from local optimization or duplication of efforts (Bartol & Martin, 1998).
The theoretical framework seeks to tackle the above-mentioned disadvantages of the hierarchical models (Figure 9). In a matrix structure, people typically have two or more lines of reports. A typical combination constitutes a functional line, such as product development, and a project line, which describes a cross-functional group of people based on the skills needed for project execution (Rosenfeld & Wilson, 1999). This model is clearly leaning more toward the actual work to be done rather than optimizing, for example, purely for functional efficiency. However, its downfall concerns its complexity and, sometimes, an inevitable rivalry between two or more hierarchies (Bartol & Martin, 1998).

A network, or an organic structure, represents the other end of the continuum (Figure 9). It exhibits an extremely flat reporting hierarchy to the point that all employees are equal when it comes to decision-making power. It is typical to see a low number of relatively unchanged rules and processes, which allow flexibility for local adaptation depending on the context and situation. The decisions made are expected to be better informed, as a wide range of information is available to everyone. The disadvantages include an experienced loss of centralized control and the potential for decision making to take longer if the employees are seeking consensus on everything.

As previously discussed, an organization’s formal structure strongly communicates the manner in which it operates, or at least, the way it is expected to operate. For example, if the formal organization presentation implies the hierarchy and enforces the meaning of a power structure, then its effectiveness in fostering an empowering culture can be questioned. Similarly, if the formal organization structure emphasizes the division into functions, it might work against the cross-functional collaboration.

In practice, it is not this straightforward to categorize the structure of a given large company. First, most utilize a mix of above-mentioned models. A large company can, for example, utilize the divisional structure, divisions within themselves can utilize the matrix structure for projects, and the central financial department is shared among divisions. Second, it has been well documented that, alongside the formal structure, an informal organizational structure exists as well (Pflaeging, 2014; Kotter, 2014). This duality of formal and informal structure is examined later in this chapter.

The bottom part of Figure 10 illustrates the transformation in the case organization using different organizational structures as a continuum. The circles with the solid line illustrate the situation in the beginning. The corporation exhibits characteristics of the hierarchical structure, but also utilizes the matrix structure in many of its activities. The case organization’s structure in the beginning was largely characterized as hierarchical and divided by functions, but not very formally. The move toward a more organic model had already begun with small steps. Product development was already organized in teams, and it is illustrated with the solid line inside the dotted line circle, which represents the future state of the whole case organization. The case research presented in this thesis focuses on transforming the case organization fully to the organic model.
3.3.2 Formal and informal structures

Dalton (1959, pp. 219, see Carnall, 2007) defines informal or unofficial organization as “the spontaneous and flexible ties among members, guided by feelings and personal interest indispensable for the operation of the formal, but too fluid to be entirely contained by it.” This informal model has long been acknowledged, and it typically emerges due to pragmatism (Nadler & Tushman, 1980). People tend to break the formal model when it makes sense for accomplishing the work. Formal channels are often too rigid and slow. The situations in operations also vary, and formal models seldom possess the flexibility required to handle this. Another mechanism for how the informal structure emerges is social. Whenever there are people involved, social networks will form. Even in mature organizations, informal networks of change agents frequently operate under the radar to make something new happen faster (Kotter, 2014). These networks are influenced by, for example, sharing a common interest outside the work. Another, potentially more negative reason for social networks at the workplace occurs when someone is seeking a personal advantage through social influence. Nevertheless, social networks play a significant role at the workplace.

To understand organizations, we must understand both its formal and informal sides (Carnall, 2007). Kotter (2014) reminds us that the management-driven hierarchy represents one of the most amazing innovations of the 20th century. We cannot discount daily demands of running a company, which traditional processes do rather well. Pflaeging (2014) suggests that organizations should embrace the informal structure and move as much of the
authority and operations as possible to this structure, lessening the meaning of the formal power hierarchy. Kotter (2014) lists basic principles of a company that officially sustains both the network and hierarchy structures (Table 13).

Table 13. Principles of organizational dual operating system (Kotter, 2014, pp. 23-26).

<table>
<thead>
<tr>
<th>Principle</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Many people driving change</td>
<td>More people in the organization need to be involved in identifying triggers for change, and they need to be internal.</td>
</tr>
<tr>
<td>A “get-to” mindset</td>
<td>A desire to work together for an important and exciting shared purpose instead of “just having a job to do.”</td>
</tr>
<tr>
<td>Head and heart driven, not just head</td>
<td>Motivation comes not just from logic, numbers, and business cases. Organization relies on a genuine and fundamental desire to contribute to some bigger cause.</td>
</tr>
<tr>
<td>Much more leadership, not just more management</td>
<td>To harness the big opportunities, the role of leadership becomes significant. It all depends on vision, opportunity, agility, inspired action, passion, innovation, and celebration. The management of repetitive tasks does not cover this aspect.</td>
</tr>
<tr>
<td>An inseparable partnership between the hierarchy and the network</td>
<td>The two systems must work seamlessly together with a continuous flow of information between them. The two cannot become two separate silos.</td>
</tr>
</tbody>
</table>

3.3.3 Organic organizations: Temporary and teal organizations

Temporary organizations

The fact that work is increasingly shifting away from the hierarchical lines of organizations is not a new phenomenon (Vallas & Beck, 1996). In contrast to traditional hierarchical organizations, some organizations are governed and coordinated through social networks and mechanisms rather than by the lines of an authority (Powell, 1990; Jones, et al., 1997). As an example of such an organization, a temporary organization seeks to capitalize on their members’ specialized skills while keeping the cost of coordination to a minimum (Bechky, 2006). Similar ideas have been presented in various domains under different names, such as “craft administration,” “adhocracy,” and “quasifirm” (Faulkner & Anderson, 1987). Temporary organizations build around people with various skills who must work together in order to achieve complex work (Goodman & Goodman, 1976). As temporary organizations often work in uncertain environments, they rely on local processes instead of a central and formal management structure (Bechky, 2006).

If the control is not executed in a hierarchical manner, this raises the question of what is there in its place. Studies indicate that controls of a bureaucracy and a hierarchy are actually replaced by alternative control mechanisms. Table 14 summarizes the control mechanisms mentioned in the literature:
Barker (1993) studied groups that worked without hierarchical lines of authority, determining that this did not result in a loss of control, but rather the opposite. Instead, the groups developed strong *normative rules* according to their values (Bechky, 2006). Centralized control tactics are thus gradually replaced by normative control (Barker, 1993; Smith, 1997).

Another coordination mechanism suggested in the organizational literature involves a clear structure of *roles and responsibilities*. This has been identified, for example, in organizations working in critical and complex activities, such as fire-fighting brigades (Weick, 1993) and emergency response teams (Bigley & Roberts, 2001). According to role theory, roles, while dependent on an individual’s self, form the basis for social organization (Turner, 1991). As such, they offer a means to subtly control an organic organization.

Feldman and Pentland (2003) claimed that a *structure and an agency are interrelated*, and thus, organizational activities are created and recreated through organizational routines. Bechky (2006) identified interactions as the key element of coordination. Interaction between members of the organization simultaneously directed the tasks and communicated expectations of each other’s roles. Direct responses to others’ behavior functioned as a quick means to consistently link tasks and behavior of roles. Learning how the roles interact coordinates, enables, and constrains the work.

**Teal organizations**

Several theories and models describe how people have evolved over time from the earliest forms of human consciousness to the highly complex consciousness of contemporary times (Laloux, 2014). Different lenses have been utilized in models exploring the development of people, such as

- Worldview,
- Cognitive development,
- Values, and
- Self-identity as a human.

Laloux summarized the recent literature, suggesting that development does not happen continuously, but rather in transformations from one stage to another, which is clearly identifiable as different. As the people evolve, so do the structures they develop, including organizations and companies. Laloux (2014) identifies the different stages within the organizing context using colors. From

---

### Table 14. Control mechanisms in temporary organizations.

<table>
<thead>
<tr>
<th>Control mechanism</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Normative rules</td>
<td>In the absence of hierarchical central control, normative rules emerge through value-based work ethic.</td>
</tr>
<tr>
<td>Roles and responsibilities</td>
<td>Roles and responsibilities define the patterns in social organizations.</td>
</tr>
<tr>
<td>Interrelated structure and agency</td>
<td>The structure is created and recreated through the practices of work.</td>
</tr>
</tbody>
</table>
The theoretical framework of modern work-life perspective, the most interesting ones (amber, orange, green, and teal) are summarized in Table 15.

A model with stages is not to be interpreted as a path for improvements, however; one is not better than the other. It is also important to mention that, when an organization moves to a new stage, it does not forget the prior stages. Organization still exhibits the learnings from all previous stages when and where deemed appropriate. Furthermore, if we place different evolution stages on a timeline (Figure 11), we notice that it has taken less and less time to move from one stage to another. Because of this, today, more paradigms are present at the same time than ever before.

![Figure 11. Different evolution stages on a timeline (Laloux, 2014, p. 35).](image)

Table 15 summarizes the different stages across three parameters: a main driver, breakthroughs, and a key differentiator from the prior stage. We do not dig deeply into the stages beyond the most modern, teal. Over a two-year period, Laloux included 12 organizations in his research. The organizations were chosen because they have been pioneering in operating to a significant degree with a novel organizing model. The organizations varied from metal manufacturing and electricity production to healthcare and education. Based on the research, he defined the teal organization (Laloux, 2014).

![Table 15. Summary of different evolution stages, summarized from (Laloux, 2014).](table)

As we see, teal organizations have advanced along three major breakthroughs: self-management, wholeness, and evolutionary purpose (Laloux, 2014). The first breakthrough emphasizes that teal organizations have implemented a high level of self-management. They have learned how to operate effectively, even at a large scale, using neither power hierarchies nor a need to seek consensus. The teal organization’s operation is based on peer relationships and alignment.
regarding company’s direction. From these practices, the organizational design emerges without any central commanding power.

The second breakthrough, wholeness, breaks the convention of having a “professional self.” The practice of wholeness means that each employee behaves as herself in professional life. Exhibiting emotions at the workplace, for example, has commonly been considered unprofessional. In teal organizations, however, employees’ human side is welcomed. All teal organizations have developed practices to invite everyone to bring themselves to work as who they really are.

Evolutionary purpose represents the third teal organization breakthrough. Teal organizations see themselves as living organisms rather than static entities. Teal organizations are continuously and dynamically organizing to fulfil the company’s purpose according to the outside world. An evolutionary purpose of a given company provides answers to questions such as, “What is my calling? What do I really want to achieve?” The same questions and answers apply for both an individual and the entire company.

The teal organization concept is quite abstract, and it leaves considerable room for interpretation in the actual implementation. What is clear is that teal organizations have abandoned the traditional pyramid-like hierarchy. Peer commitments have replaced the hierarchical relationships, though this is not to say they are chaotic. They indeed possess a structure. The case companies in Laloux’s book manifest self-organizing within three distinct structures: parallel teams, web of individual contracting, and nested teams.

When the value stream is long, as in the case organization, and the situation requires dynamic processes, a nested teams structure represents the best fit. The difference from the parallel teams model is that, in these situations, a single team cannot achieve the full value stream. For example, a company of 500 employees developing and selling industrial electronics cannot simply be divided into 50 10-member parallel teams, each responsible for the full value stream from obtaining the requirements from the market to bringing the innovated solution back to the hands of the customer. Instead, there will be teams dedicated to smaller steps in the value stream. One team might be responsible for product development of certain types of products, for example. In parallel, another team might be responsible for other types of products. In addition, there is a team comprised of the former two as sub-teams. This team is responsible for setting the direction of the entire product family. This hierarchy is necessary to break down the purpose, complexity, and scope. It replaces the hierarchy of people and power (Laloux, 2014). Each team down in the hierarchy focuses on a narrower area of purpose, complexity, and scope, but does so while being fully empowered and self-organizing.
3.3.4 A team-based model for a teal organization: Holacracy

Holacracy (Robertson, 2015) describes a comprehensive framework for adapting the decentralized management model in an organization. It was also included in the research conducted by Laloux (2014) when he defined the teal organization. Holacracy replaces the traditional pyramid-shape hierarchical organization model with one built of circles (i.e. teams) and roles in those circles. Therefore, Holacracy provides guidelines for implementing a nested-teams structure for longer, more complicated value streams. The name Holacracy comes from the concept of holarchy. Koestler (1967) proposed a term “holon” for a whole that, at the same time, comprises part of a larger whole, calling a hierarchy of holons a holarchy. Holacracy simply means the governance of and by the structure of holarchy. Holacracy is at least partly inspired by agile development and lean thinking (Robertson, 2015), making it an interesting approach when thinking about scaling agile development at the organizational level. This linkage with agile development, combined with the fact that Holacracy was the best-defined model at the time the transformation began in the case organization, made it a straightforward decision to choose this framework to begin with. Considerable information was available in the form of books, web writings, and training programs. It also provided highly concrete and prescriptive rules for following the framework, such as meeting agendas and practices and ways to organize the work. While this may sound counter-intuitive to self-organization and emergence, it also provides practitioners a rule-book needed to start learning immediately by doing. The rest of the chapter provides an overview of these rules.

Figure 12 illustrates the idea of circles and roles. Each circle comprises a holon—a self-organizing whole with its own purpose, but a part of a larger whole. The greatest shift is that circles are organically evolving around work to be performed instead of around people and their power relationships. The organization is first defined in terms of roles and circles, and combining them to fulfil the company’s need. Assigning people to roles comes second. Each role features a purpose and a set of accountabilities. The role bears full authority for acting toward the purpose and taking care of the accountabilities. When the accountabilities become too much for a single person, then the role is divided into new roles, possibly combined into a new sub-circle of the original circle. Therefore, compared to traditional titles and job descriptions, Holacracy provides a crystal clear, up-to-date, and transparent means of knowing who is accountable for what and what is expected from anyone in the company.
Holacracy introduces four default roles for each circle: lead link, rep link, facilitator, and secretary. Lead and rep links together implement the double-linking practices between super- and sub-circles. The lead link comes to a sub-circle from its super-circle. The responsibility is to clarify the circle’s purpose, which is delegated from the super-circle. The rep link’s responsibility is the opposite; the assignee presents the sub-circle in the super-circle. The reason for this is to make the impact of decisions for the sub-circle known and considered in the super-circle. The facilitator is responsible for the process and enabling efficient meetings. The secretary is responsible for making the artefacts available after the meetings and clarifying the current governance in case of misconceptions.

In addition to the default roles, an organization also features organically defined roles. Each role possesses two main duties: First, the assignee is responsible for working on projects related to accountabilities defined for the role. The second duty is to sense tensions. The assignee is expected to continuously observe and monitor the organization’s performance. Tension describes an identified gap between the observed performance and the state that “could be” based on current knowledge. Tensions are not necessarily observed as problems; rather, tension can arise from a situation that is functioning as planned, but which could be improved with the current knowledge. This represents a considerable difference compared to conventional improvement focused solely on problem solving. When energizing a role, the assignee is also responsible for prioritizing the work and making the priority and the progress transparent.

As previously mentioned, Holacracy offers clear guidance for meetings, which was found to help start the transformation in the case organization. The transformation is introduced in detail in the second study. Each circle features two types of regular meetings: tactical and governance. The objective of the tactical meeting is to focus on operational work. To this end, tactical meetings are structured around a strict agenda:
Theoretical framework

- Check-in round
- Checklist review
- Metrics review
- Project updates
- Triage issues
- Closing round

The check-in round opens the meeting and comprises a quick round-robin through the participants. Each participant in turn “checks in” by stating what is on his or her mind. This simple practice aims at obtaining everyone’s attention in the meeting and starting the meeting by providing everyone a voice. Next, checklist review goes through all checklists identified for the circle. Checklists typically state reoccurring work for any role, and the assignee of the responsible role answers with just a quick “check” if everything is in order. Metrics are reviewed similarly. The assignee of the responsible role for each metric quickly indicates the status and whether it is progressing according to the forecast; no more time is spent discussing it. The following topic concerns project updates. In Holacracy, the term “project” means an outcome that requires multiple distinctive steps to be accomplished. These steps are, in turn, called next-actions. Projects should be named to state the desirable outcome. This subsequently helps define the project’s end-state. During the project updates, projects are gone through one by one, and the assignee of the responsible role provides an update regarding what has been done and how the plan has evolved. If nothing has been done since the last meeting, a prompt “no updates” is sufficient. Once the project updates are heard, it is time to build an agenda for triaging issues. Everyone can post a topic in the format of one or two words. These are collected as an agenda. Once all issues are called, the facilitator prioritizes them, and the processing begins in this order. The standard system for processing the issues is for the facilitator to ask, “What do you need?” The need can be simply providing information to others or asking information from other circle members. Often, however, it means that a new project or next-action needs to be captured. The actual work is not handled in this meeting. Once the person who raised the issue is happy with the processing, the meeting moves on to the next issue until the time is up or the agenda runs out of issues. The facilitator should focus on ensuring all the issues are handled in the given time. The closing round again comprises a quick round-robin. This time, each participant provides their insights about the process for the meeting. These insights are not discussed, but they should lead to improvements in meeting practices. This also serves to provide everyone the “final word.”

The other regular meeting in Holacracy is governance meetings. While a tactical meeting focuses on operative work, the objective of a governance meeting is to modify the structure of the roles and the circle. Governance meetings are also structured around a strict agenda, as follows:
The theoretical framework includes:

- Check-in round
- Administrative concerns
- Building the agenda
- Process each agenda item with the integrative decision-making process
- Closing round

The check-in round is the same as in the tactical meetings. When going through the administrative concerns, the facilitator collects all logistic constraints that the meeting has, such as the total time available and each participant’s possible time constraints. The part on building the agenda follows the same practice as in the tactical meeting. Each participant can post proposals in the format of one or two words, which the facilitator collects and prioritizes as a list of proposals to go through. The difference is that, in the tactical meeting, the tensions concerned operations, while in the governance meeting, the agenda topics propose changes in the organizational structure (roles and circles). After all proposals are collected, it is time to start processing them. The processing follows the integrative decision-making process (Robertson, 2015). It begins with the original proposer presenting the proposal in more detail. The proposer should present the tension she seeks improvement for and, preferably, present an improvement proposal or initiate a discussion to form a proposal. Once presented or formed, the other participants can present clarifying questions regarding the proposal. Once all are answered, the circle goes through a reaction round. Reactions can be anything except targeting any individual directly. No interruptions or dialogue is allowed. Based on the clarifying questions and reactions, the proposer can keep the original proposal, amend it based on new discoveries, or withdraw it all together. The objection round is reserved for presenting valid objections against the proposal. For an objection to be valid, it needs to meet specific requirements. The person objecting is obligated to present evidence that the proposal, if implemented, would be harmful to the existing roles or the organization. If this is not possible, the proposal is accepted. For example, objections are not valid if they are raised because better ideas might be available or that the proposal does not address the biggest problems. If there are one or more valid objections, an integration round is called for. Objections are processed one at a time with the goal of modifying the proposal such that it would avoid the objection but still address the original tension. Once all objections are integrated, the objection round is initiated again to ensure that no new objections were raised because of the changes. The closing round is again reserved for each participant in turn to reflect on the meeting.

3.3.5 Transforming an existing organization

Holacracy also offers guidance for transforming an existing organization (Robertson, 2015). Similar frameworks exist, and they include help for transforming as well. Many frameworks define different approaches depending on the organization’s current state, such as whether the company is a new, small one or an established, larger organization. The approaches summarized in Table
16 refer to larger, established organizations. The frameworks are selected purely because the approach is documented.

### Table 16. Guidelines for getting started in different team-based models.

|--------------|----------------------------------------|----------------------------|----------------------------|-----------------------------------------------|
| Decide       | Necessary conditions: 1. Top leadership 2. Ownership | Determine you truly have an organization  
Formally adopt the Holacracy Constitution  
Set up the shared System for Governance Records | Make the sense of urgency tangible | Co-create the core guiding values |
| Organize initially | Start change in one or more areas: 1. Self-organizing 2. Wholeness 3. Evolutionary purpose | Determine the initial structure  
Hold first governance meetings and run elections  
Setup a shared "corkboard" for operational items | Find and unite the core group (guiding coalition)  
Write your organization a letter | Spot people culturally closer to the liquid organization |
| Evolve       | Continue introducing and enforcing the above three areas | Start tactical meetings | Go with the change energy, not against it | Start one or more projects with cross-functional teams using the liquid organization model. |

By comparing the change guidelines provided in specific frameworks, we can identify similarities. On a higher level, all the guidelines feature three stages: decide, organize initially, and evolve. In the deciding stage, the organization should perform the basic homework and ensure that mandatory requisites are met. Different methods vary in the specific matters they focus on, but in general, the organization should ensure that the commitment to move in this direction is shared across the organization. This can be communicated by providing a formal, or semi-formal, statement about the new basic rules. Holacracy goes as far as defining a “constitution” based on which the company operates.

The next stage is to organize initially. The organization is structured and begins working according the rules defined in the deciding stage. Reinventing organizations focus on proceeding gradually in three areas: self-organizing, wholeness, and evolutionary purpose. The literature offers examples of simple practices that can be implemented to begin. Holacracy again possesses concrete guidelines for describing the organization and meeting practices to be followed.
However, all frameworks recommend beginning to follow the methods and rules quickly after deciding on their first set.

The final stage, *evolving*, emphasizes the dynamic nature of all the approaches. After quickly getting up and running, they all contain elements for continuous improvements by sensing areas of improvement and quickly responding. This is good news from the change management perspective. The initial investment is rather low, and one begins practicing almost immediately.

### 3.4 Summary of the theoretical framework

Chapter 2 introduced how agile development methods have risen to the mainstream and obtained a de-facto process status in product development. The change in the manner of working in product development has been identified to trigger a need for change in other parts of the organizations as well. The inability to accomplish or even understand this change is mentioned as the main barrier for scaling agile thinking in organizations.

If the organization is operating based on top-down control and functional division, it may cause inertia for introducing principles from agile development, such as self-organization and emergent planning. It is interesting to study the effects of changing the means of organizing to be based solely on cross-functional and self-organizing teams. Self-organizing teams are central to agile development, which raises the question of whether this change in the manner of organizing could ease the conflict between agile development and the rest of the organization. The idea of using this approach in scaling agile thinking in the organization provided the motivation for this research. The team-based organization model was analyzed theoretically by the members and then later tested empirically as a two-year action research process. The experimented structure was inspired by the Holacracy framework and the teal organization concept.

The transformation itself became the focus area of the research. Since the end-state of change was not known, and the change was not triggered from the top, most conventional organizational change models were not applicable. The change was aiming at changing the organization to be more change-ready in the future—or, in other words, to change to be changing. While only one operative unit in a larger corporation was studied, the bottom-up transformation was naturally affected by the surrounding corporation. The size of the change in terms of people affected was limited, but the change was considered to require a mind-set change for individuals, making it a significant change. The approach to change was novel in that not much up-front planning was undergone and it was not centrally coordinated. Instead, a series of experiments were conducted based on continuous learning, and much of the steering was expected to happen on the job.

During the research, institutional theory became the main interpretation framework for the case. A constellation of institutional logics was recognized as at play in the case organization, and these logics were the main cause of inertia regarding transformation in the case organization. This is despite the identified
local benefits gained by the new organizing model. Institutional theory, and especially the concept of institutional logic and the role of a bottom-up agency, are used as the main tools when summarizing the contribution of this research.
4. Research design and methods

This chapter provides an overview to the research design and the methods utilized. First, the research questions are presented. Next, an overview is provided regarding the research methodology and how different research methods are employed together. The research comprises three studies and the main data collection methods used in different studies are presented next. This is followed by a discussion of the main approach for data analysis. A summary of the overall research procedure and a timeline of the entire research closes the chapter on overall research design. A more detailed description of the usage of different methods is included in separate chapters for each of the individual studies.

4.1 Research questions

To summarize the previous chapters, the implementation of agile methods in the case organization began in only one function, and in turn, the case organization is only one part of a corporation. As such, the transformation follows a bottom-up approach. The empirical inquiry was initiated by the problem of scaling agile thinking, and the tested approach was the team-based organization model. However, the focal area of interest in the research concerns the bottom-up implementation of organizational change of this magnitude. The main over-arching problem is thus as follows:

How does the change toward agile thinking unfold within an organization in a bottom-up approach?

The research problem can be divided into the following three main research questions:

RQ1. What are the implications and challenges of bottom-up adaptation of the agile development approach in product development function?

RQ2. How was the team-based organization model implemented in a bottom-up fashion to unfold agile thinking in the case organization?
RQ3. How are potentials and limitations of bottom-up institutional change shown?

The first research question seeks to understand what happens in the rest of the organization after a product development unit adopts a new means of operating and organizing. Agile development methods are, in many ways, based on completely contradicting basic underlying assumptions compared to the more conventional product development methods. The rest of the organization may continue to work based on these conventional contradicting assumptions and expect the product development unit to do the same. By answering the first research question, we gain a more concrete understanding on this phenomenon and shed light on what it means when some empirical findings state that the barrier for scaling agile thinking is that “organization culture is at odds with agile” (see section 2.5).

The second research question directs the focus to the other main objective—the model for change and transformation. It is based on the conclusion that conventional change management practices are not adequate for this task (see section 3.2.2). The objective is to understand whether it is possible to drive change of this magnitude with bottom-up practitioner-focused and experimental processes. At the same time, we explore how the team-based organization model works to address the organizational-level challenges in scaling agile thinking. The tested approach for unfolding agile thinking at the organizational level abandoned the idea of the hierarchical, divisional model for organizational structure (see section 2.6).

Finally, the third research question directs us to explore the potentials and limitations for the change when initiated by the work of a bottom-up agency (see section 3.1.3). By answering the last two questions, we create knowledge informing us to form a model for the role of bottom-up agency in institutional change. This constitutes the main contribution of this research.

Three studies were conducted to answer these main research questions. Each study possesses more detailed research questions. The detailed research questions are introduced in sections 5.2, 6.2, and 7.2. The answers to these questions are used to form the answers to the main research questions. Table 17 provides a numbered list of the research questions in each individual study and illustrates how they contribute to the main research questions and overall research problem.

Table 17. Research questions for each of the three studies.

<table>
<thead>
<tr>
<th>Number</th>
<th>Research question</th>
<th>Main research question</th>
</tr>
</thead>
<tbody>
<tr>
<td>RQ1.1</td>
<td>What kinds of organizational impacts are identified after adapting agile development methods in product development function?</td>
<td>RQ1 X RQ2 RQ3</td>
</tr>
<tr>
<td>RQ1.2</td>
<td>Is the team-based organization model an option to overcome the identified controversial impacts?</td>
<td>X</td>
</tr>
</tbody>
</table>
Research design and methods

<table>
<thead>
<tr>
<th>RQ2.1</th>
<th>How can the bottom-up agency initiate change at the organizational level?</th>
<th>X</th>
</tr>
</thead>
<tbody>
<tr>
<td>RQ2.2</td>
<td>How is the transformation controlled without the top-down steering?</td>
<td>X</td>
</tr>
<tr>
<td>RQ2.3</td>
<td>What outcomes emerge from a bottom-up change toward a team-based organization?</td>
<td>X</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>RQ3.1</th>
<th>What are the boundary conditions and tensions in the transformation initiated by the bottom-up agency?</th>
<th>X</th>
</tr>
</thead>
<tbody>
<tr>
<td>RQ3.2</td>
<td>What suggestions can be offered to affect these conditions and tensions in order to accelerate the transformation?</td>
<td>X</td>
</tr>
</tbody>
</table>

4.2 Methodological approach

The following introduces the main research methods. The most important decision was to utilize an abductive research approach (Levin-Rozalis, 2000) involving simultaneous and progressive theoretical and experimental studying. The abductive research approach originates from the work of Charles Sanders Peirce (1839-1914), an American philosopher. A case study approach provides tools to define the overall research setting. The actual process of research is strongly influenced by action research and grounded-theory-inspired data analysis. Figure 13 illustrates the main research methods and how they relate to each other as an overall research approach. The chapter continues by describing the roles of the research methods.

The overall research is divided into three individual studies. More detailed descriptions of research methods employed in each of the studies are presented in sections 5.3, 6.3, and 7.3. Table 18 below summarizes the three studies:

Table 18. Summary of the individual studies.

<table>
<thead>
<tr>
<th></th>
<th>Study 1</th>
<th>Study 2</th>
<th>Study 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Case</td>
<td>Case organization</td>
<td>Case organization as a team-based organization</td>
<td>Case organization + external actors</td>
</tr>
<tr>
<td>Research approach</td>
<td>Case study</td>
<td>Case study</td>
<td>Case study</td>
</tr>
<tr>
<td></td>
<td>Grounded theory</td>
<td>Action research</td>
<td>Grounded theory</td>
</tr>
<tr>
<td>Detailed research method description</td>
<td>Section 5.3</td>
<td>Section 6.3</td>
<td>Section 7.3</td>
</tr>
</tbody>
</table>
4.2.1 Case study

Case study is often used misleadingly as a synonym for a qualitative study. Yin (1994) writes that case studies can be based on any mix of quantitative and qualitative evidence, as in this research. In addition, case studies need not always include direct, detailed observations as a source of evidence (Yin, 1994). The term “case study” is used in at least two meanings: 1) describing a unit of analysis (e.g. a study of a particular organization) and 2) describing a research method. Patton (2002, p. 447) quotes Stake in claiming a “case study is not a methodological choice, but a choice of what is to be studied.” It is thus evident that numerous definitions of the case study method exist (Bell, et al., 2019). Yin (1994, p. 13) provides the following one:

A case study is an empirical inquiry that investigates a contemporary phenomenon within its real-life context, especially when the boundaries between phenomenon and context are not clearly evident.

The case study inquiry copes with the technically distinctive situation in which there will be many more variables of interest than data points, and as one result relies on multiple sources of evidence, with data needing to converge in a triangulating fashion, and as another result benefits from the prior development of theoretical propositions to guide data collection and analysis.
From the data-gathering perspective, the main strength of the case study comes from using multiple data-gathering methods and several data sources. This increases the research’s validity by enabling both data and method triangulation. In this research, the data is gathered from versatile sources, such as direct observations, field notes, company presentations, individual interviews, and focus group interviews. The data is largely qualitative, but quantitative data was also available to some degree. Data gathering is described in general in section 4.3 and in more detail for each study later in sections 5.3.2, 6.3.3, and 7.3.2.

An important decision in designing case studies is the choice between single- and multiple-case designs. In this research, the case study approach set the boundaries to a single organization (see Figure 4 on page 28 for the definition of an organization) and a timeframe during a transformational organizational change, making the research a single-case study. However, the case boundary was considered and modified between the individual studies. The continuous evaluation of the case definition represents a focal part of the abductive research approach, which is discussed next. While a single-case study obviously lacks opportunities for generalization, it is well justified in certain situations. One of the rationales for a single-case study is the revelatory case (Yin, 1994). This situation occurs when an investigator has an opportunity to observe and analyze a phenomenon previously inaccessible to scientific investigation. An opportunity to study a significant transformation in an industrial setting was available for the author. At this scale, this is not commonly available, providing the rationale for a single-case study. Furthermore, a single case study can be justified as a pilot case for future multiple-case research.

4.2.2 Systematic combining: An abductive research approach

This research took place in an industrial organization during its normal operations. Research in the real-life setting is challenging in many ways. In contrast to controlled laboratory research, the real-life setting is affected by changes outside the control of the researcher(s). Furthermore, it is difficult to set exact boundaries for the research, and due to the changes, this boundary is in flux at best. This means that the changes often call for redirecting the research problem, and this, in turn, calls for an additional theory. The modification of the research scope subsequently leads to additional data gathering, which affects the developing theory. We can see that a number of the research phases, which are expected to occur linearly in more traditional research approaches, actually occur all the time in parallel and are interlinked together.

Abductive research fits with the research environment described above. The setting for this research was highly unpredictable, and no complete theory would directly qualify for testing. While theories exist that can be considered valuable for studying the organizational transformation triggered by the introduction of agile development methods, no theoretical framework existed for the context and full scope of research. Therefore, this research started only with an initial theory as a set of preconceptions. Abductive research sits in
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between inductive (theory building) and deductive (theory testing), borrowing from both. It entails a back-and-forth engagement with the empirical world and with the existing literature (Bell, et al., 2019). Dubois and Gadde (2002) present an abductive approach, which they call systematic combining. It is based on two main processes: matching reality and theory and directing and redirecting. The two main processes affect, and are affected by, four factors: analytical framework, case, reality, and theory. Systematic combining allows the researcher to continually adapt the analytical framework and the case definition by moving from empirical research (reality) to literature review (theory) and then repeat this process in a cyclic manner. Figure 14 illustrates the process of systematic combining:

![Figure 14. Systematic combining based on abductive research approach (growing theory while exploring the phenomenon). Based on (Dubois & Gadde, 2002, p. 555).](image)

The first study examined the team-based organization’s general applicability to the case company’s situation. Just enough up-front theory research was conducted to present the team-based organization as a concept and inquire its feasibility for an organization. The first study and its results obviously set the direction for the rest of the research.

The second study comprised a two-year action research conducted in four cycles based on the first study’s results. The analytical framework, which forms the cornerstone of systematic combining, also began evolving based on the first findings. In parallel, further theory research on specific team-based organization models and an empirical study regarding their implementation was conducted. A large number of unexpected incidents occurred during the second study. The study’s direction needed to be considered in between all four action research cycles. The observations during the action research triggered a need to seek additional theories. Most influential were theories on change management (section 3.2) and institutional theory (section 3.1). This represents the essence of systematic combining and its matching reality and theory process. The process is driven by the continuous review between the observation in real life and theory. In contrast to a planned sequential research approach, in
a systematic combining approach, the researcher moves almost simultaneously between the two different domains of theoretical studies and the empirical real-life setting. Furthermore, significant overlap occurs between the data gathering and data analysis. Doing this enables the researcher to expand understanding in both the theory and the real-life phenomenon. When something disruptive was found in the fieldwork, this triggered a search for new complementary theories. Together, these influenced the emergence of a revised analytical framework.

During the action research, the analytical framework was continuously updated as new insights were made. The original framework was successively modified, partly because of unanticipated empirical findings, but also because of theoretical insights gained during the process. The following fieldwork was then once again guided by the adapted theory. Theory is particularly important in systematic combining, but it evolved during the research. As such, the need for theory was created in the process (Dubois & Gadde, 2002). This approach produces fruitful cross-fertilization where new combinations are developed through a mixture of established theoretical models and new concepts derived from the confrontation with reality. Systematic combining embeds practices for combining and adapting existing theories in a novel manner to match the discoveries in a unique context.

Finally, the objective of the third study was completely changed based on the second study’s results. Since it was felt that the case organization’s transformation was not progressing as well as anticipated, it was decided to study the mechanisms affecting the progress instead of studying the achieved results of the transformation. This further led to a change in case definition. Elements outside the original target organization were also included in the research scope. The boundaries to reality obviously influence the research, as they define its scope. Anytime a researcher stretches the boundaries, she opens the door for additional discoveries. Furthermore, it is evident that real-life settings for research are changing. We can only set artificial boundaries and theorize the impact of the external boundary elements. With systematic combining, or the abductive research approach in general, the changes in direction and case definition remain within the normal course of action. Compared to generic guidelines for case studies, systematic combining offers additional motivation for multiple data sources. In addition to enabling data triangulation and verification, in systematic combining, the researcher is interested in discovering unknown aspects and new dimensions of the research problem. A researcher performing systematic combining should not focus solely on examining the data sources supporting the current analytical framework, but should also seek disruptive data sources, potentially providing opportunities for new discovery and thus creating a need for research redirection. Similarly, the incomplete case description works as a tool to direct and redirect the research process. How the focus on the theory review on the one hand and, on the other hand, the empirical studies evolved during the research is presented in Figure 16 on page 84.
4.2.3 Action research

The term “action research” describes a spectrum of study approaches that focus on research and learning by intervening and observing the change process. Action research is in particular suitable for systematic combining since the research in the context of participatory action research involves building the relationship between theory and practice (McIntyre, 2008). Action research represents a continuous process of learning and change where researchers and clients develop a long-term interest in understanding and resolving a problem or issue (Cunningham, 1997). Through examples, McIntyre (2008) emphasizes the importance of involving the research participants throughout the entire research process. One example involves explaining to participants that the key part of a researcher’s role is to summarize, analyze, and criticize the data. Furthermore, it is recommended to explain to participants the method of sharing the results.

The second study used action research as a cyclic research framework, as defined by Stringer (1999). Stringer utilizes the terms look, think, and act for the different stages in his cyclic model. In this study, data regarding the change process and its implications in the case organization (the look stage) were continuously gathered. This data was employed to analyze what was happening at that moment, what the reason could be for what we were observing, and which areas should next be given improvement focus (the think stage). From the results of this analysis, planned and implemented change actions (the act stage) were identified.

It is important to note that action research involves a continuous recycling of these activities, not a single-shot linear process. The look stage includes data gathering and building a current picture based on this data. During the think stage, the researcher analyzes what is happening and explains why things are as they are. The final stage of the cycle, the act stage, represents the action and includes planning, implementing, and evaluating of the action. At the completion of each set of activities, participants will review (look again), reflect (reanalyze), and re-act (modify their actions) (Stringer, 1999). From this collaboration and constant re-shaping in a complex real-life setting, the distinction between research and action became quite blurred. However, there was no intention to create validated generalization beyond the particular case setting, which is typical for action research (Patton, 2002).

Conveniently for the action research, the model adapted by the case organization included practices for reflecting on the past and implementing identified actions for improvement. The team-based organization model also included several elements for transparency. Therefore, a great deal of data was automatically available for the inquiry. In this process, the author’s role centered on being a research facilitator, an observer, a data recorder, and a provider of specific process knowledge throughout the research. People in the case organization participated actively in both planning and analyzing the research together with the author throughout the case engagement. This served several goals of the action research, such as improving the organization’s
performance and contributing to the research, but also improving the validity of the research.

4.2.4 Grounded theory

A defined grounded theory approach was not utilized in this research, but the theory matching process of systematic combining was significantly influenced by grounded theory (Strauss & Corbin, 1994). Grounded theory describes a research approach seeking to develop a theory grounded in systematically gathered and analyzed data (Strauss & Corbin, 1994). However, the data collection and analysis are performed in an iterative manner (Bell, et al., 2019). Grounded theory is suitable for research areas where little is known beforehand or the existing theories are scattered, as was the situation at the outset of this research. In grounded theory, the theory is constructed from the data and not chosen prior to research (Corbin & Strauss, 2015). In contrast, the analysis in this research was performed as conceptual development and not just developing the theory from the data. While the grounded theory research begins with a defined purpose, the data analysis may result in emerging new theoretical positions and understandings (Gray, 2018).

The data collection methods varied during the research in three different studies, but starting from the first study, insights from the data were identified and coded according to the grounded theory. An essential practice in grounded theory involves utilizing a series of cumulative coding cycles and reflective analytic memoing to develop categories for the analysis and theory generation (Glaser & Strauss, 1999; Miles, et al., 2014; Gray, 2018; Bell, et al., 2019). Codes are just tags, labels, or denoted concepts assigned to a certain “chunk” of data, such as a word, sentence, paragraph, or illustration (Miles, et al., 2014; Corbin & Strauss, 2015). As the research progressed, more insights were made, and coding evolved via renaming, combining existing codes into new ones and removing previously identified but now obsolete codes. Further on, codes were grouped together into categories with more abstract names. During this research, the set of data codes and categories continuously evolved and was employed as a bridge between the real-life observations and the theory, but also as a bridge between the three studies.

From the codes and categories, a growing theory was built through analysis. This analysis was captured in both analytical diagrams and narratives. Having these larger displays of the theory evolving in parallel with codes and categories is essential for capturing the proposed theory. They provide the content behind the codes and categories (Glaser & Strauss, 1999). According to the systematic combining, additional existing theories were also continuously reviewed, as the research revealed a need for it. In a sense, both the systematic combining and the grounded theory research represent a never-ending journey, as the theory is ever evolving. This means that the previously collected data, codes and categories, narratives, diagrams, and theories were re-evaluated again and again as new data was collected, additional theories were studied, and new theories were generated from the data. As explained by Glaser and Strauss
“Generating and combining a new theory from data means that most hypotheses and concepts not only come from the data, but are systematically worked out in relation to the data during the research.”

A researcher conducting grounded theory research does not need to understand a specific situation better than the practitioners; rather, her unique skills help her generalize at conceptual level from observing these situations and problems. In grounded theory, “The root sources of all significant theorizing are the sensitive insights of the observer himself” (Glaser & Strauss, 1999, p. 251).

4.3 Data collection methods

This section introduces the main data collection methods employed throughout the research. The data collection was performed using multiple methods. Table 19 presents which methods were utilized for different studies. For each individual study, a more detailed description of how the data was gathered in practice is provided in sections 5.3.2, 6.3.3, and 7.3.2.

Table 19. Usage of data collection methods in individual studies.

<table>
<thead>
<tr>
<th>Method</th>
<th>Study 1</th>
<th>Study 2</th>
<th>Study 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stimulated recall interview</td>
<td>X (X)</td>
<td>X X</td>
<td>X</td>
</tr>
<tr>
<td>Focus group interview</td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Critical incident technique</td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Direct observation</td>
<td>(X)</td>
<td>X</td>
<td>(X)</td>
</tr>
</tbody>
</table>

4.3.1 Stimulated recall interview

Stimulated recall interview describes a specific interview method (Bloom, 1953). With this method, the interviewer uses material about the phenomenon under inquiry, such as video material, audio recordings, photographs, or illustrations. Having this material available helps the interviewee recall the actual course of events. As a technique, the stimulated recall interview helps gain unique insights into why people acted and responded in certain ways (Dempsey, 2010). Bloom (1953, p. 161) defines the method as follows:

The basic idea underlying the method of stimulated recall is that the subject may be enabled to relive an original situation with vividness and accuracy if he is presented with a large number of the cues or stimuli which occurred during the original situation.

Stimulated recall interview was primarily utilized in studies 1 and 3, but also to a smaller extent in reflection events during study 2. The interview focused on capturing how a person experiences a certain situation or chain of events at the
Research design and methods

time of occurrence. The interview itself helps build a shared understanding of the event between the interviewer and interviewee. The interviewer guides the reconstruction of the event by providing the cues, and the interviewee fills data with her own experience. In the first study, it was necessary for the interviewees to remember the last eight years. This timeline was employed as a visual representation of experiences laid out in a chronological and linear order. While it is generally recommended to conduct a stimulated recall interview rather soon after the event, a timeline can facilitate recollection and sequencing of past events in interviews (King, et al., 2019). Without the stimulated recall technique, remembering past events would have been rather difficult for participants. The third study examined the past two years, which was the period of the second study, in retrospect. The stimulated recall interview technique was utilized again after it became evident that interviewees had trouble identifying incidents throughout the two-year action research period. The downside of using pre-selected visual materials is that they may influence or restrictively bias interviewees’ thinking (King, et al., 2019). To minimize this risk, the visuals were employed after the interviewee got “stuck” during the interview or was focusing only on a specific time period, which was usually the period of most recent events.

It is important to dig a bit deeper when conducting an interview. To this end, it is useful to follow up initial answers with clarifying questions, such as

- Do you remember why you chose that course of action?
- Do you remember having any alternative actions?
- Can you recall anything that might have caused you to choose that path?

For studies 1 and 3, an instrument with previously developed follow-up questions was employed. This was useful to better guarantee equal coverage and depth of events between different interviews. Just as with any interview technique, it is important to avoid leading questions and/or providing any insights of disinterest to answers or not approving of certain types of answers. This requires conscious attention on the interviewer’s part, especially when the researcher is also part of the organization under research, as in this case.

4.3.2 Focus group interview

Focus group interviews were utilized in the first two studies. A focus group interview describes an interview with a small group of people on a specific topic (Bell, et al., 2019). The idea is to involve a group of naturally acute observers and well-informed people as a panel of experts about the setting or situation. Experts can lead the researcher inside the phenomenon of interest (Patton, 2002). Focus groups are employed in a variety of research applications, but it was an especially useful technique on several occasions during this research. For example, this provided a suitable and cost-effective technique for determining shared beliefs about certain topics and as a part of action research in the second
study to gather information from the given action research cycle from a targeted group of transformation leaders.

Focus groups, as the name suggests, are typically formed using homogeneous sampling (King, et al., 2019). The idea is to have a focused interview on some rather narrow subjects. People from similar environments and backgrounds represent the best candidates, providing an opportunity to cover the topic in depth. In this research, the groups consisted of special interest groups, such as external stakeholders or the transformation’s internal guiding coalition. Group size ranged between 6 and 10 people, which represents a typical focus group size (King, et al., 2019; Bell, et al., 2019). The length of the interview varied between one and two hours.

While interaction does occur between the participants in the focus group interview, it remains primarily an interview. It is not to be confused with a discussion or decision making. The participants do not need to agree or disagree. There is no end goal beyond collecting high-quality data in a social context where people can consider their own views in the context of views from others (Patton, 2002). This means that participants are affected by each other’s ideas and comments, stimulating the surfacing of additional data. The interviewer’s role differs from the normal interview in that she becomes more like a facilitator of the process rather than engaging in two-way communication between an interviewer and interviewees. The data collection through group interaction clearly distinguishes the focus group interview from other types of group interviews (King, et al., 2019). The main challenge is to keep track of the timing and scope of the discussion so that the planned area will be covered in the time available. While valuable in all interviews, in focus group interviews, a prepared interview instrument is essential to answer the above challenges. This enables the interview to remain focused but still allows individual perspectives and experiences to merge (Patton, 2002). When possible, an assistant was used during the interview in this research. The task of a facilitator-like interviewer is quite complex, and it is beneficial to have an assistant taking care of running arraigns, such as timekeeping, taking notes, managing recorders, and so forth.

Focus group interviews offer several advantages (Patton, 2002, p. 386):

- Cost-effective data collection
- Interactions among participants enhance data quality
- Light-weight assessment of which views are shared and which are more controversial
- Tend to be more enjoyable, bringing the human-side into the equation

As previously explained, the advantages fit several objectives during this research, but focus group interviews of course also possess limitations (Patton, 2002, pp. 386-388), as follows:

- The number of questions, therefore the scope, is restricted due the number of participants
• Time available per individual response is restrained in order to give everyone a voice
• Facilitating is more demanding job than just asking questions
• Minority viewpoints may not be heard because of peer pressure
• Focus groups are noticed to work best when people in the group are strangers to each other
• Controversial and personal issues are poor topics for focus groups
• Confidentially cannot be assured
• Focus group is better for identifying major themes than subtle differences
• Focus groups typically take place outside the natural setting

In this research, the advantages were considered to outweigh the limitations. Due to the lack of opportunities to interview certain groups of people individually, the focus group technique represented the obvious choice. The interaction among the interviewed group also brought more insights than individual interviewees were expected to bring. The limitations of the focus group were minimized by the fact that participants were close colleagues, bringing safety into commenting and avoiding any confidentiality issues. Unfortunately, the scope had to be limited due to the shortage of time available. However, focus groups were primarily used to evaluate broader topics with major themes rather than to identify the subtle differences. The facilitating was demanding, as expected. There was a tendency to start “working” during the interviews, such as developing a plan for tackling the identified challenges even though the scope was just to record how a certain event was experienced.

4.3.3 Critical incident technique (CIT)

The last study utilized a critical incident technique (CIT) in interviews for data gathering. Flanagan (1954, p. 327), who is usually credited as the developer of the CIT in its current format, defined an incident as “any observable human activity that is sufficiently complete in itself to permit inferences and predictions to be made about the person performing the act.” An incident is further called critical “if it makes a ‘significant’ contribution, either positively or negatively, to the general aim of the activity.” In its original format, the data collection in CIT was meant to involve direct observation, but in many applications, this is impractical (Strauss, 1993). Direct observations can only cover a limited number of incidents, and it lacks the means for capturing the emotions involved in decision making. Study 3 was interested in the past two years, which obviously made direct observations impossible. Instead of direct observations, open-ended interviews were employed. This offered the benefit of a more comprehensive coverage of details of incidents and prompting the interviewees to reveal conscious reflections on how they felt and considered the incident as an individual (Chell & Pittaway, 1998; Symon & Cassell, 1998). Instead of focusing on individual unique incidents, CIT application can also set the focus on identifying patterns of behaviors or a series of similar behaviors (Flanagan, 1954). To this end, two-step semi-structured questioning was used, which represents a typical process for CIT interviews. The interviewee was first asked
to comprehensively describe in his own words either a negative or positive incident in the context of the research topic. It has been found that the choice of words for this first question significantly affects the interview’s end result (Flanagan, 1954), and some minor adaptations were performed between the interviews. The second step depended on the richness of the initial description. The objective was to ensure that sufficient elements about the incident were captured. If needed, more information was gathered with follow-up questions about the details of the incident. While considerable background work and thinking is required by the researcher, the actual interview is largely unstructured (Chell & Pittaway, 1998). In practice, it is difficult to guide interviewees to hold on to a single incident; rather, there is a tendency to jump from one incident to another. The follow-up questions try to gain sufficient data to put structure to incidents during the post-interview phase. Strauss (1993, p. 412) offered examples of follow-up questions:

- Exactly *what* happened? (action)
- Exactly *who* did what? (actor)
- *Who* or *what* was the subject of the incident? (object)
- *Where* did the incident take place? (place)
- *When* did the incident take place? (time)
- *How* do you evaluate the incident? (evaluation)
- *What* exactly made you feel the situation was satisfying/dissatisfying? (cause of evaluation)
- *How* did you or how do you intend to respond to the incident? (consequence)

This list was used as the interviewer’s reference for the second step of the inquiry.

### 4.3.4 Direct and participant-observation

Observation in general is employed to describe the study setting, the activities that took place in that setting, the people who participated in those activities, and the meaning of what was observed. Participant-observation describes a special mode of observation in which one is not merely a passive observer. Instead, one may assume a variety of roles within a case study situation and may actually participate in the events being studied (Yin, 1994). Direct participant-observation’s role is therefore significant in action research, as in study 2 of this research. A typical concern with direct observation is that it is time consuming. This research was performed in the author’s own organization, which mitigates this concern, as the author was participating and observing anyway. The advantage, meanwhile, is that direct and participant-observation reveals details in a depth that cannot be gathered in any other way, which justifies the effort in more complex research scenes. As stated, when studying one’s own organization or work group (team), this offers a particularly natural method. In participant-observation, the actual manipulation of events is not normally as rigorous as in experiments, as the observer only takes part in the decision-making process, again fitting the setting under this research.
Participant-observation, while rather effective in many cases, also poses several unique difficulties for a researcher. First, the participant role may require so much attention that little room is left for systematic research activities. For example, in this research, the author’s role varied from a direct observer to a co-worker, a domain expert, and a coach. Second, the observer may become too attached to a group and adapt so strongly to a group’s manner of thinking that this causes bias in the data analysis. Challenges also arise through another mechanism. For instance, the event may proceed differently when there is knowledge about being observed. Even with these difficulties, however, direct and participant-observation proved an obvious choice for the second study because of the need for in-depth detail regarding everyday dynamics of the setting.

4.4 Data analysis

This section presents the overall high-level process for data analysis spanning across the entire research. The research was divided into three individual studies, and their data analysis is presented in detail in sections 5.3.3, 6.3.4, and 7.3.3. The overall research was reflected on and analyzed through the findings and answers to the research questions in individual studies to form a conclusion and answers to the main research questions. A high-level illustration of the data analysis process throughout the entire research is provided in Figure 15. The key analyzing practices included coding and creating concept maps together with causal link diagrams. Coding was already discussed in the section about grounded theory (section 4.2.4). When codes and categories were available, they were used to form concept maps and causal link diagrams, as presented by Senge (2006). In parallel with emerging causal link diagrams from the field work, the theoretical framework evolved as the new theories and models were studied to better understand and direct the field work. Finally, during the concluding analysis, the theory was considered together with the cumulated findings from the individual studies to form answers to the main research questions.
4.5 Research procedure

The research is divided into three consecutive case studies. The literature research and theory building were performed in parallel with the empirical research based on the systematic combining research approach. Each individual study stands on its own as an analytic unit, but as a series, they serve as extensions to the emerging theory (Yin, 1994). The entire research process is presented in Figure 16. On the top, the figure illustrates how the additional theory was studied in order to better form a theoretical framework. The bottom part illustrates how the real-life experiments focused on different aspects as the research went on.

The research process began by examining the case organization’s current state and how it had evolved during the past eight years while implementing agile development. This information was then utilized to evaluate the team-based organization model’s feasibility for scaling agile thinking in the organization and its way of organizing. In study 1, the primary data source comprised individual interviews. Interviewees consisted of people with long hands-on experience with the change in the case organization. The stimulated recall interview technique, and the same interview instrument, was employed in all interviews. To supplement this, a single focus group interview was organized. The focus group consisted of people who had been working with the case organization...
during the period of interest. Additional data was available in various formats, such as PowerPoint presentations, organization charts, and meeting and event memos.

The literature research during the first study focused on novel organizing models and concepts, such as teal organization (Laloux, 2014). Toward the end of the study, the two most influential models included team-based organization, as defined by Mohrman et al. (1995), and the Holacracy framework (Robertson, 2015). The team-based organization model was adapted from these sources and theoretically tested for feasibility in the case organization during the first study.

The second study featured action research on how changing the organizational structuring to a team-based organization model influences the environment. Primary data sources included the observations and documentation collected from various electric tools to capture the organization’s evolution. Furthermore, several smaller-scale interviews were also conducted throughout the research.

The emerging theory building was directed toward how organizations change. The initial starting point involved researching literature on organizational change and development. Toward the end of the study, these more conventional models remained background information as the interest was directed toward the institutional theory. Institutional theory thus became the main theoretical building block for the research. This provided the means to understand the difficulties in a significant change. The origin of the institutional theory consists of explaining why organizations seem to be static and resemble each other. This conventional use of the theory was useful in this research, but institutional theory can also be used to understand how change is possible in organizations despite the challenges, and furthermore, how a significant change can be triggered even by an individual.

The third study widened the case boundaries by starting to also consider the effect of stakeholders external to the core organization. The main data collection method consisted of individual interviews. The approach was to look in retrospect at the elements that affected the transformation during the two-year action research performed in the second study. Interviews and the following analysis utilized a critical incident technique.

As already mentioned, the institutional theory became the dominating thread of literature and theory research. Already during the second study, the focus moved to the concepts of institutional logics and agency in institutional theory. The aim was to understand how institutional logics control individuals’ and groups’ responses, but also how they still possess the freedom to choose and interpret the logics. During the third study, the focus narrowed further to research a bottom-up institutional change. This work led to a model for the bottom-up agency in driving institutional change.
Figure 16. The research procedure following the systematic combining approach.
5. First study: Organizational impacts of agile development

The objective of the first study was to determine how implementing agile development methods in product development units affect the rest of the organization and whether the team-based organization model can be employed to further advance the agility outcomes. The contribution to the overall research was to obtain greater understanding regarding the original challenge of scaling agility from product development and determine the theoretical feasibility of the proposed team-based organization model. The empirical test of the model is performed in the second study. First, this chapter presents a summary of the backgrounds of the selected case study. Next, the research questions and methods are presented, including the introduction to the case under study and the processes for data gathering and analysis. Following this, the results from the first study are discussed. The chapter closes with further discussion and consideration for the direction of the next study.

5.1 Introduction

The challenge of the accelerating speed of change is not unique to the product development function. The entire working environment where, for example, multiple products need to be quickly introduced in complicated customer settings is so complex that it is difficult to be managed as parts. All different views need to be considered simultaneously. Furthermore, the entire ecosystem is vulnerable to ever faster changes. Conventional organizational structure models relying on the power hierarchy, centralized decision-making, and static process guidelines seem to be too slow and unresponsive for this changing environment. This is easy to understand, as the conventional models were designed to protect an organization against changes, or at best to manage the change in a centrally controlled manner. Today, however, changes are continuous, and adaptation to them needs to be close to real time.

We need an alternative model for organizational structure, and we can start by examining how the organization creates value. Ward and Sobek (2014) differentiate operational and development value streams. Operational value streams flow from suppliers through manufacturing into the customer’s hands.
The role of the development value stream is to create these operational value streams. The amount and speed of change comprise the primary triggers for the need and rise of agile development methods. The limitation is that the adaptations of agile methods focus heavily on the product development function alone. At best, agile development methods concern improvement to the entire development value stream. Even this is not sufficient, however. To optimize the development value stream, we need to consider sensing the market or technology opportunity all the way to optimizing the operational value stream until the product is delivered to the customer. Optimizing product development is not simply about optimizing the creation of great products; they need to be the right ones at the right time, and they need to enable an effective operational value stream. This challenge is shared across the company and even across the company boundary.

Furthermore, it is well-documented that a development organization moving to agile development creates conflicts in an existing organization (see section 2.5). This hinders harnessing the benefits of agile development. The more intense the development function transition is, the deeper the cultural conflicts between the functions become. As an example, Arell et al. (2012, pp. 1-2) summarize that enterprises implementing agile methods in product development frequently face two types of problems:

- Supporting business areas such as governance or HR have significant problems in dealing with agile software development teams because these areas are often built around other, often conflicting, management paradigms.

- Business units are often unable to react to the increased speed demands and fail to turn the fast development cycles into realized business value and consequent sustainable competitive advantage.

These problems address the centralized support functions and functions related to the operational value stream, respectively. These remain outside the scope of the development value stream on which the agile development methods focus.

As such, this raises the question of what could be done. The entire organization is facing the same challenges to which agile development methods have successfully answered regarding the development value stream. Aligned with agile development’s focus on self-organizing teams, Mohrman et al. (1995) propose an organizational structure for knowledge work-oriented organizations, in which the basic unit of organizing is the cross-functional team. The three main arguments for this are (Mohrman, et al., 1995, pp. 7-8) as follows:

- Value flows across many functions.
- Increased speed requirement insists on more parallel work.
- Innovation is enforced with multiple perspectives.

All these arguments are heavily aligned with the argumentation behind agile development methods. In a team-based organization, the teams are formed by
representatives of multiple functions. By having them work in teams and not in their respective functions, we can expect a better answer to the flow and parallel work. This aligns with agile development in which a team works in parallel to analyze, design, implement, and test. This makes it interesting to study if the team-based organization model is feasible in scaling agile thinking to the entire organization.

5.2 Research questions

The first study works as a pre-study for the upcoming research. It examines the implications for the rest of the organization when the product development function introduces agile development methods. Earlier research has demonstrated that organizations are facing challenges in scaling agile development, as discussed in section 2.5. The first objective is to study these implications specifically in the case organization. The second objective is to gain confidence regarding the team-based organization model’s feasibility for aligning the organization to better address the challenges and possible conflicts. Based on the preliminary knowledge, it was decided to test only the team-based organization approach and not to conduct more comprehensive and open analysis regarding other possible solutions. This decision was based on the idea that people lacked sufficient information about the challenges, making it difficult to analyze the complex situation. Therefore, the research questions are as follows:

RQ1.1. What kinds of organizational impacts are identified after adapting agile development methods in product development function?

RQ1.2. Is the team-based organization model an option to overcome the identified controversial impacts?

The two research questions are considered together. The first question aims at proving the existence and pin-pointing the details of an organizational challenge in scaling agile thinking in the case organization. The second research question digs into details for testing the theoretical feasibility of the team-based organization model as a possible solution to the challenges in scaling agile thinking outside product development.

5.3 Research methods

5.3.1 Case: One operative unit in a corporation

The case company employs 51 people organized into four functions: product development, product management, production, and business development. The company is part of a corporation with 180,000 employees. In the larger corporate picture, the case company is responsible for developing and
producing the products for the markets. Individual country organizations bear marketing and sales responsibilities. The channel management differs slightly from country to country, but the dominant channel is through partners. This organizational structure creates a base for a long and distributed customer chain (Figure 17). This also implicates that the case organization itself lacks formal authority over the organizations at the customer boundary or their processes.

Figure 17. Case definition for the first study.

The company possesses a long history with agile development (Figure 18). The company began experimenting with agile development methods—namely Scrum—as early as 2007. The actual systematic transition began in 2008 when the author joined the organization with the goal of introducing agile methods at large. The transition started with two software teams, which later merged into one six-member team. The next year, another team—the hardware development team—joined in following the Scrum process. In the same year, the formal product development process documentation was also updated to follow the agile process instead of the former sequential, Stage-Gate™-like process model (Cooper, 2001). The company was audited for ISO9001 certification against the new process description. In 2011, the rest of the product development teams were introduced to agile development, making the entire product development function operate in a similar fashion. Immediately afterwards, all the development was also synchronized to release to the production at the same time three times a year. At that point, the focus shifted from the product development to other functions. In 2013, a first joint meeting with front-office representatives was arranged for planning the product development activities. This practice then continued to follow the release rhythm, and the joint meetings were arranged three times a year. As a result, more people were intensively involved in the process. To formalize the process, the organization adapted practices from the Scaled Agile Framework and defined a three-level hierarchy for the requirement management. One-day internal training was
developed to get everyone acquainted with the model. The journey continued with encouragement for more experimental releases and marketing. For this, the lean startup approach (Ries, 2011) was introduced.

![Figure 18. Agile journey of the case organization.](image)

### 5.3.2 Data collection

The primary data collection method comprised individual and focus group interviews. A total of five individual interviews were conducted, each lasting 45–90 minutes. The interviewees’ roles included product owner, product manager, business development manager, and general management. In addition, a focus group interview was conducted with five representatives from the front offices in different countries. Table 20 presents the length of individual interview events:

<table>
<thead>
<tr>
<th>Interview #</th>
<th>Time</th>
<th>Words in transcript</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1 hour 31 minutes</td>
<td>7,042</td>
</tr>
<tr>
<td>2</td>
<td>1 hour 16 minutes</td>
<td>5,141</td>
</tr>
<tr>
<td>3</td>
<td>1 hour 19 minutes</td>
<td>6,581</td>
</tr>
<tr>
<td>4</td>
<td>1 hour 15 minutes</td>
<td>8,160</td>
</tr>
<tr>
<td>5</td>
<td>45 minutes</td>
<td>4,288</td>
</tr>
<tr>
<td>Focus Group</td>
<td>50 minutes</td>
<td>5,597</td>
</tr>
</tbody>
</table>

Interviews were conducted using a stimulated recall interview technique. The interview was divided into three parts. During the first part, an interviewee was asked to describe the company’s value stream. This was recorded in audio as well as in a drawing. The drawing consisted of activities, technologies, and persons with arrows illustrating interactions between them. The interviewees were also specifically asked to indicate phases in the flow where they themselves were active and other people possessed a significant influence.

The second part of the interview focused on the company’s agile development transition. The visual timeline of the case company’s agile transition was employed to help interviewees recall the events. This was expected to be challenging, as the time span is approximately eight years. This part of the interview revealed how the transition had progressed involving different parts of the organization. Interviewees were also encouraged to remember stages where they should have involved some other people than what they did at the
time. They were also asked about the difficulties encountered during the transition and actions used to address them. In case the interviewee struggled to understand what kind of information is relevant, a list of common challenges was presented.

During the final portion of the interview, a cross-functional team-based organizational structure was presented. To begin this part of the interview, a brief introduction was given to an interviewee. This part of the interview focused on determining how the proposed model could have helped in the challenges identified in the agile transition, as well as what kind of risks and challenges this manner of organizing would impose.

After the initial interview data was available, the interview instrument was also updated. Changes were not significant, but, for example, the agile transition model was updated with some insights, questions were slightly changed, and in the last three interviews, the team-based organization model was explained using real information from the case organization rather than the model from other companies. In the final interview, the presented model was based on the case organization itself. The already captured model was confirmed to be aligned with interviewees’ personal conception, but some additions were also captured, and a few concepts were challenged. The value stream model was adapted with the new information.

The interview was conducted using an open-ended interview instrument (Appendix 1). The interview instrument included questions concerning the key areas and sub-questions to address specific issues. The instrument was designed to ensure a list of topics is covered but also for it to be flexible enough to allow the participant to lead the interaction (King, et al., 2019). The author guided the discussion to cover both the interviewee’s own experience and how the interviewee observed others to behave. However, the focus was on an interviewee’s personal experience.

The focus group interview lasted 50 minutes. It followed the structure of individual interviews to some degree. The focus group interview instrument is presented in Appendix 2. To begin the session, participants were asked to fill a short questionnaire. The questionnaire collected basic data, such as whether the person knew he or she was a part of a group of people identified as representatives of stakeholders (later called stakeholder network) and how many years he or she had been working with this value stream. The aim was to get everyone to focus on the topic, and the exercise worked as a warm-up. The stakeholder network consisted of people from various functions in front-office organizations, such as sales, marketing, and customer support. During the first actual part of the focus group session, the participants collectively created a value stream model on the whiteboard. This was the same activity performed by the individuals in their interviews. The second part discussed the possible challenges or inefficiencies respondents identified regarding the value streams. The final part of the session shifted the focus to the future. Similar to individual interviews, the idea of team-based organization model was briefly introduced and then followed with discussion regarding success factors and risks in the approach. The focus group interview was recorded and transcribed. To help
identify responders, a colleague was asked to make notes about the persons providing the information during the group interview.

In addition to the interviews, the formal organization chart was recorded as additional data for use as a reference during the analysis.

### 5.3.3 Data analysis

To begin the data analysis, all transcripts from the individual interviews and the focus group session were entered into ATLAS.ti qualitative analysis software. ATLAS.ti is used for coding qualitative data. The software was utilized to code the interview transcripts, and thus provides full traceability from the individual quotes in interview transcripts to the codes. The software was also employed to structure and restructure the coded data as the analysis proceeded. The process was iterative, but three distinctive stages are identifiable: pre-analysis stage, stage I, and stage II. Figure 19 illustrates the analysis process at a high level, and a more detailed description of each stage of analysis follows.

#### Table 21. Initial code groups and codes in them.

<table>
<thead>
<tr>
<th>Code Group</th>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Value-creating organization</td>
<td>Roles involved in value creation</td>
<td>What are the roles (people, groups of people, and technology) involved in the value stream?</td>
</tr>
<tr>
<td></td>
<td>Interactions involved in value creation</td>
<td>What are the interaction mechanisms in the value stream?</td>
</tr>
<tr>
<td>Agile development</td>
<td>Organizational implications</td>
<td>What kind of implications has it caused when the development function starts to implement agile development methods?</td>
</tr>
<tr>
<td></td>
<td>Organizational change process</td>
<td>How has the change, which agile development triggers, been managed and progressed?</td>
</tr>
<tr>
<td>Team-based organization</td>
<td>Solution mechanisms</td>
<td>In what issues is the team-based organization model expected to help? How?</td>
</tr>
<tr>
<td></td>
<td>Challenges</td>
<td>What are the challenges in the change to team-based organizational design?</td>
</tr>
<tr>
<td></td>
<td>Success enablers</td>
<td>What are the prerequisites for team-based organization to succeed?</td>
</tr>
</tbody>
</table>
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Figure 19. The data analysis process.
While the interviews were still being conducted, earlier interviews were already analyzed. During this pre-analysis stage, the author identified interesting statements in transcripts and marked them with a code label. In the beginning of the analysis, a set of code groups and the codes within them were chosen as a starting point. These are presented in Table 21. These initial codes were used when feasible, but if there was any doubt regarding a code’s appropriateness, then open coding was used. Quite early in the process, it became evident that the predefined codes did not fit the actual data. The quotes assigned to predefined codes quickly became the minority. Recognizing this and abandoning the pre-defined codes, and being respectful to the data, was important to avoid forcing the data to fit with the pre-defined code structure and causing bias. However, this decision caused the analysis process to go backwards and take a new look from a wider perspective. As the analysis continued, the codes were continuously refined based on a growing understanding by creating, renaming, and combining. During the analysis, it was recognized that the case organization went through a series of three stages of change, or waves of transition: Development (development teams working effectively), Stakeholders (business decisions driving the prioritization of development), and Organization. In addition, the role of change management was strongly present. At this stage, 230 quotes were gathered and labeled with 56 codes. The codes were further divided into four code groups, including the above-mentioned three change waves and the change management. Table 22 provides information about the codes in each code group and the number of quotations assigned with this code group.

When the code groups and codes were used to form an analytical framework, the “conceptual gap” between code groups and codes felt too wide. In order to ease this, codes were organized into a three-level code hierarchy as an additional analysis stage. Again, this represented an iterative process, as some codes were still created based on only a few quotations, or sometimes just one. In these cases, the quotations were merged with some other code and that code was renamed with a more abstract name. An example would be the number of detailed benefits different interviewees named from agile methods, such as “knowledge bottle-necks” and “team coordination” At the detailed level, these were mentioned only once, but during the analysis, they were grouped under the code “self-organizing teams break knowledge silos.”
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Table 22. The principle of linkage from individual quotations to code groups during Stage I analysis.

<table>
<thead>
<tr>
<th>Example quotation</th>
<th>Quotations (N=230)</th>
<th>Most grounded codes</th>
<th>Codes in group (N=56)</th>
<th>Code group</th>
</tr>
</thead>
<tbody>
<tr>
<td>[...]being able to hold the promise, it increased significantly the trustworthiness and satisfaction. The unnecessary, negative communication disappeared.]</td>
<td>22</td>
<td>Transparency</td>
<td>7</td>
<td>Development (teams working effectively)</td>
</tr>
<tr>
<td>[...]end-result is that we get better information from the customers, what is really needed – and we can prioritize. Compared to earlier, the person yelling the loudest no-longer gets his/her idea through.]</td>
<td>115</td>
<td>Alignment</td>
<td>19</td>
<td>Stakeholders (business decisions driving prioritization)</td>
</tr>
<tr>
<td>[something that earlier was completely missing…. Sales was never involved. Now, Sales is continuously involved in the process. I know ten-times better where we are going regarding f.ex. product cost.]</td>
<td>82</td>
<td>Requires: team’s scope, responsibility Work is parallel, not serial Complex/distributed customer chain</td>
<td>25</td>
<td>Organization (company-wide learning)</td>
</tr>
<tr>
<td>[...]later, I realized that change needs to be introduced to those… who are more amenable to the suggestion, help them, and then even the objectors join, if they ever will.]</td>
<td>11</td>
<td>Follow the change energy Use of known frameworks</td>
<td>5</td>
<td>Change management</td>
</tr>
</tbody>
</table>

With the sub-categories, it was possible to conduct the analysis at different levels of abstraction. Table 23 presents an example of forming the final code categories and their sub-categories. The final categorization possessed four categories, and they had combined 14 sub-categories within them. A full presentation of categories is available in Appendix 4. The number of codes in each sub-category is presented in the Appendix. This offers some understanding regarding the density of the findings in the interview data. However, this is not to be understood as a valid quantitative measure for the relative importance of each finding.
Table 23. An example of forming a code category from individual quotations.

<table>
<thead>
<tr>
<th>Example quote</th>
<th>Code</th>
<th>Sub-category</th>
<th>Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>…we get to start the implementation earlier, and I believe that time from the beginning to the moment it is done is significantly shorter than earlier.</td>
<td>Faster incremental and focused delivery</td>
<td></td>
<td>Local benefits</td>
</tr>
<tr>
<td>…almost everyone in the team can work on anything, making Sprint planning easier</td>
<td>Self-organizing teams break knowledge silos</td>
<td></td>
<td></td>
</tr>
<tr>
<td>…the cadence, and the release rhythm, eliminated quite a lot, I would estimate 70–80% of unnecessary inquiries [from stakeholders].</td>
<td>Creates organizational cadence</td>
<td></td>
<td>Team-level change</td>
</tr>
<tr>
<td>…transparency toward the management, the decisions that are made, the investment decisions—management is involved in all that. Everything is done under their eyes.</td>
<td>Transparency</td>
<td>Changes at organizational boundary</td>
<td></td>
</tr>
<tr>
<td>…we were able to keep the commitments on releases. We were, of course, called being slow, but when we kept the commitments, it increased the trust and satisfaction.</td>
<td>Trustworthy, predictable teams</td>
<td></td>
<td></td>
</tr>
<tr>
<td>…working together and agreeing on things in a team, between the teams, and especially co-working between the teams—there is definitely room for improvement.</td>
<td>Collaboration between teams</td>
<td>New challenges discovered</td>
<td></td>
</tr>
</tbody>
</table>

During the stage I analysis, in parallel with the analysis of the interview transcripts, the value stream illustrations were analyzed. The data from all individual illustrations was put together to form a consolidated model. The illustration from an individual interview was drawn as a layer in an Adobe Illustrator\(^4\) drawing. The transcripts from the interviews were used to fill in the gaps in illustrations. The individual diagrams were modified to some degree to make the diagrams comparable. The process of combining the individual illustrations into the consolidated illustration of value stream is presented in Figure 20. This layered approach made it possible to identify areas where the understanding was clearly shared and aligned, but also individual differences such as emphasis on certain areas or even a complete lack of knowledge on other areas. Figure 22 (on page 105) presents the consolidated value stream illustration.

\(^4\) Adobe Illustrator is a drawing software based on vector graphics by Adobe Systems.
While the analytical frameworks were used throughout the analysis, the final one was created in the end using the code categories. In the Stage I, cause-and-effect diagrams were used to gain understanding of the data, but during Stage II, the analytical framework took more of a form of a concept map with some causal links using the network feature of ATLAS.ti software. The value stream model was used as supplement data for better understanding. The construction of the concept map was supported by writing a narrative. The next section presents the key findings from this analysis.

5.4 Results

This study illustrates that the team-based organization model is feasible for experimentation of scaling agile thinking. It further indicates that the experiment itself, while recognized as challenging, can be started with only a little up-front planning and letting the experiment lead the change management. Table 24 summarizes the key findings.
Table 24. Summary of the key findings.

<table>
<thead>
<tr>
<th>Finding</th>
<th>Description</th>
</tr>
</thead>
</table>
| Agile development initiated a larger organizational change journey | Three waves in the transformation  
The need to continue the journey is identified (problems outside the core group, i.e. launch, sales) |
| Feasibility of the team-based organization model | “Makes sense”  
Seen as giving structure to complex parallel work  
Challenges seen as well, such as management and organizational support, initial setup, and the time needed for the practices |
| Enabler: Understanding of the value stream | Complex customer chain  
Parallel, cross-functional, and cyclic value stream  
Not following formal organizational structure |
| Enabler: Existence of the informal organizational structure | Core group not following the formal organizational structure  
Formed with the help of a social network |
| Enabler: The role of change management | Internal training  
Known methods and frameworks  
Going with change energy  
Slow |

The case organization was identified as going through a transformation in which three distinctive waves could be identified. Furthermore, the latest wave resulted in identifying certain challenges as the transformation started to involve people outside the immediate product development and beyond the case organization as well. This co-working lacked concrete practices. The team-based organization model was evaluated to be a feasible solution to help in these challenges. Overall, three organizational enablers surfaced from the data. The enablers had affected the case organization’s ability to go through the aforementioned waves. Figure 21 illustrates how different findings are linked together, and the rest of the chapter presents a more in-depth description of each finding:
5.4.1 **Key findings: Feasibility of the team-based organization**

*Agile development initiated a larger organizational change journey*

The case organization first began agile development in the development function in 2008. Over the years, a larger and larger portion of the organization was affected. Based on the interview data, three distinct phases are identified: inside the development function, involving people responsible for the longer-term requirement management (portfolio and roadmap management), and implications for the organization as a whole.

Initially, the case organization began implementing agile development methods in a single team inside product development function. The main initial changes involved moving from narrow-area experts to a team of people with broader knowledge regarding the system and investment in the test automation. The consequence of moving to the team-based model included limiting the number of initiatives the development unit was working on simultaneously. When introducing agile development, the development unit had dozens of ongoing projects. With agile development, this was limited to just a few. Self-organizing teams, highly central actors of agile development, were experienced to help break down the knowledge silos. In the past, there had been incidents when a major release was delayed by the absence of a single person with his unique knowledge on a certain area.
Knowledge silos were one of the biggest hurdles in the past, and there is one specific episode related to that. In a five-member team, a person had to be absent for a month. Our release got delayed for exactly that month since no one was able to start the job.

Head of Product Management

Agile development introduced changes to how work was planned. Specifically, the planning was changed to the rolling wave method, and the release schedule was set to a fixed three times a year. These changes enabled the product development function to work in a predictable schedule. Agile development can be planned for a fixed schedule by continuously adjusting the scope of the work.

All in all, agile development was experienced to improve product development transparency. Having transparency and fixed release dates were further found to build trust between the product development unit and the rest of the organization. Additionally, the changes in requirements were more easily managed due to the flexibility of agile planning. However, the fixed rhythm of product development and limiting how much was simultaneously being processed revealed a need to focus more systematically on the prioritization.

Eventually, the business-value-driven prioritization practices evolved into the adaptation of Scaled Agile Framework practices and the usage of the three-level hierarchy for requirement management (portfolio, roadmap, and development). This phase can be considered a second wave in the transformation: portfolio and roadmap management. The company was improving in deciding the right things to be built.

Deciding what are the features and how do we prioritize them became a problem quite soon after the agile development methods were introduced.

Head of Product Management

Compared to the old method, it is no longer the person who is the loudest who gets his/her opinion through if that is not the most important thing in the big picture.

Product Owner

In this phase, once again, new challenges surfaced. One of the main challenges identified concerned the lack of involvement of people at the front-line of customer contacts, namely with colleagues in marketing and sales. Their input was seen as important for both requirement refinement and obtaining customer feedback once the requirements were implemented. While agile development provided the practices and techniques for setting the priorities for the requirements, this was commonly found to be a difficult job in practice.

This phase also introduced people outside the case company into the process. The focus group interview provided a different view regarding the implications of agile development. They do not cooperate so closely with agile teams, but their work still both affects and is significantly affected by the product
First study: Organizational impacts of agile development

development. The focus group listed several challenges with agile development, which are summarized in Table 25:

Table 25. Challenges with agile development identified by the focus group.

<table>
<thead>
<tr>
<th>Challenge</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>&quot;Ideas&quot; as demands</td>
<td>A product or feature idea is presented as a mandatory demand without consideration of relative priority of this new backlog entry.</td>
</tr>
<tr>
<td>Lack of business case (or quality)</td>
<td>Prioritization is performed without formal business case formulation, or the business case analysis is performed purely for the sake of exercise.</td>
</tr>
<tr>
<td>[Limited] Product development resources</td>
<td>The narrow bandwidth in development makes planning, especially longer-term high-demand planning, difficult.</td>
</tr>
<tr>
<td>[Limited] Front-office resources</td>
<td>Front offices responsible for market knowledge, as well as data for prioritization, are also constrained by available persons and time. Homework for prioritization is limited.</td>
</tr>
<tr>
<td>Details of an idea</td>
<td>Requirements are presented as ideas only on a high level, leaving too much room for interpretation.</td>
</tr>
<tr>
<td>Changes in schedule</td>
<td>Continuous changes in the longer-term plan, along with changes in scope due the fixed release time-box, makes communication and re-planning laborious.</td>
</tr>
<tr>
<td>Fixed release dates</td>
<td>If a feature misses the original release date even by a few weeks, one has to wait for the full cycle.</td>
</tr>
<tr>
<td>Different segments [in individual countries]</td>
<td>Front offices are focused, to some degree, on different market segments. All segments are targeted with a single solution, and this makes comparison of competing product ideas difficult.</td>
</tr>
<tr>
<td>Market knowledge (currently low and narrow)</td>
<td>Current level of (real) market knowledge in the group is low or narrowly focused at best. More investment in market studies would make the portfolio and roadmap more reality based.</td>
</tr>
</tbody>
</table>

The common themes here include the requirement definition and the prioritization. The practices from the Scaled Agile Framework and face-to-face meetings brought visibility and transparency to the prioritization, but it was still experienced to be less than optimal. There had been incidents when someone’s individual idea was presented as a mandatory requirement. Supporting this, everyone agreed that the business cases represented a weakness in practices, and the knowledge of the market was low and narrowly known. Business case definitions were either missing or their quality was questionable. The definition of the requirement was mentioned to be broad and abstract and did not provide a sufficiently detailed description of the requirement. Since countries possess a long individual history with the products and the competition, the focused segment also varies from country to country, making finding common rules for prioritization more challenging. For the case organization the situation was challenging due to the complex and distributed customer chain (Figure 17 on page 88). In addition, customer communication about the new releases, and especially releasing small increments (when feedback about the direction and prioritization would have been needed), was experienced to be inefficient. Communication had challenges internally as well. There had been incidents, especially within larger product development initiatives, when other functions
had been surprised. For example, the manufacturing price could have differed from the expected one, or at least, the price impact had not been analyzed during the development.

To tackle these challenges, some cross-functional meeting practices were introduced. Furthermore, a so-called stakeholder network was named from representatives of country organizations to capture the customer chain. These initiatives can be seen as moving into the third wave of the transformation. An end-to-end value stream is beginning to be organized based on similar principles and adapting for continuous refinement of the company’s direction. It is clear that agile development had introduced company-wide implications.

I see that the next step is extending the [team-based organization] model, extending outside our own organization. That is the next step we need to take.

Business Development

Feasibility of the team-based organization model

The organization-wide learning led to a realization that the value stream optimization requires a parallel and iterative work rather than a sequential, linear work. This means that particularly intensive communication and collaboration are needed between cross-functional groups. From the value stream modeling, it was possible to observe that the members of the case organization alone cannot deliver the end-to-end value. The complex and distributed customer chain (customer interface) creates a need for a rather complex and complicated network of people to work together. When prompted with an idea of the team-based organization around these groups, all interviewees (individual and members of focus group) admitted that it would “make sense” to organize in that fashion. All the identified benefits are summarized in Table 26:

Table 26. Benefits of team-based organizational structure.

<table>
<thead>
<tr>
<th>Benefit</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Makes sense [in the context of work to be done]</td>
<td>Informal cross-divisional groups already exist for many activities.</td>
</tr>
<tr>
<td>[Provides] Focus</td>
<td>Since many people are actively involved in several activities, it is typical to have challenges in focusing at, for example, meetings.</td>
</tr>
<tr>
<td>[Enables] Parallel work</td>
<td>Many activities are flowing through the system at the same time (in different stages), and contributions to these are needed in parallel from many organizational entities. Clearly defined cross-functional and cross-organizational teams can enable this.</td>
</tr>
<tr>
<td>Gives structure to responsibilities</td>
<td>The end-to-end value stream is crossing organizational boundaries. Having clear role definitions stating the responsibilities for each role provides clarity.</td>
</tr>
</tbody>
</table>

As previously discussed, the company had already identified some challenges in the current manner of working. The identified benefits from the team-based
organization model seem to be a positive fit. The organization already possessed some elements, such as the stakeholder network. However, confusion was identified regarding each entity’s responsibilities and even about what the organization in general was expected to work on at any given moment. Enabling focused work, even while working in parallel on numerous matters and in parallel in numerous entities, seemed like what needs to be solved next.

If we consider the organization and teams, all the things are getting taken care off—the things that are the important ones and require taking care of.

Head of Product Management

The benefits were not seen as free. Risks, prerequisites, and success factors were also identified during the interviews. Table 27 summarizes the issues:

**Table 27.** Identified issues in the team-based organization model.

<table>
<thead>
<tr>
<th>Issue</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Management and organizational support</td>
<td>It was seen as a mandatory requirement that the management understands the model and is willing to support it.</td>
</tr>
<tr>
<td>Training</td>
<td>Training, to help to get started, was identified as important to avoid starting from scratch.</td>
</tr>
<tr>
<td>Understanding the reasons</td>
<td>From the change management perspective, it is important that sufficient time is invested to explain to everyone the reasons for the model of organizing.</td>
</tr>
<tr>
<td>Defined focused teams</td>
<td>Teams need a clear, focused scope and responsibilities to avoid overly open discussion.</td>
</tr>
<tr>
<td>Goals/direction for the teams</td>
<td>Teams need to have a goal/direction or roadmap (purpose) for their existence to drive the operation.</td>
</tr>
<tr>
<td>Time for the team meetings, meeting practices</td>
<td>Belonging to possibly multiple teams was identified to cause a lot of team meetings. The time consumption of the meetings needs to be solved and justified.</td>
</tr>
<tr>
<td>How teams organize, facilitator role</td>
<td>For the team to operate, it needs some housework; the importance of facilitator’s role was thus identified.</td>
</tr>
</tbody>
</table>

The need for management and organizational support was mentioned numerous times. It was considered a major risk that, for example, goals set by the organization would be directed toward rewarding different behavior than what the team-based organization model was pursuing. Training for the approach was seen as mandatory in the beginning. Training could be seen as an answer to other change management challenges as well; for instance, it helps communicate the reason for the new model. For teams to get started and to be able to work effectively, a number of enabling conditions were identified. The teams should be clearly defined, working on a focused topic and scope. Teams should also possess a clear goal and direction, further helping them remain focused and deliver results quickly. The idea of possibly being involved in several teams, each with their own meetings, raised concerns regarding the required time. The return on time invested should be evaluated all the time.
Focused teams and structured meeting practices also help the issue. As the model features numerous requirements for teamwork, the role of a facilitator was identified as key.

An interesting point is that many of these issues are exactly the ones that the practices, such as in Holacracy, seek to tackle while still enabling self-organization.

**Enabler: Understanding of the value stream**

During the first part of the interview, the interviewees were asked to describe and illustrate how they saw the value creation flowing through the organization. Each interviewee was able to describe the entire value stream at a high level, but a clear separate area could be identified that was understood in greater detail by each individual. The big picture, however, was identical in all illustrations. Figure 22 illustrates the consolidated value stream model. The illustration presents an informal operative structure in the case organization.

The value stream is typical, but quite complex. The customer chain from the case organization is complicated and distributed, making customer engagement challenging. Interaction in the actual end-customer interface is performed by such stakeholders in the organization who are not working directly with the case company. This was seen as inefficiencies in, or as a complete lack of, key practices such as access to the feedback, real market information for prioritization, and launch process management.

In our case, the “customer” is the front-offices, who in turn distribute the information to their partners and direct customers.

Product Manager

While some sequential characteristics can be identified in Figure 22, the work was explained as happening simultaneously in all areas of the value stream. Furthermore, when interviewees were asked to place themselves in the illustration, linked to activities or artifacts they were mostly involved with, many of them placed themselves on most of the items on the value stream. The focus group created a highly similar value stream model to one created from the individual interviews in the case organization. The focus group also revealed that people not just from different functions, but from completely different formal organizations, work continuously together throughout the value stream. In general, all major activities involved people from numerous different organizational functions. It further became clear that the different activities were performed in parallel involving people cross-functionally and that the value stream includes several overlapping cyclic loops. The early experimenting with cross-functional teams was already seen as addressing this:
Because now, we have all the people present needed for decision making or influencing. They are in the team.

Business Development

Due to the nature of work and how it is executed, it is safe to conclude that operations were not guided by the formal organizational structure. The organizational aspects are discussed further in the next enabler. The fact that all interviewees could explain how value is created, as well as how and why people work together, worked as an enabler for the transformation. The introduced models and methods were understood to fit the actual way of working.
Figure 22. Case organization as a value stream
As the organization progressed in the change journey, it sought to harness the complicated customer chain and invited a so-called stakeholder network to work with. The composition of this network was, to a significant degree, influenced by social networks within the larger corporation. At the time of the study, the formal, hierarchy-based connections between some people in the network went all the way through the company’s CEO. Figure 23 presents the partial organization chart. The checkered boxes represent the people involved in the stakeholder network.

The contradiction between the formal organizational hierarchical structure and how the work-to-be-done is conducted in practice is evident. The primary mechanism for the case organization to interact with the stakeholder network involves the joint planning meeting, a two-day face-to-face meeting between case organization members and stakeholders. The Scaled Agile Framework provides the structure for the event. The fact that people who were as distant as possible in the organizational hierarchy kept coming to the joint planning meetings offers evidence of another parallel organizational structure at play. This structure is closer to the value stream and what type of roles need to interact and how. It is not a predetermined power hierarchy. To form this informal organization, the case organization relied heavily on previously established social networks.

The case organization had created internal training material and programs for different steps in its change journey. Multiple interviewees mentioned this as one of the key success factors. Another key success factor considered utilizing
known frameworks and methods. For the development unit, this included Scrum and practices from Extreme Programming. For activities regarding business requirements, the inspiration came from the Scaled Agile Framework. Furthermore, the idea of experimenting with the team-based organization model turned the company’s eyes to Holacracy. For all of this, the company developed its own internal training material in order to pin-point the environment and make it more readily digestible, especially for people who were less interested in the general theory behind it, but who needed the knowledge from the perspective of their own work.

Along the journey, the people in formal or informal roles for leading the transition claimed that the more effective approach to change involves following the energy and the flow of the change. It did not make much difference if energy was spent on areas of strongest resistance. A far better return on time invested was achievable by working with people who were already prepared to experiment with the new ideas, or who were at least open minded enough to learn more and reach the point of readiness. Additionally, there was not a pre-planned roadmap of change steps; rather, the next actions were chosen based on issues surfacing or the learning that happened during the previous step.

In the beginning, time and energy were invested in arguing and speculating with people who resisted the most. At least I personally thought in the beginning that they are the ones that we need to win over.

Product Manager

All in all, the change was experienced to be slow. It took eight years to go from the first introduction to agile development methods to the beginning of involving the end-to-end organization. When prompted for ideas on how the change could be accelerated, few alternatives surfaced.

When discussing the ongoing or future change toward a larger team-based organization, the issues that arose followed similar lines. One matter that clearly differed from the past concerned the role of upper management and organizational support. Until this point, the scope of transition had been managed by the people fully involved themselves, and therefore, everything had remained in the sphere of their influence, in a sense “holding all the strings from the inside.” Going forward, the transition would cross the boundary of the case organization and involve people whose responsibilities reach beyond simply the case organization.

5.5 Discussion

A retrospective case study over the past eight years was conducted to gain understanding regarding the organizational changes triggered by the introduction of agile development methods. The two main objectives consisted of understanding the implications of agile development in the case organization and the theoretical feasibility of the team-based organization model as a vehicle to scale agile thinking at the organizational level.
Impacts of adapting agile development at the organizational level

The main finding is that agile product development initiates a larger change journey in the case organization, answering RQ1.1. It further seems that the change proceeds in “waves,” always affecting a larger group of people in the organization. In the case organization, the agile methods were first utilized in the product development unit alone. Later, product management was affected when the need for a more systematic roadmap and portfolio management became visible. The third wave began influencing the entire organization. The fact that all interviewees (including the focus group interview) could describe the value stream through the company in a highly similar manner worked as an enabler for this step in the transformation. It can be argued that, while not evident from the data, the history with agile development and working closely together helped create this shared understanding of how the organization works.

Team-based organization model potentially addresses the controversial impacts

A semi-formal social network was employed to create the actual operating network of people rather than the hierarchy presented by the formal organization chart. Additionally, different cross-functional groups had evolved without being formally enforced. Therefore, in this case, the team-based organization model seemed to be the natural continuum from agile development, answering RQ1.2 regarding the team-based organization model’s feasibility as an option for addressing the aforementioned implications. Going in this direction more systematically was seen as potentially providing numerous benefits, such as increased focus and formally supporting parallel cross-functional work. Implementing this model at a larger scale, however, potentially imposed various risks and challenges, such as obtaining management support and coming up with a sufficiently clear structure and definitions of responsibilities for the teams. Based on the interview data, however, it seemed to be a natural continuum for the organizational change triggered by agile development. The identified risks for implementation were largely considered in documented team-based organization models.

5.5.1 Matching and redirecting

It has been proposed that scaling of agile development occurs in four areas: product, platform, vertical, and horizontal (scaling quadrants in section 2.4). The case company seemed to be progressing from one area to next, as illustrated in Figure 24. The case organization began introducing agile development from one team (product), scaled it fully to the product development (platform, illustrated as Wave 1), and then began introducing it horizontally to other functions through portfolio and roadmap management processes (horizontal, illustrated as Wave 2) and was now attempting to determine the way forward (vertical, illustrated as Wave 3).
Many of the activities required by the entire end-to-end value stream were suffering from similar challenges that agile development attempts to tackle in the product development domain. For example, managing change in these other activities was not handled in such a controlled manner as within the product development with its agile planning. Furthermore, there was little transparency to that work and, therefore, to the consequences of such changes.

Based on the above reasoning, we can say that this study’s findings match and strengthen the existing theory regarding the need to scale agile thinking in an organization. Changes in product development cause pressure to change in other functions. Inability to implement these changes in the organization limit the overall benefits of agile development.

This study provided considerable evidence for the team-based organization model as a vehicle for exploring the next step in the organizational transformation. The study identified the lightweight, experimental approach to change as an enabler to transformation so far in the case organization. This confirms the feasibility of beginning the change by exploring without much up-front planning for the change. In that sense, the study provided justifications and background information for proceeding with the research by experimenting with the team-based organization model, as well as to continue with the idea of abandoning conventional change models.
6. Second study: Team-based organization model experiment

This chapter presents the execution of and results from the second case study of this research. This second study focuses on the transformation and provides the primary data for the overall research. A more in-depth analysis of the observed phenomenon is presented in the final study, which looks back in retrospective to the timeline of this study. First, however, this second study comprises action research helping the case organization implement the team-based organization model and studying it from the change management and resulting outcome perspectives. To begin, the introduction summarizes the background for this study. The chapter continues by presenting the research design, including the research questions and specific research methods. Next, the narratives for four action research cycles are presented. The chapter ends with the study results and the discussion.

6.1 Introduction

The first study provided evidence that the team-based organization model can offer a potential solution for structuring the organization to better benefit from agile development. The agile development had already previously created a need for further changes in the case organization, such as in the portfolio and roadmap management. Some of the pre-existing practices comprised steps toward the team-based organization model, and it seemed like a natural direction. When asked, all the interviewees evaluated the team-based organization model as a viable approach for further improving the co-working. The company also already had experiences in structuring the work based on informal organization, further easing the introduction.

Team-based organization is a broad term, and it can be implemented in numerous ways in practice. The change management finding in the first study supported the idea of using existing frameworks as a starting point due the standardized practices, terminology, and material available. Holacracy (section 3.3.4) provides guidance from the practical perspective regarding how to organize in a nested team structure. It also provides detailed information concerning practices, such as meeting agendas and decision-making processes.
Holacracy was utilized as the starting point in the experiment. Many of the documented frameworks for team-based organization also provide guidelines for transforming an existing organization (section 3.3.5). They share the idea that practical implementation of the team-based organization model can be started with minimum efforts. This contrasts conventional organizational change models (section 3.2.2). Holacracy also offers guidance for the change process. The guidance is quite straightforward: Holacracy cannot be learned without experimenting. During the first action research cycle, the case organization followed this guidance and began experimenting with the model without much preparation.

This study’s main objective is to gain practical knowledge regarding the team-based organization model. First, we explore how the bottom-up approach to the change can be handled in an emergent manner and how this affects the transformation. Second, we collect empirical evidence from a real case that the team-based organization model can help organizations in the quest for scaling agile thinking from product development to the entire organization.

### 6.2 Research questions

The second study comprises action research of emergent organizational change efforts. The aspect of interest concerns whether a significant change can be initiated without a clear plan at the outset. However, without examining the further steering of the implementation, the research would not offer any insight regarding the feasibility of the addressing transformation in this way. Therefore, the research includes both the start of the initiative and the further steering in the absence of a longer-term plan. The decision to analyze the initial steering was made with the understanding that unfortunate time constraints still remain in the research. If there was more time, the interpretation of the phenomenon might turn out different. We also want to know whether the implemented team-based organization works as a mechanism to accelerate the scaling of agile thinking in an organization, as well as whether the similar benefits achieved in product development can be observed in the rest of the organization. The actual implementation of the model is, of course, expected to mature during the transformation. An equally important objective was to determine how this affects the organization and its performance.

The research questions are as follows:

- **RQ2.1.** How can the bottom-up agency initiate change at the organizational level?
- **RQ2.2.** How is the transformation controlled without the top-down steering?
- **RQ2.3.** What outcomes emerge from a bottom-up change toward a team-based organization?
The first two research questions focus on the transition from the change management perspective. The objective is to determine how the emergent planning of both the actual model and the change-driving activities can be executed in practice. The final research question focuses on the actual outcome. We are interested in the resultant organizational model and how, in practice, it affects the case organization’s operation and performance.

6.3 Research methods

6.3.1 Case: The organization beyond people

This study comprises action research focusing on experimenting with a team-based organization model by adapting the Holacracy framework. For this purpose, we need to define the organization under focus for both the action research and practice. Holacracy describes a governance system for an organization rather than a group of people; it is the organization that is being structured and governed, not the people. Holacracy defines an organization as something that exists beyond the people and that can hold a broader purpose even as the individuals come and go. As defined in the Holacracy Bootstrap webpage (HolacracyOne, 2018), an organization possesses the following features:

- Has a boundary, which defines its scope – a “territory” that it controls and regulates.
- Has an energetic exchange with the outside world across that boundary; it provides something to/for the world and receives something back in exchange.
- Has a purpose it pursues, work to do for that purpose, and resources to deploy.

If it is a legal entity with property (whether physical, monetary, or intellectual) and it performs some activity in the world, then it is likely an organization according to Holacracy’s definition. When Holacracy is deployed to organize a team or a department, or any other group or work, we need to be particularly clear on whether and how we adapt to the criteria above.

In a large corporation, there are several organizations based on this definition. For this study, we employ the value stream identified in the first study (Figure 22 on page 105). This represents the end-to-end value stream as defined by Arell et al. (2012) (see section 2.6) as well as the organization deploying Holacracy. Therefore, this comprises the case for this study (Figure 25).
6.3.2 Overview of the action research co-learning

Table 28 illustrates the four action research cycles in this study, their timing, and the focus of learning during each cycle. The learning centered on setting the organizational structure according to the team-based design principle, but the tools to enforce this evolved over time. The very first cycle focused on the initial structure and first steps with practices, while the second cycle focused on making the use of the new system more systematic and transparent. The third cycle focused on ensuring the method feels like a normal way of doing things, involving members more but also obtaining a guiding coalition to guarantee the change energy. The fourth, and final, research cycle focused on further deepening the model's practices, seeking long-term prioritization for value creation and bringing clarity to responsibilities through the focus on role definitions.

Table 28. Overview of action research cycles.

<table>
<thead>
<tr>
<th>Cycle</th>
<th>Timing</th>
<th>Learning focused on</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>6.10.2016 – 27.2.2017</td>
<td>• Initial team-based structure</td>
</tr>
<tr>
<td>2</td>
<td>27.2.2017 – 19.6.2017</td>
<td>• Complete the team-based structure</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Enforce the process through facilitators</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Focus on metrics (both the process and outcome centric)</td>
</tr>
<tr>
<td>3</td>
<td>19.6.2017 – 17.11.2017</td>
<td>• On-the-job type of mentoring and coaching</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Better use of tools for transparency</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Involve circle members in method development</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Guiding coalition</td>
</tr>
<tr>
<td>4</td>
<td>17.11.2017 – 16.5.2018</td>
<td>• More discipline in making &quot;all&quot; work transparent in tools</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• The concept of value introduced to all circles</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Rules of attendance/absence from circle meetings</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Clarifying the meaning of role definition</td>
</tr>
</tbody>
</table>
Each prior action research cycle drove the focus of the next one, and the detailed approach to the experiment was continuously re-planned. Detailed narratives are provided for each action research cycle.

### 6.3.3 Data collection

Data was collected in various ways and formats. Table 29 provides a summary of the most significant data sources:

**Table 29. Summary of the data used in the study.**

<table>
<thead>
<tr>
<th>Data source</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Work management system</td>
<td>Excel sheets from the beginning of the action research. Information from a web-based Asana tool after it was taken into use.</td>
</tr>
<tr>
<td>Meeting and other internal memos</td>
<td>Internal team-based organization training material. Memos from meetings where team-based organization was discussed. Presentations of team-based organization experiments.</td>
</tr>
<tr>
<td>External coach events</td>
<td>External coach pre-interview material. Workshop material from the external coach sessions on two occasions with four sessions each.</td>
</tr>
<tr>
<td>Reflection events</td>
<td>Participant observations and defined next focus areas from events between the action research cycles.</td>
</tr>
<tr>
<td>Observation notes</td>
<td>Author’s Post-It notes, notepad notes and pictures of flip charts, and whiteboards. Journal writings on author’s personal reflection.</td>
</tr>
</tbody>
</table>

From the beginning of the study, it was decided to record the organization (structure and roles) in a web-based tool called GlassFrog<sup>5</sup>. This provided a natural means for collecting data regarding the evolution and emergence of the structure and role definitions and assignments. The tool offers an API, and a script for recording snapshots over time was implemented for measuring and research purposes. Organization charts were also available from the organization data system. Snapshots of the formal organization were collected several times. Each team (a circle in Holacracy’s terminology) also began recording their work in a memo or a diary. The goal was for projects, next-actions, tension processing, and governance decisions to be recorded. This practice matured over time, and likewise, the tools also evolved over time from Excel sheets to web-based Asana. In this way, the format and quality of this data varied over time, but nevertheless, it remained highly comprehensive.

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<sup>5</sup> A web-based tool for recording the governance of an organization implementing Holacracy ([http://www.glassfrog.com](http://www.glassfrog.com)).
Second study: Team-based organization model experiment

Internal training was implemented from the very beginning. The training material evolved continuously, and snapshots of each session’s material were employed to gain an understanding of how the model developed during the transformation. These became valuable observation data regarding how people thought about the model. The training further included a reflection segment at the end of each session.

The company still retained many of its more conventional meetings. The team-based approach was discussed in these as well, and therefore, the minutes from these meetings were collected as additional data for this study.

The author presented the progress of the experiment to a corporate development program that conducted a teleconference every four weeks and a larger face-to-face meeting bi-annually. The minutes, notes, and presentations from those events also provide material for the research as they present the author’s evolving understanding of the experiment.

On two separate occasions, external coaching engagements provided considerable data as side effects. The material from the total of eight workshops were employed as data for this study, while the workshops provided a focal element in steering the action research.

One of the key data-gathering mechanisms consisted of the reflection and planning workshop for the team-based organization experiment. These were initially held with the anchor circle (the circle that comprises the entire organization) members, but at times, more reflection meetings were added, such as the facilitators’ reflection on the entire research period.

Researcher memos varied from hand-written Post-It notes and notepad notes to more formal journal-type recordings. A great deal of the hand-written material was scanned for future analysis. At any significant milestone, this material was reviewed for any new insights. Insights were then recorded as additional researcher memos.

6.3.4 Data analysis

In systematic combining and action research, the analysis differs significantly from more conventional research approaches. The analysis is performed continuously through the analytical framework and two main processes, matching and redirecting (section 4.2.2). The starting point for the analytical framework obviously derived from the first study’s findings. The framework then continued to evolve throughout the second study, always describing the current version of the author’s map of the territory being investigated (Miles, et al., 2014). The diagram was primarily updated at the intersections of the action research cycles. This was performed with two main objectives: 1) to record the theory based on the latest observation and 2) to capture the reasoning behind new hypotheses and the following experiments. An example of analytical framework from the beginning of the action research is provided in Figure 26:
Simultaneously with the evolving analytical framework, a narrative of each research cycle was created. The final versions of these form the following section (section 6.4). Additional data, such as notes from external coach engagement, author’s own field notes in the format of text and drawings, was continuously reviewed. This practice helped in obtaining a more in-depth understanding of the phenomenon, but it also aided in recalling additional information about the event for creating the narratives.

The first-degree analysis was performed at the intersection of action research cycles, as mentioned earlier. The outcome of the first-degree analysis was an updated analytical framework as cause-effect diagram and the narratives of each individual action research cycle. Through the first-degree analysis, several insights from this versatile data were discovered and collected using a simple Excel sheet. The principal analysis process during the action research is presented in Figure 27:
After the actual action research, the insights from the first-degree analysis were moved into the ATLAS.ti software for the second-degree analysis. Using the software, the insights were grouped and coded with a more abstract names to help the analysis according to the grounded theory (Glaser & Strauss, 1999). Moving into even more abstract classifications, several codes were collected under the same code category. Codes and categories emerged as a more in-depth understanding of the phenomenon was acquired. The principle of the coding process is illustrated in Figure 28, and how the data was abstracted in practice is presented in Table 30.

Finally, the categories were employed to form an additional cause–effect diagram. This diagram functioned as an analytic display (Miles, et al., 2014). The key findings surfaced from the analytic display by examining themes and patterns, clustering, and noting a relationship between the variables (Miles, et
Second study: Team-based organization model experiment

al., 2014). More specifically, the key findings were made visible as enforcing cycles in the cause–effect diagram. The diagram evolved through several iterations. In parallel, a narrative in natural language was updated. Having the narrative to verbally explain the meaning of connections is essential (Miles, et al., 2014). The final version of the diagram is provided in Appendix 5, and the findings are presented in detail in section 6.5.1.

Figure 28. The principle of coding used for final analysis.
Table 30. The coding used in the overall analysis.

<table>
<thead>
<tr>
<th>Insights Examples (data artefact)</th>
<th>Codes</th>
<th>Code categories</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tools help in three ways (Cycle 2 narrative)</td>
<td>Tools</td>
<td></td>
</tr>
<tr>
<td>Asana as a tool (Cycle 2 narrative)</td>
<td>Making all work transparent</td>
<td></td>
</tr>
<tr>
<td>Repeating manual work (Cycle 3 narrative)</td>
<td>Recurring work also becomes transparent</td>
<td>Transparency</td>
</tr>
<tr>
<td>Concept of value (Cycle 3 narrative)</td>
<td>Realizing patterns for recurring work</td>
<td></td>
</tr>
<tr>
<td>Focusing on the right things (Analytical framework)</td>
<td>Need for prioritization</td>
<td></td>
</tr>
<tr>
<td>Circles and roles improve understanding (Analytical framework)</td>
<td>Understanding the big picture</td>
<td></td>
</tr>
<tr>
<td>Emphasizing roles and accountabilities (Cycle 4 narrative)</td>
<td>Time to see the big picture</td>
<td>Team-based structure and self-organization</td>
</tr>
<tr>
<td>External pressure (Cycle 4 narrative)</td>
<td>Influence from external stakeholders</td>
<td></td>
</tr>
<tr>
<td>Ad-hoc requests [from outside] (Cycle 2 narrative)</td>
<td>Reactive behavior</td>
<td>Cadence</td>
</tr>
<tr>
<td>Concept of value (Cycle 4 narrative)</td>
<td>Long-term prioritization</td>
<td></td>
</tr>
<tr>
<td>Dynamic governance already in use (Cycle 1 narrative)</td>
<td>Time reserved for working on the organization</td>
<td></td>
</tr>
<tr>
<td>The role of enforcement, facilitator, guiding coalition (Analytical framework, secondary analysis)</td>
<td>Old patterns and habits</td>
<td></td>
</tr>
<tr>
<td>Parallel transformations (Cycle 2 narrative)</td>
<td>Change management</td>
<td>Continuous improvement</td>
</tr>
<tr>
<td>External coaching (Cycle 4 narrative)</td>
<td>Not just focusing on the problem</td>
<td></td>
</tr>
<tr>
<td>Agile leads to larger change (Analytical framework)</td>
<td>Improvement ideas</td>
<td></td>
</tr>
<tr>
<td>Dynamic governance (Cycle 1 narrative)</td>
<td>Time for processing improvement</td>
<td></td>
</tr>
<tr>
<td>Not all work is transparent (Cycle 1 narrative)</td>
<td>Lack of discipline</td>
<td></td>
</tr>
<tr>
<td>Still not shared understanding of the model (Cycle 4 narrative)</td>
<td>Learning the new model is difficult</td>
<td></td>
</tr>
</tbody>
</table>
6.4 Action research narrative: Emerging team-based structure

The action research contained four action research cycles, each focusing on different themes based on the discoveries during the previous cycle. A detailed narrative of each action research cycle is provided below.

6.4.1 Cycle 1: Initial team-based structure

The case organization already possessed cross-functional groups, or teams, working on somewhat defined goals and targets. For example, for a specific product development initiative, a cross-functional team (consisting of people from product management, product development, production, and the supply chain) had been formed and met weekly. Another similar group or team was responsible for the portfolio and roadmap planning and refinement. The leadership team had also recently adopted a more frequent weekly meeting cadence compared to the previous rhythm of every four weeks. Based on the author’s observation and analysis, these teams and their practices suffered from many similar challenges, including the following:

- Lack of focus in meetings
- Emphasizing reporting status and what has been done instead of planning for the future
- Lack of execution (“we will do [X]”)
- Difficulties in differentiating actual work and method development
- Challenges in prioritization, reacting to latest issues instead of backlog of existing issues
- Having specific detailed discussions concerning only part of participants

This list was employed to “sell” the idea of team-based organization to the leadership team by the author. Team members agreed with the list of challenges. In the leadership team, the author presented the idea of more systematically structuring the work in organization based on teams. Holacracy was introduced because of its well-documented practices. On 6 October, 2016, it was decided to start moving in this direction. This also marks the starting day of the first action research cycle. Figure 29 illustrates the major incidents during the first action research cycle:
The first action research cycle focused on harnessing these existing elements within the team-based organization model with practices adapted from Holacracy. Soon after the decision to begin, a decision to record the organization in the GlassFrog tool was also made. Each circle was set to have weekly tactical meetings and bi-weekly governance meetings. Each meeting was time-boxed to 30 minutes. Focused issue-specific meetings were arranged as needed, but only with people interested in the topic. Figure 30 illustrates the meeting schedule for a single team. It was decided to keep the meeting records in a shared Box folder in a simple Excel sheet for each circle.

![Meeting Schedule Diagram]

**Figure 30.** An example of circle’s meeting cadence for four weeks.

In the beginning, it was difficult to understand the idea of tension and the meaning of a governance meeting. Meetings were still focusing largely on status...
reporting, stating “I have done this.” A secretary kept the minutes in the meetings based on these reports. What the circles had as projects comprised rather broad areas of activities without any clear end-point. A typical example is a project named after a product or a product line, and over time, it of course has various actions and activities. These projects naturally never reach an end without clear end-outcome. Additionally, the idea of dynamic governance was confusing. Generic problems were frequently described and discussed during the governance meeting. The objective of this meeting to create and refine roles, responsibilities, and policies was completely foreign to most participants.

Toward the end of the action research cycle, the project definitions changed more toward stating an outcome, and next-actions were provided toward that outcome (Figure 31). Defining projects as clearly stated outcomes and breaking the work down further into executable next-actions represents a concrete practice in the Holacracy framework. Still, quite often in many circles, people did not work on the projects listed in the circle’s records, but on other responsibilities.

<table>
<thead>
<tr>
<th>Project: Placing of the logo decided in product []</th>
</tr>
</thead>
<tbody>
<tr>
<td>Solutions are prototyped (per brand guide)</td>
</tr>
<tr>
<td>Review held</td>
</tr>
<tr>
<td>Customized solutions for key customers decided</td>
</tr>
<tr>
<td>Checked for alignment with other product lines</td>
</tr>
<tr>
<td>Decided and communicated</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Project: Process for [] is defined.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Timing framework is drafted based on current knowledge</td>
</tr>
<tr>
<td>Workshop with all stakeholders</td>
</tr>
<tr>
<td>Refined proposal created with workgroup</td>
</tr>
<tr>
<td>A specific background reference table is created and added</td>
</tr>
<tr>
<td>Process is introduced to the organization</td>
</tr>
</tbody>
</table>

**Figure 31.** An example of a project stated as an outcome and transparency provided with next-actions instead of status report.

Internal training was developed during the cycle. The first training session was conducted with the anchor circle on 17 November 2016 by the author. It lasted only half a day, and a half of the content included videos available from the Internet. The second internal training was conducted on 6 December 2017. The participants were selected based on their interest and availability. This version was scheduled for a full day, and the material was developed to be more case-organization specific and included some hands-on exercises.

The initial circle structure was based on the fact that some of these teams already existed and provided a natural starting point. When beginning to define roles, the intuitive way to address this seemed to involve relying on the
functional structure. Many roles were defined as “[Function X] representative.” During the research cycle, the actual roles were defined based on what organization members really did in the value stream. Figure 32 presents an example of the more explicit role definition. During the action research cycle, the target of having all the circles and at least one role in each defined with a name, purpose, and accountabilities was achieved. During the cycle, the organization also evolved (which, of course, is the idea of the approach). For example, two development teams merged into one, and two new circles were created: DevOps and Offer Support. The latter, however, began operating during the second action research cycle. As previously stated, roles were continuously defined and people assigned to them. More interestingly, people changed roles, new roles were extracted from the existing ones, and some roles were discarded. In this fashion, while still taking baby steps, the company was able to experience how the dynamic governance could work for structuring the organization.

<table>
<thead>
<tr>
<th>Circle</th>
<th>Role Name</th>
<th>Purpose</th>
<th>Accountabilities</th>
</tr>
</thead>
</table>
| Product, Process and Pricing | Pricing   | Pricing guidelines are up-to-date | • Following market and cost pricing in countries to achieve highest possible CCO.       
|                         | Purpose   |         | • Modeling and improving the pricing process.          |

**Figure 32.** An example of role definition based on actual work and accountabilities in the organization.

In addition, a team-based organization constitution was developed together with the members of the anchor circle. Rather than taking the legal perspective at all, the aim was instead to achieve a simple reference guide for the practices—a simple handbook of basic rules. The “plain English” version of the open source Holacracy Constitution was used for inspiration, but the case organization’s version 1.0 was even simpler.

The organization possesses a long history with agile development, and with Scrum in particular. This team structure in product development was not affected by adopting Holacracy framework. Holacracy’s official web page provides a “Community App Store” (Holacracy, 2018). The objective is to provide samples regarding how to adapt this model in frequently occurring incidents. One of the available applications concerns adaptation for situations with development teams working with Scrum. Product Owner and Scrum Master roles were defined in the case organization’s governance.

Table 31 presents the size of the organization’s governance in numbers at the end of the first action research cycle. Eight teams or circles were defined. Figure 33 illustrates the circle structure. A total of 26 people possessed an account in GlassFrog, and 25 roles (in addition to ones defined by the framework) had been defined. Some of them were still “prototypes” from the beginning. In addition,
four roles lacked a defined purpose and eight roles lacked any defined accountabilities.

Table 31. The size of the defined team-based organization at the end of the research cycle.

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of circles</td>
<td>8</td>
</tr>
<tr>
<td>Number of people with account in GlassFrog</td>
<td>26</td>
</tr>
<tr>
<td>Number of defined roles</td>
<td>25</td>
</tr>
<tr>
<td>Number of defined roles without purpose</td>
<td>4</td>
</tr>
<tr>
<td>Number of defined roles without accountabilities</td>
<td>8</td>
</tr>
</tbody>
</table>

Figure 33. Circle structure at the end of the first action research cycle.

At the end of the action research cycle, a reflection meeting was conducted with five members of the anchor circle. The meeting began with participants writing their observations on Post-It notes. Following this, the observations were grouped into themes. We then continued by first deciding that we will continue the experiment, after which we discussed what the next research cycle should focus on. Table 32 summarizes the observations listed by the participants:
Table 32. Observations on the first action research cycle by the participants.

<table>
<thead>
<tr>
<th>Observation</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not full picture of the organization</td>
<td>Still just small amount of work is defined as roles in GlassFrog.</td>
</tr>
<tr>
<td>Meeting practices improved</td>
<td>Meetings are more effective since defined standard agenda and scope provide focus.</td>
</tr>
<tr>
<td>Getting things forward</td>
<td>Sense of accomplishing work by defining it in Projects and next-actions.</td>
</tr>
<tr>
<td>Improved understanding of the “whole picture”</td>
<td>Cross-functional meetings help exposing to a wide range of topics.</td>
</tr>
<tr>
<td>Concern regarding time in meetings and time needed for learning new method</td>
<td>Many people are in multiple teams, having multiple team meetings every week.</td>
</tr>
</tbody>
</table>

The model in GlassFrog was acknowledged as far from complete. The majority of the day-to-day work was still not explicitly defined in roles. By simply focusing on meeting practices, everyone had observed more focused meetings, and together with Holacracy’s concept of projects and next-actions, this in turn created a sense of matters moving forward faster. The Holacracy framework, by having cross-functional teams and greater transparency regarding ongoing activities, was experienced to provide a better understanding of the entire value stream, or the “whole picture.”

However, introducing the framework had brought along various new meetings. A significant amount of time was consumed in training and other educational events, which was raised as a concern.

After the observations were discussed, the focus shifted to the next action research cycle and what it should focus on. Table 33 summarizes the chosen focus areas for the second action research cycle:

Table 33. Focus areas for learning for the second action research cycle.

<table>
<thead>
<tr>
<th>Focus area</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Filling the organizational model</td>
<td>It was still clear that the majority of the work to be done was not visible in our organization model in GlassFrog.</td>
</tr>
<tr>
<td>Enforcing the metrics</td>
<td>Metrics are needed for both the framework itself and the company’s outcome.</td>
</tr>
<tr>
<td>Sharpening the facilitator practice</td>
<td>Identified as the key element in getting better at the new model.</td>
</tr>
</tbody>
</table>

Since the partial information regarding the roles and responsibilities in GlassFrog was already observed to bring a structure to operation, it was decided to continue this work and emphasize defining the model to be more complete. To be better able to justify the effort spent on the framework and the actual working meetings, it was also decided to invest more in metrics. This covers both the metrics regarding the framework itself (e.g. the number of projects and their lead times) and the actual outcome (e.g. the commercial success of the latest product evolution). For this work, and for the framework in general, the
role of team facilitator was seen as crucial. Therefore, systematically improving this role’s capabilities was chosen as the third focus area for learning during the next action research cycle.

### 6.4.2 Cycle 2: Toward the complete model

![Timeline for the second action research cycle.](image)

Figure 34. Timeline for the second action research cycle.

In the beginning of the second action research cycle, all the facilitators came together to discuss the practice. It was decided to continue to meet on a bi-weekly basis. The importance of the facilitator’s role was agreed upon, and the emphasis on preparations for the meetings was underlined. In addition, it was decided for each facilitator to visit the meetings of each circle. The objective for going forward was set to begin measuring each circle’s performance. Later, the difficulty of understanding the governance process was raised as a key challenge. A discussion event was arranged to cover the governance in greater detail, and it was decided to consider simulations for how to facilitate operational problems processing toward more systematic structural solutions. This idea was also employed in the third internal training at the end of the phase.

Even in the first action research cycle, product development Scrum teams were also defined in the GlassFrog tool. During the second action research cycle, the team-level accountabilities and authorities were made visible and explicit, and certain specific roles in teams were identified. However, the development teams’ day-to-day work was still barely affected during the action research cycle.

Based on the internal training during the previous cycle, a new circle was formed centered on supply chain responsibilities. This circle is quite different from many others, as the work partially features rather routine-like processing. Nevertheless, the idea was to create a company-wide structure, and the roles were defined to explicitly capture people’s accountabilities.

The team-based organization model was also introduced more officially to the entire organization during one of the staff information events for which the entire case organization gathers once a month. It was not raised as a significant matter, but it was still stated that this is something the organization is pursuing.
During the action research cycle, circles began to gain more discipline in capturing projects and next actions. It further became evident that the Excel sheet in the Box folder was not sufficient anymore. After some research based on the existing working habits, Asana⁶ was selected as a tool to capture this information. All the existing information from Excel was thus transferred to web-based Asana, which better serves the idea of the common company “corkboard” presented in Holacracy literature (Robertson, 2015).

During the join planning meeting in May 2017, a workshop was conducted to explore the idea of including people outside the case organization in a more formal fashion within the team-based organization model. The workshop participants were largely the same as those who attended the focus group interview four months earlier for the first study. For this reason, they were, to some degree, familiar with the topic. As a result of this workshop, it was decided to form a new circle in the organization called Voice of the Customer. They further agreed to run their meetings bi-weekly rather than weekly as with the local circles, following the same meeting agenda and tracking the progress using the Asana tool.

A third internal training was arranged. This time, it was targeted to include all the facilitators and other people most intensively involved in circles. During this session, it was emphasized that efforts should be made to convert operational tensions in tactical meetings into structural proposals for governance meetings, as mentioned previously. The governance meeting exercise was built around this idea.

The main focus during the action research cycle was to complete the data regarding the organization in the GlassFrog tool. Figure 35 illustrates how this progressed during the cycle. The number of defined roles increased from 25 to 95.

![Figure 35. The size of the organization as defined in the GlassFrog tool.](https://asana.com/)

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⁶ Asana is a web-based work management tool. [https://asana.com/](https://asana.com/)
With the focus on metrics, we began tracking the lead times for projects. Figure 36 represents the data from one circle. Each bar presents a project and its lead time. The project starting date is placed on the x-axis. It is clear that, by improving the definition of a given project and making the progress transparent, the lead time dramatically improved.

![Figure 36. An example of the decrease in project lead times (in days) due to focus on circle metrics (per start day).](image)

In general, during the action research cycle, the case organization experienced considerably different pressures from the corporation. These included a restructuring initiative, a human resources program, and the more intensive introduction of conventional project management office practices. This particularly affected the anchor circle representatives’ schedule. Partially because of this, the focus on the team-based organization was less than optimal for certain periods of time. People were not attending the Holacracy meetings, as they were creating a quick response to requesters. Toward the end of the action research cycle, this was raised as a tension, and the planned meetings were emphasized further.

On 19 June 2017, five members of the anchor circle came together for a reflection meeting. Observations regarding the team-based organization were written down individually and collected on a whiteboard using Post-It notes. The observations were categorized into three groups, as summarized in Table 34:

<table>
<thead>
<tr>
<th>Observation</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Meeting practices further</td>
<td>Predefined agenda is now known and expected, and time-boxing is more</td>
</tr>
<tr>
<td>improved</td>
<td>disciplined.</td>
</tr>
<tr>
<td>Transparency improved</td>
<td>Ease of updating projects and actions enforces the idea of “making all</td>
</tr>
<tr>
<td>through tools</td>
<td>work transparent.”</td>
</tr>
<tr>
<td>Learning still incomplete</td>
<td>The basic idea is embedded in everyday work, but needs to improve on</td>
</tr>
<tr>
<td></td>
<td>metrics, check-lists, and governance.</td>
</tr>
</tbody>
</table>
First, it was again found that the meeting practices had further improved. The predefined agendas began to feel natural in all the circles, and the agenda was expected to be followed. In turn, this improved the capability to stick with the rather strict time-box of 30 minutes for each meeting. However, opportunities for improvement in tactical meetings were also identified. The focus on the discussions could be enforced further with disciplined facilitating. Some people were still not fully on board with the idea, and comments had been made in the lines of, “Am I really needed in these meetings?”

Second, the tool change from Excel to Asana was experienced as a great help. It was now much easier to enter projects into the “corkboard.” The ease of doing so enforced the idea of “making all the work transparent through projects.” In addition, it was far more convenient to follow the work through Asana during the meetings, making them more efficient.

The third category was centered on learning, and particularly on how there still seems to be work remaining in this area. Despite the need for further learning and improving, it was seen that Holacracy practices now seem to be embedded within everyday working practices. Regarding learning topics, some were raised during the reflection meeting. First, the importance of metrics was now better understood. In this research cycle, focus had been placed on enforcing metrics, but actual implementation remained low. However, the discussions and playing with ideas had increased the understanding of the need. The second major discovery during the research cycle concerned the already mentioned meaning of the governance meetings and practices. Some people now possessed a better understanding of what the purpose is and why we conducted dedicated governance meetings.

After the analysis, the group decided to focus on four main themes during the third action research cycle, summarized in Table 35. The first was to continue focusing on facilitation skills, but more through on-the-job mentoring and coaching rather than through specific events. The second goal was to fully leverage the use of Asana as the tool for transparency. Examples of ideas to achieve this included making absence visible for others in the tool, starting to use the prioritization of projects for circles as well and not just for own individual projects, and enforcing the use of check-lists for recurring accountabilities. It was also decided to engage more people who work in the circles in terms of receiving feedback regarding the direction where the model and the methods are going. To guarantee that change energy is available for the transformation, it was also decided to help the anchor circle perform in the role of a guiding coalition (Kotter, 2014).
Second study: Team-based organization model experiment

Table 35. The plan for the learning focus areas for the next action research cycle.

<table>
<thead>
<tr>
<th>Focus area</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>On-the-job mentoring and coaching</td>
<td>Training had involved more classroom training and participant workshops. It was time to move to more hands-on mentoring and coaching.</td>
</tr>
<tr>
<td>Better use of tools for transparency</td>
<td>Tools were now in place, but it needs enforcement to increase the intensity of their usage.</td>
</tr>
<tr>
<td>Involve circle members in method development</td>
<td>Initially, the model had been defined by only a few people; now, we wanted the information from practitioners.</td>
</tr>
<tr>
<td>Guiding coalition</td>
<td>We recognized the need for enforcement and leading by example. It was decided that a group of people from the anchor circle that share a special interest in the transformation form a guiding coalition.</td>
</tr>
</tbody>
</table>

6.4.3 Cycle 3: Anchoring the practice

Figure 37. Timeline for the third action research cycle.

The summer vacation period slowed matters down, and when people returned, they were busy with their meetings that had been scheduled before leaving for vacation. Furthermore, the major new product release date was approaching, which added considerable unusual load. This resulted in numerous missed circle meetings, which subsequently lowered the change energy. Toward the end of the action research cycle, circle meetings were occasionally rescheduled to be
able to conduct them at all. While not the desired situation, this proved that people were still seeing value in having them.

The structure of the team-based organization remained quite stable (Table 36), with two notable exceptions. Both relate to the significant change effort in the organization due the above-mentioned major release. This release included the introduction of a cloud technology-based part of the offer. This created a need to learn to manage the operation and governance of such a service and to place cyber security and privacy aspects under even more rigorous focus. The organizational changes were easy to make with the team-based organization model, a new SaaS (software as a service) circle was created, and several cyber security- and privacy-focused roles were created in numerous existing circles. The need for the new circle was already identified during the previous research cycle, but building it really started following the vacation period. This, of course, did not take care of the learning and additional work to be done, but organizing for the purpose was lightweight and streamlined.

Table 36: The change in the size of defined organization (people, circles, roles) during the third action research cycle.

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Beginning</th>
<th>End</th>
</tr>
</thead>
<tbody>
<tr>
<td>People with an account in GlassFrog</td>
<td>40</td>
<td>40</td>
</tr>
<tr>
<td>Number of circles</td>
<td>12</td>
<td>11</td>
</tr>
<tr>
<td>Number of defined roles</td>
<td>95</td>
<td>101</td>
</tr>
</tbody>
</table>

Soon after the vacation period, a forming workshop for the Guiding Coalition was conducted. During the meeting, the group discussed situations wherein self-organizing team behavior had been successful. Based on this, the workshop continued to identify conditions for the further adaptation of the team-based organization model. The identified conditions included the following:

- Ability to present the idea (e.g. team-based organization)
- Ability to present the already-achieved benefits (e.g. of team-based organization)
- Having evidence that we are already moving (small victories)
- Positive leadership (joining based on volunteerism)
- Compelling objective
- The match between the objective and the stakeholders

It was decided that the guiding coalition will meet bi-weekly in the form of a working lunch. The first couple of working lunch events focused on reaching the same page with the idea that this group needed to set an example by living and breathing team-based organization. As a concrete example, it was agreed to use Asana as a primary work management tool instead of emails. Emails were identified as causing a great deal of ad-hoc processing every day. Another

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7 Guiding Coalition is a group of people across the organization that deeply feels the urgency of the transformation (Kotter, 2014, p. 29)
example of agreed practices included face-to-face working (like pair programming in agile development) with dedicated time-slots. This was later emphasized during the external coaching sessions (see below). We also decided to dig into the old data and determine whether project performance had improved. The changes in average lead times for all the original circles are presented in Figure 38. The illustration reveals a rather dramatic reduction in lead times. While this can largely be explained by the practice of defining more concrete projects instead of broad areas of activities, we can still argue that this illustrates how much faster concrete outcomes were achieved. The guiding coalition agreed to use this data as a “small victory,” which was identified as the condition for widening the acceptance of the model. An important insight was that the guiding coalition’s working lunch events acted as a “strain relief valve,” since everyone faced difficulty finding a way to combine the heavy workload from changes in work and simultaneously develop the team-based organization.

![Figure 38. The change in average lead times (in days) for projects in different circles.](image)

We did not get to work much with facilitators specifically, which was the original idea from the previous reflection meeting. Instead, an external coach began working with the 3P circle. The coaching engagement intensively and actively involved all the circle members in the process, as was one of the chosen focus areas for this research cycle. First, a meeting between the coach and the guiding coalition was conducted to obtain their version of the objectives for the coaching engagement. Following this, the coach conducted individual circle member interviews two days prior to the first coaching session. The material from the initial workshop with the guiding coalition and separate data from the interviews were employed to set the stage for coaching. The actual coaching engagement included four bi-weekly sessions lasting two hours each. The format aimed at proceeding with concrete experiments for improvement. Each coaching session resulted in an experiment poster with three fields: why, what, and follow-up. The experiments are summarized in Table 37:
Table 37. Summary of the experiments defined during the 3P circle’s coaching sessions.

<table>
<thead>
<tr>
<th>Coaching session #</th>
<th>Why</th>
<th>What</th>
<th>Follow-up</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Making the prioritization of projects easier</td>
<td>Clear planning by breaking projects down into next-actions</td>
<td>Addressing the experiment in the tactical meeting’s closing round</td>
</tr>
<tr>
<td></td>
<td>Enabling identifying all the right people for the project</td>
<td>Increase the usage of Asana for planning</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Transparency to progress</td>
<td>Indicating on the board if the project is not progressing</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Currently, projects requiring contributions from multiple persons are slow</td>
<td>Identify top-three projects continuously</td>
<td>Addressing the experiment in the tactical meeting’s closing round</td>
</tr>
<tr>
<td></td>
<td>Understanding of importance is not aligned</td>
<td>Recurring “action” timeslot for circle work</td>
<td>Following the lead-times</td>
</tr>
<tr>
<td>3</td>
<td>Repeating manual work takes a lot of time and is error-prone (pricing information as an example)</td>
<td>Agree on how the information is updated, where it is stored, what is stored, for which products first, etc.</td>
<td>Requests are reduced</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Take this forward as a project in the circle</td>
<td>We speak with one voice</td>
</tr>
<tr>
<td>4</td>
<td>Continuous improvement</td>
<td>Use a continuous improvement process as an alternative to governance practice.</td>
<td>Lead time for most important projects</td>
</tr>
<tr>
<td></td>
<td></td>
<td>To enforce teamwork, schedule the weekly circle work timeslot to a remote location.</td>
<td>The mood after the workshops</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Number of projects expected to reduce</td>
</tr>
</tbody>
</table>

The first coaching period resulted in increased use of the Asana work management tool and, therefore, increased transparency. During the second period, the circle sought to identify the top priority projects, but doing so appeared to be difficult. All the projects seemed important, and it became clear that the circle members did not share an aligned understanding of each project’s importance. The theme for the third coaching period focused on the definition of value. It was discussed that more value is created if the focus is on outcomes that will enable more efficient and effective processing in the future. A project was identified for specific types of repeating requests estimated to take significant time from multiple circle members. Defining a process for, or a standardized means of responding to, repeating requests was called a “cookbook” approach. The final coaching session focused on the continuous improvement and experimental culture itself. It was decided to develop an alternative for standard governance meetings. If no governance proposals exist for the meeting, then the time-box is used for the improvement process learned during the coaching engagement.

As usual, a 90-minute reflection meeting was conducted at the end of the research cycle. First, participants were asked to identify matters that were working well and those that were still hindering. The improved transparency was mentioned once again. Furthermore, the model was identified to help in managing own work and the prioritization. Although, the prioritization was
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seen as difficult during the 3P-circle’s coaching engagement, as explained above. The positive aspect concerned the ability to think about the priority of work when it is visible rather than the ability to be effective at it yet. The toolset was seen to be good—GlassFrog for recording the organizational structure, and Asana for supporting the management of work to be conducted. Finally, the general feeling was that the team-based organization model had been rooted as “our way to work.” This being said, gaps in performance still remained. Several observations considered roles. Many of the roles were still not clearly defined, and the role’s importance to an assignee in all cases was questioned. The hypothesis was that some people simply agree to be assigned out of courtesy without considering whether fulfilling the accountabilities is possible. Circles raised discussion as well. It was identified that circles (the author assumes the discussion was about the DevOps circle) had been funded for too little reason, resulting in too much overhead due from the meetings. The participants identified the need for something “lighter” for these purposes. A question of whether the circles are the “right” ones was also raised. It seems that several people were members of many circles. The discussion followed that some felt that being a member of a circle, and attending its meetings, might currently be the only way to know what is going on. Transparency through the tools should ease this, and it should be possible to follow the progress on a high level just through the tools.

The ideas for focus areas were then gathered for the final action research cycle, and once again, four focus areas surfaced, as summarized in Table 38. The first focus area was to continue the practice of making more work transparent via Asana. The second involved presenting the idea of real value to circles other than 3P, helping to understand the value in continuous improvement. Third, some ground rules for absence from the circle meetings needed to be defined. Fourth, the meaning of role definition needed to be educated. This could be accomplished from two angles: the roles could be better defined, and awareness could be raised that the role’s accountabilities involve expectations that others can have toward the assignee.

Table 38. The plan for the learning focus areas for the next action research cycle.

<table>
<thead>
<tr>
<th>Focus area</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Discipline in making “all” work transparent in Asana</td>
<td>While seeing the value of making things transparent, it still needed enforcement.</td>
</tr>
<tr>
<td>The concept of value emphasized in all circles</td>
<td>The idea comes from an external coach focusing and prioritizing the longer-term value optimization.</td>
</tr>
<tr>
<td>Rules of attendance/absence from circle meetings</td>
<td>Since other responsibilities caused absence from the planned meetings, some ground rules were needed to tackle this.</td>
</tr>
<tr>
<td>Clarifying the meaning of role</td>
<td>Roles did not seem to receive enough attention, and at times, work was picked up following the old habits. More attention to why (as per role) someone is expected to act on an issue was needed.</td>
</tr>
</tbody>
</table>
6.4.4  Cycle 4: Focus on value

<table>
<thead>
<tr>
<th>Focus</th>
</tr>
</thead>
<tbody>
<tr>
<td>Discipline in making &quot;all&quot; work transparent</td>
</tr>
<tr>
<td>Concept of value emphasized</td>
</tr>
<tr>
<td>Rules of attendance/absence</td>
</tr>
<tr>
<td>Clarifying the meaning of role</td>
</tr>
</tbody>
</table>

The guiding coalition began to publish short (preferably single A4) “quick guides” in conference rooms where the circle meetings were held. The quick guides were introduced in the circle meetings and were also left visible as laminated on the tables or posted on the walls. According to the identified shortcomings in practices, the first ones addressed the meaning of role definition. The guides emphasized authority and accountability and sought to make the point that these are explicitly defined for the goal of enabling self-organizing at both the individual and circle levels. These addressed the research cycle’s focus on clarifying the meaning of a role. Another quick guide was inspired by the concept of failure demand. This idea initially came from the external coach’s first engagement and was later raised once again in guiding coalition meetings. The quick guides emphasized that one should always seek ways to improve the long-term performance. The idea was to start moving the focus from just efficiently processing requests to systematic improvements in handling the recurring requests in a repeatable and predictable fashion. The quick guide helped identify several projects to streamline and automate repetitive tasks in answering the recurring requests. In practice, this meant drafting simple work instructions and storing them in the same Asana tool, which was used to manage the circle’s work queue. An example was available from the previous action research cycle in terms of the collection of frequently requested information into a single storage and publishing this information to people who were most concerned.

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8 Seddon (2005, p. 23) defines the failure demand as “…demand caused by a failure to do something or do something right for the customer.”
Asana allowed us to add a custom data field to each project. We began using this to mark the role whose accountabilities the project addressed. In addition, we enforced a habit of starting the update in tactical meetings with “as a {role}.” This further enforced the change in thinking from people to roles.

In some cases, the role definitions were printed for each participant in the meetings. This helped gain a better understanding of identifying tensions. A number of further tensions were identified to be processed when people actively examined their roles and considered which of the accountabilities could be taken care of better or more effectively.

An effort was made to try to arrange additional internal training. This was needed because new employees and other stakeholders were more intensively involved in the team-based structure. However, at the same time, the workload pressure in the organization continued growing. Several completely new business initiatives were thus introduced. In addition, the renewal of a complete product line was already ongoing, and this also involved reworking the existing business model. This sense of being overburdened made it impossible to arrange the training, and it further resulted in a significant amount of absence from the agreed meetings. Ironically, there was not time to decide on the rules for being absent, which was one of the agreed-upon focus points for the action research cycle.

The same external consulting coach that worked with the organization during the previous study cycle was invited again to work with the organization. Previously, the coaching focused on a single circle. This time, the focus shifted from a single circle to the circles working together. This exercise further emphasized the importance of defining circles and roles. The engagement was again divided into four sessions. Table 39 summarizes the work with the external coach:
In the first coaching event with the external coach, it was decided to experiment with using the tool employed for the portfolio and roadmap planning to synchronize the work of other circles as well. This made sense, since the purpose of several circles was focusing on different aspects of the portfolio and the roadmap. The features proceeding in the development’s roadmap Kanban board often trigger work in other circles at different stages. The second coaching event indicated that a certain number of external controlling groups did not have a defined interface to the team-based model. The information from these groups was poorly communicated to circles that were affected by their decisions. It was decided that, after the up-coming events, sharing this information would be emphasized. A few information events were thus introduced, and while some of the decisions contradicted what is actually possible in practice, it was considered valuable that these contradictions surfaced. During the third coaching session, the focus resided on the circles’ interfaces to each other. Representatives from the three different circles first captured the main purpose and accountabilities of the circle on a flipchart. Participants then visited the flipcharts of other circles and listed what they expected or needed from them. Some confusion arose between the understood accountabilities and
expectations from others. After some discussion, the root cause was determined to be, on the one hand, the still incomprehensive modeling of work in the roles, and on the other hand, the lack of focus on roles instead of individual persons in the normal operation. For example, certain matters were handled in a given circle just because certain people happened to be members of that circle (for other accountabilities). As a conclusion, we decided to continue emphasizing the importance of role definitions and to use meeting practices to do so. The practices remained the same as those we had discovered earlier; they just needed to be continuously emphasized.

The most significant governance decision so far also occurred during this action research cycle. It was proposed that the development super-circle having all development teams as sub-circles was no longer needed. To better represent the natural hierarchy of work, the development teams were moved under the portfolio and roadmap circle. The roles from the development circle were delegated to various pre-existing circles. The change, traditionally considered a significant organizational change, was processed with ease. In the governance meeting, it was decided to make a proposal to end the circle. The final decision was then delegated to the super circle, which in this case was the anchor circle. In their governance meeting, the change was not objected, and therefore, it was immediately implemented.

Again, at the end of the action research cycle, a reflective event was organized. We began by collecting individual observations in several different categories. First, participants were instructed to think about mind-set changes (i.e. changes in behavior and in observed outcomes in the context of team-based organization transformation). Second, they were instructed to attempt to differentiate between observations linked to the past half-year and observations during the entire two-year experiment. Third, if possible, participants were asked to mark whether their observations came from the perspective of an individual, one or more circles, case organization or if they were external to the case organization (corporation or outside corporation). After some time, the focus points of the current research cycle were repeated, triggering a few more observations to be listed.

The observations largely considered individual and circle levels. Only a few exceptions were identified in the scope of the case organization and only one in an external environment.

One common theme was that the model was now generally more understood to the extent that several participants identified gaps between the desired model and current behavior. In contrast, several identified a decline in participation and even stated lacking the energy to help the transformation despite their willingness. Even with these difficulties, however, the consensus was that “going back” was no longer an option.

The benefits and improvements identified from the model were in the same lines as in the previous reflection meetings: better understanding of what is going on, better ability to prioritize the work, and improved transparency of one’s own and others’ work. However, it was mentioned that the basis for prioritization was not clear. While it was technically possible to prioritize and
make the priority transparent, it was challenging to know what the prioritization should be based on.

The final exercise during the workshop involved individually thinking about the two-year transformation period and ranking it using a five-point scale:

- 5 – Transformation has been faster than I believed
- 4 – Transformation has proceeded as I thought
- 3 – Minor challenges were faced, but nothing significant
- 2 – Significant challenges were faced
- 1 – I would be willing to give up

Here, the answers varied between 3 and 2. None identified the journey as being smooth.

### 6.5 Results

The second study focused on gathering empirical data regarding the implementation of the team-based organization model. The conducted action research revealed that it is straightforward to begin the implementation and there are immediate positive outcomes, such as increased understanding of the entire organization among its members, and thus improved consciousness concerning what really matters to the organization. However, the complete shift from the old model to the new one appeared to be even more difficult than anticipated. Cooperation with external entities was not following the new model, and this caused inertia to the transformation in the case organization. Figure 40 illustrates how the second study’s key findings are interlinked together and Table 40 summarizes each finding. Discussion on the key findings follows in the next section.

Table 40. Summary of key findings.

<table>
<thead>
<tr>
<th>Finding</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Change management is embedded in the model</td>
<td>The team-based organization model (as implemented through Holacracy framework in the case organization) includes processes and practices for implementing and adapting to change. Therefore, the target model itself supports the transformation.</td>
</tr>
<tr>
<td>Existing interfaces cause inertia</td>
<td>Individuals and organizations do not operate in isolation. They are dependent on numerous entities and elements. When changing ways of working, these anchoring mechanisms start to surface in terms of conflicting interfaces.</td>
</tr>
<tr>
<td>Increase in overall awareness of value creation</td>
<td>Making the work transparent enables everyone to see how the organization works. It also creates an understanding of where the time is used. In turn, this forces everyone to think about what the value is that the organization delivers and which actions should be prioritized.</td>
</tr>
<tr>
<td></td>
<td>Through the transparency, the organization starts to obtain a realistic understanding of its capacity. This allows avoiding over-commitment, which is one of the sources of waste in organizations.</td>
</tr>
</tbody>
</table>
Second study: Team-based organization model experiment

Figure 40. The key findings from the second study are interlinked together.

6.5.1 Key findings: Organizational interfaces define the potential

Change management is embedded in the model

Based on the action research results, it can be concluded that it was easy to begin experimenting immediately with a team-based organization model. After the initial elements and practices were agreed upon, the framework itself drove further adaptation. In team-based organization, organizational change management is embedded in the model. The same phenomenon was identified at the development-team level with agile development methods (Punkka, 2016). The model provides early victories—one of the success factors in change management literature. Examples of such early victories include the improved efficiency through meeting practices, better understanding of the big picture due to explicit governance, and the sense of moving forward because of transparency.

The transparency provides data for further transformation. The model provides time and practices to analyze the data and address the surfacing issues (or tensions). This represents a self-enforcing cycle. The better one becomes, the more information one has for identifying areas for improvement. In this way, the team-level transparency leads to a system-level improvement. This also diminishes the need for the initial analysis or exhaustive up-front planning before the initial start of the transformation. The case study further reveals that this mechanism allows us to start the change with minimal preparation. In
section 3.3.5, we examined the guidelines for transforming an existing organization provided by the novel models for organizing. Table 41 summarizes the characteristics of this simplified three-phase transformation framework and how it was manifested during the case study:

**Table 41.** Characteristics of simplified three-phase transformation framework.

<table>
<thead>
<tr>
<th>Phase (often overlapping)</th>
<th>Description</th>
<th>Case study</th>
<th>Change leadership/energy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Decide</td>
<td>Commitment from sufficiently high authority</td>
<td>The leadership team and the managing director were convinced to start the experiment.</td>
<td>Existing leadership structures.</td>
</tr>
<tr>
<td>Organize initially</td>
<td>Select the initial structure and process for operation and governance</td>
<td>Initial teams and roles were defined based on existing work distribution.</td>
<td>Enforced the new structure, making the change explicit and visible. Leadership transfers to teams themselves.</td>
</tr>
<tr>
<td>Evolve</td>
<td>New model is becoming the dominating model. The structure and process continue to evolve based on the learning from the wider use.</td>
<td>Followed the change energy, working with volunteers. Small victories were discussed. Getting better at dynamic governance enabled significant organizational changes.</td>
<td>Energy for continuous change coming from the system itself.</td>
</tr>
</tbody>
</table>

Once familiar with the model, the organization continuously executes organizational changes at different levels. This is good news, because today, organizations are faced with a continuous and simultaneous multi-change environment. Even going through transformations represents part of normal operation. Changes are no longer considered specific states of an organization. The model incorporates effective environmental scanning (i.e. everyone has a duty to sense tensions), relevant organizational changes are made continuously (i.e. through the governance process), and the executive change management is flexible (i.e. more comprehensive change is initiated in super-circles while local changes are managed within a circle). In practice, this manifested in the case organization on several occasions. Several circles were created (e.g. Offer Support and Supply Chain) and removed (e.g. DevOps). A more significant reorganization concerned the removal of the development circle and moving its sub-circles under the portfolio/roadmap circle. The capability to execute these changes in a lightweight and speedy manner forms the prerequisite for an evolutionary change strategy to survive even in turbulent environments (Dunphy & Stace, 1993).

The above, however, does not happen automatically by itself. First, throughout the action research, multiple people identified the facilitator’s role as crucial. The case began with several people fulfilling the role, but later, this was narrowed to people who possessed the most interest in the model. The facilitator’s role during the transformation is not limited to facilitating the
practices, but also involves enforcing the disciplined execution of the process, even at times when external pressure was present. Second, the case organization was able to design an internal training program based on the author’s knowledge on the topic. Again, this represents one of the key success factors in change management literature. Third, an external coach was engaged in two separate sessions. This provided an opportunity for a larger group of participants to intensively take part in defining the structure and the process, as involvement also comprises a key success factor. The discipline further required conscious enforcement throughout the research period. At the end of the two-year action research, it was felt that the model is “now ours”; however, the need for enforcement remained present.

**Existing interfaces cause inertia**

The case organization comprised one operative unit of a large corporation. Therefore, the corporation featured several entities with which the case organization was cooperating. The interface for these entities was conventional and did not respect the new model. The shared services from the corporation involved asking activities and artefacts that would be non-existent based on the new operating model. Examples of such conflicting requests included setting individual goals, individual task allocation plans, annual budgeting for the most part, and detailed execution plans. External partners also asked for detailed fixed contracts, named responsible individuals, and so on. Requests coming from the external portion of the corporation to process certain matters acted as triggers for reverting into the old manner of working and answering the requests in a reactive fashion. The requests led to an over-burden, or reactive processing of new triggers with short-term benefits in sight. Significant examples from the research period include new business initiatives without analyzing the organization’s current level of workload. In many occasions, work performed for these initiatives was also not made visible in the tools. This caused practitioners to revert to old patterns and habits. Kotter (2014) calls this reverting to left-side processes, namely to hierarchical top-down management.

And they can revert in the blink of an eye.  
(Kotter, 2014, p. 171)

Further on, different auditing authorities had their reference models defined based on the current common understanding of the best practices. After all, this represents what the best organizations in this field are doing. Being audited during the time of transformation requires deep understanding of both the new model and the current preferred reference model. Specifically, expertise is required to be able to explain the bridge between the two models to the auditor. The same applies to the auditor as well and at least requires extra time and energy during the audit process. During the action research period, the case organization was audited for different purposes several times. During the ISO9001 audits, the team-based organization was introduced to the auditor,
and several audit requirements were fulfilled by this structure, process, and artefacts. For example, it is rather straightforward to answer a question about decision-making authority with the explicit role definitions. This indicates that, given time, an open-minded auditor, and people capable of explaining the motives behind each model, it is possible for them to co-exist. In essence, this provided evidence regarding the possibility of reframing the new model in a manner that fits the requirements of different interfaces.

It is interesting to consider how acknowledging this phenomenon could be used to accelerate the transformation. We return to this in sections 7.5 and 10.2.

*Increase in overall awareness of value creation*

On multiple occasions, and especially in the research cycle reflection meetings, participants mentioned the benefit of making all work transparent. This was especially noticeable during action research cycles 2–3 after the web-based Asana tool was utilized for managing projects and next-actions. Using the proper tools lowered the bar for making all work transparent through the “corkboard.” Making the most, if not all, work transparent further allowed members of a circle to compare the varying value of matters being processed. There was an increase in overall awareness of value creation. The transparency of the entire organization makes it painfully clear that continuous prioritization is mandatory. It is no longer sufficient to prioritize from one perspective (e.g. from a personal viewpoint). Everyone instead needs to consider the priority based on what is the most important piece of work for the entire organization. While the need for long-term prioritization was understood, how to actually accomplish this remained difficult. Again, the tools for transparency were identified to provide the means to manage the prioritization; this was just difficult to accomplish in practice.

When all work is transparent, the reoccurring work is transparent as well, which can offer opportunities for automation. Many of the requests that are immediately processed are discovered to be recurring and, as such, not surprising at all. A “cookbook” approach was designed during the first external coaching engagement in research cycle 3. A cookbook means that either a process or data storage is defined so that, when this specific type of request comes, a standard response is readily available. Handling of the product information data related requests in the case organization provides an example. Four people mentioned that up to 30% of their time goes to finding answers to product-related requests because the data is scattered. By collecting this data within a shared common storage, it is always available and up to date, leading to significant time savings. Several other opportunities for standardizing work were later identified as well. To enforce identification, the concept of value was also one of the quick guides developed in the guiding coalition to remind everyone about the importance of identifying these opportunities. When processing of recurring work is systematically improved, time is saved from routine task processing. If the saved time is further invested in improvement,
even more time is gained for value-adding activities and, for example, creative thinking, and therefore innovation.

Transparency further allowed data gathering regarding project lead times. The data provides a reasonably effective measure of an organization's true processing capacity and offers a means for avoiding one of the lean thinking's hidden wastes—namely, wishful thinking (Larman & Vodde, 2009). The mismatch between demands and capacity is easily hidden with ad-hoc and reactive processing. Furthermore, an enforcing loop is active here as well. The more the organization learns about its capacity, the more predictable it becomes. The more accurate the progress forecasts are, the fewer last-minute activities are invoked. When everyone becomes aware of the organization’s capacity, “no” can be immediately said to more subjects due to simply being unable to act on those ideas. Time is thus saved from unnecessary further analysis. Predictability is also beneficial for building trust. Increased trust eases the need for justification, assuring, and contract negotiations. All this saved time can then be invested in further improvements and other value-adding activities. In other words, this means being more effective and more in control by being more relaxed and focused.

6.6 Discussion

Action research was conducted in the case organization in order to initiate the transformation into a team-based organization structure. To this end, the organization implemented Holacracy framework. All in all, the action research included four cycles with different interventions. Each action research cycle focused on specific areas or topics, each time refined based on the previous cycle or cycles. The areas and topics proceeded from establishing the initial structure to focusing on optimizing the structure’s value creation. The study’s primary objective was to experiment with the team-based organization in practice and determine whether it can be initiated in a bottom-up fashion without much up-front planning. Furthermore, we were naturally interested in the implications of such a transformation, including the potentials and limitations of a bottom-up approach.

Ways of initiating bottom-up institutional change

Through the bottom-up agency, the author explained the need for the new model in terms of the challenges identified in the existing manner of organizing. The model for answering the challenges was also explained based on the already ongoing experimental practices, such as cross-functional working groups. These introductions were further provided during the pre-existing practices, such as manager one-on-ones and the leadership group’s standard meetings. By utilizing these readily available events and data, the need for change was agreed upon. These actions, enabled by the author’s embeddedness within the case organization, answer RQ2.1 regarding how the bottom-up agency can initiate change at the organizational level.
Although we can argue that the case organization had been preparing for the transformation for eight years (the time from the first agile development introduction), the actual more intensive period started without much planning. Holacracy was chosen as the initial model largely because it offered quite detailed guidelines for day-to-day operation and mature material for the training. Given that, two years later, the model that evolved from that minimal plan became the legitimate operating model, it can be said that such a transformation can be initiated by the activities of a bottom-up agency, and with minimal up-front planning.

Controlling the transformation without central steering

It is important to replace the missing detailed plan with other controlling mechanisms. Numerous informal and emergent mechanisms were identified during the study, providing an answer to RQ2.2 regarding how the transformation is controlled.

The action research itself, of course, provided a rhythm for the improvement with the four research cycles, each with specific focus areas. However, it is important to remember that models such as Holacracy include elements for continuous refining of the model and the manner of working. These elements must be kept in place when starting, no matter how minimal one wants the initial step to be. Without either a plan or these reflective feedback elements, the transformation lacks any controlling mechanisms. Furthermore, the momentum must be guaranteed by having the work actually discussed in the meetings. If most of the work is performed outside the circles, then meetings quickly lose meaning, and people will fade away if they do not experience the intended benefits. The new way needs to dominate the coordination.

After some time into the experiment, the case organization began a community called guiding coalition to ensure sufficient energy in the transformation. This group of interested people, a community of practice, came together frequently to discuss the current challenges. In turn, this steered the experiment in an informal fashion.

Initial implications of implementing team-based organization structure

An answer to RQ2.3 regarding the emerged outcomes of the new, team-based organization was obtained from the participants. Throughout the study, the participants reported that their understanding of the big picture—that is, how matters are worked on and what everyone is working on—improved. Since people are organized according to the actual flow of value, they seem to gain a considerably improved understanding of the whole picture of the organization. About halfway through the research, more and more people began to understand and value the potential of working in teams. The idea of being efficient when working solo thus began shifting toward understanding that working in teams or groups is, in many cases, far more effective, leading to better fitting outcomes. The improved focus and clarity of the objective in varying activities also resulted in significant improvement in lead times for all
six measured circles, with the best circle shortening the lead time from 223 to 34 days. The final segment of the research focused on optimizing the created value. The case organization determined that there was considerable reactive work in answering different demands or requests. When systematically addressing these and becoming better at streamlining and standardizing the processes, the created value became higher in both quantity and, especially, more predictable quality.

### 6.6.1 State of the organization (where we left off?)

A repeating message throughout the research cycles concerned the improved idea of both what the organization is working on and the overall bigger picture of how the organization is creating value. Transparency and the meeting practices further made people feel better equipped to prioritize their work.

All the observed changes, however, were on the individual or single-circle levels. Organization-wide observations were few, and observations considering people or entities outside the case organization were nearly non-existent. This leads to the conclusion that the organization had not changed much from the external perspective. Change had remained local and limited in scope.

Based on the final reflection meeting, the initial excitement regarding the new model had declined. Several participants mentioned having realized the model’s benefits, but lacked the time and energy to go forward. Furthermore, a varying level of understanding was identified regarding what it means if the new model is implemented. It seemed that some were under the impression that the model is implemented while others considered the transformation to be only half-way done. It was further discussed whether the organization could still revert to its earlier state. However, there seemed to be consensus that this would not be possible anymore. In that sense, the team-based structure represented the new norm. The argument was more about whether it would go forward systematically itself, which was one of the initial ideas—a continuously improving organization.

### 6.6.2 Secondary analysis: Agile as organizational design principles

Secondary analysis was performed using the code categories identified during the second-degree analysis. When we examine agile development methods, we often only see them as a set of practices. However, if we look more broadly at different agile methods, we can identify that they incorporate a set of organizational design principles, which are highly aligned with the code categories that emerged during the primary analysis (see Table 30, page 119). Table 42 summarizes these principles:
Table 42. Summary of the organizational design principles in agile development methods.

<table>
<thead>
<tr>
<th>Principle</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Information transparency</td>
<td>Information is made available (for pull) for everyone. This guides toward</td>
</tr>
<tr>
<td></td>
<td>real-time information instead of fixed communication mechanisms (push).</td>
</tr>
<tr>
<td>Self-organization</td>
<td>People take ownership regarding how they work in teams. Teams and their</td>
</tr>
<tr>
<td></td>
<td>members have explicit decision-making power.</td>
</tr>
<tr>
<td>Team-based structure</td>
<td>Basic organizing element is a team instead of an individual. A team is</td>
</tr>
<tr>
<td></td>
<td>working toward meeting their emerging and shared direction.</td>
</tr>
<tr>
<td>Organizational cadence</td>
<td>The whole organization is following the same cadence, or rhythm, for re-</td>
</tr>
<tr>
<td></td>
<td>evaluating its progress and direction.</td>
</tr>
<tr>
<td>Learning is incorporated</td>
<td>The workflow incorporates practices for systematic learning and continuous</td>
</tr>
<tr>
<td></td>
<td>improvements.</td>
</tr>
<tr>
<td>Hierarchy by scope</td>
<td>When issues grow too complex for one team to handle completely, a hierarchy</td>
</tr>
<tr>
<td></td>
<td>is introduced to divide by scope, complexity, and/or purpose. Hierarchy is</td>
</tr>
<tr>
<td></td>
<td>not describing power relationships.</td>
</tr>
</tbody>
</table>

*Information transparency*

Agile development teams provide transparency by making their backlogs public and providing information regarding their capacity, such as by monitoring the velocity\(^9\). As an organizational design principle, information transparency brings this to the entire organization. The goal is for all the work and metrics to be available to everyone all the time. This is required to enable self-organizing at a higher level. Without this information, local decisions can be made that harm the overall situation.

*Self-organization*

Self-organization can be achieved when individuals and teams possess a certain level of decision-making authority. This granted authority enables the nimble navigation to achieve a shared vision and concrete shared targets. In turn, this shared vision and targets define the scope of existence and forms boundaries for operations. Some forms of boundaries represent an important element for enabling self-organization. The boundary should match the team’s resources. The probability of self-organizing dramatically increases if the team is fully self-contained—that is, if it possesses all the resources necessary to meet its goals.

*Team-based structure*

An organization is structured based on teams and their purpose and accountabilities, not on individuals and their tasks to complete. A team is considered a superior structuring element, as teams can be formed such that they can accomplish their objectives with minimum coordination overhead. Cross-functional teams, just like cross-disciplined engineering teams, enable

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\(^9\) Velocity is a measure of the amount of work a team, or circle, can accomplish during a specific time based on historical data. Velocity is the key metric in the Scrum framework.
parallel rather than sequential work. This enables improvements in speed, cycle
time, and time to market.

Organizational cadence

Time-boxing represents a fundamental element in agile development. Development is performed in iterations and increments of a fixed length. This creates a certain cadence—a rhythm—for events in an organization. The organization knows when decisions of different magnitude are made. When adapted to everything the organization does, this simplifies the work-life significantly. This provides clarity regarding when and where, and by which team, certain decisions are made.

Learning is incorporated

The practice of continuously reflecting on and improving the way of working is incorporated in the organization’s processes and practices. This leads to an experimental culture focusing not just on product and business improvements, but also on processes and practices. Dynamically defining and redefining the manner of working also represents a fundamental characteristic of self-organization.

Hierarchy by scope

Traditional organization structures employ a hierarchy to define individuals’ power relationship. Somebody always possesses authority over somebody else. The principle of hierarchy by scope defines the hierarchy according to the scope, or complexity, of a job to be performed. An example from the product development is a hierarchy of development team, roadmap, and portfolio. Each level in this hierarchy is aware of the others’ existence, but they focus on the level of their own accountability. The nested structure of teams enables full alignment of direction in an organization. The higher team in the hierarchy defines the direction for the teams lower in the hierarchy. However, all the teams retain full authority in their own scope. They are accountable for deciding how to reach the defined direction.

6.6.3 Matching and redirecting

We begin by matching the theory from the outset of the study with the empirical insights gathered during the study. The study focused on a significant bottom-up organizational change. The hypothesis was that this can be successfully initiated without an up-front plan, and further steering can be accomplished without managing the transformation from the top. The other hypothesis under the empirical test was that the team-based organization model functions as a mechanism to help organization scale agile thinking beyond product development.
The first hypothesis is particularly interesting to discuss. The transformation began with little planning. The fact that, after less than two years, the team-based organization model was officially announced as the new organizational structure offers evidence of a successful transformation being possible without considerable pre-planning. Of course, numerous matters affected the end-results, such as the starting point, case organization’s history, the people involved, and so on, but in this particular case, significant bottom-up organizational change was possible. However, the study also identified limitations in the bottom-up change initiatives. Isolating an independent value stream for a bottom-up initiative in a corporation was more difficult than expected. This resulted in a situation wherein, from the individual perspective, the new structure was one way to manage work, but another, more conventional work management system remained in place.

The second hypothesis proved to be correct from the beginning of the study. People consistently reported that their understanding of the entire organization improved via the transparency of work and frequent synchronization meetings among circles. Similarly, increased awareness was a commonly reported benefit of agile development in the product development function. It further became visible that, despite the improved understanding, certain areas were not fully understood. A continuous theme appeared wherein the transparency and the alignment required relentless work. However, the above-mentioned two parallel work management systems affected the actual work as well, not just the transformation. The more conventional model exposed from outside the case organization was more of a top-down and reactive task management style. This blurred the idea of self-organizing. Managing and prioritizing one’s work at times felt chaotic.

In summary, we can state that the initial hypotheses matched the study’s results, except for the significant over-optimism of being able to isolate a fairly independent value stream. Difficulties in this area naturally slowed the overall transformation. This resulted in a need to redirect the research.

The original idea for the research was to study how the transformation affected the case organization, how the organization was functioning differently, how peoples’ thinking had changed, and whether the case organization was more responsive to change. One idea was also to scale the experiment to involve people outside the original case organization. Because the transformation difficulties became visible and the initial transformation was slower than expected, the focus of interest shifted. The focus instead centered more on why the change is so hard and why it felt slow among practitioners. The institutional theory seemed to match what the case organization was experiencing, and so the research focus shifted to the anchoring mechanisms that keep the environment stable and why it is difficult to go forward to fully embrace the new framework.
7. Third study: The bottom-up transformation

This chapter summarizes the third study. Here, the focus of the research moves to the transformation itself. The third study reflectively examines the transformation and seeks to explain why it proceeded as it did. This study aims at contributing to the overarching research by focusing on explaining a bottom-up agency’s potentials and limitations for transformation of this magnitude. The chapter begins with an introduction to the study’s context. Research questions are presented next, followed by the research design. The rest of the chapter concentrates on the results of the study and further discussion, respectively.

7.1 Introduction

The first study provided understanding regarding the team-based organization model’s theoretical feasibility for further improvements in an organization that has invested in implementing agile development methods. The second study, an action research study, tested this theory in practice by implementing a team-based organization structure in the case organization. While early benefits were identifiable, there remained a lack of energy needed to fully legitimize the new state and to make it the dominant mode of operations.

This third study, based on redirecting after the second study, was targeted at identifying the dynamics affecting the transformation and causing inertia. The goal was to capture the influence of the case organization’s external environment, extending the case definition from the first and the second study. A wider group of people was included for data gathering.

The main objective is to discover the possibly complicated mesh of interacting elements affecting people’s responses to varying triggers during the transformation. In doing so, the study hopes to identify suggestions to, on the one hand, strengthen the enforcing elements and, on the other hand, weaken or counter the hindering elements.
7.2 Research questions

Following the two-year period of transformation into a team-based organization structure, the core group members in the case organization felt that the results from the transformation so far were encouraging. The benefits of the new organizational model were clearly acknowledged among this group. However, it still seemed like a “new model” that had not yet fully established a state of being a “normal way of working.” As such, the third study was redirected to study this phenomenon. The original idea was to study the end-results of the new model, but since it was perceived as premature, a redirection was made, and it was decided to more closely examine the transformation itself. The objective was to determine what factors limit organization members from quickly adapting the new manner of working when it was seemingly agreed to be effective and the way forward. To guide this exploration of the dynamics at play, two research questions were formed:

RQ3.1. What are the boundary conditions and tensions in the transformation initiated by the bottom-up agency?

RQ3.2. What suggestions can be offered to affect these conditions and tensions in order to accelerate the transformation?

The first question seeks critical elements that influenced the organizational transformation and focuses on the specific characteristics of a bottom-up-initiated change. The aim is to identify both negative and positive elements. In addition, the objective is to determine how these elements affect each other and what the deeper interconnectedness of these elements is. In other words, this refers to how the larger environment affects how individuals experience and behave.

The second research question builds on the first one. When we better understand the forces affecting the inside of the organization, we can start seeking ways to weaken the negatively affecting forces and strengthen the positive forces. Just like for the first research question, for this one, a model of a more system-like approach is built to seek out enforcing cycles in how the forces affect each other. The entire environment is analyzed in a systematic manner to better understand the complexity of the organizational settings and, specifically, the context of a transformation from one state to another.

7.3 Research methods

7.3.1 Case: The organization and its surrounding stakeholders

As previously mentioned, the case for this third study differs from the first two studies. The organization defined by the value stream remains the same, but the case itself is enlarged to also contain the outside stakeholders (Figure 41). The goal is to model the interlinking elements, eventually explaining the inertia felt in the transformation and why, at least to some, it felt like reaching a point of
stagnation. Meanwhile, the new model for structuring was still in place, so something must explain this as well.

During the second research cycle, some hints regarding external mechanisms affecting behavior and the intensity and energy of transformation were identified. Furthermore, the core group described observed changes only at the individual or circle level, suggesting that larger-scope changes were not significant to this date. This redirected the research from the organization’s performance to the transformation, as well as the case definition to consider a larger context. For this reason, the case under study also covers the interface between the people within the original case organization and people and entities with whom they interact.

![Case definition for the third study.](image)

**Figure 41.** Case definition for the third study.

### 7.3.2 Data collection

The main research method involved the critical incident technique (section 4.3.3). Data was collected using open-ended individual interviews. The goal was to determine in retrospect how people have perceived the transformation period so far. Furthermore, the purpose is also to identify the possible long causal links behind certain habits and how these have affected the transformation’s speed and form. With the critical incident technique, the aim is to avoid interviewees presenting their opinions or results of their individual analysis. Instead, the goal is to determine what actually happened. In other words, the intention is to collect data from both how individuals felt they needed to act and what the reasonings were behind that belief. In doing so, the aim is to determine how individuals and the environment worked together to shape the transformation in the particular organization.
As previously mentioned, with 13 persons interviewed, the data was collected from a larger group of people compared to the previous two studies. The sampling was purposeful and sought to cover varying levels of engagement and influence in the transformation. The overall objective was to gain insights from the personal views of individuals from a wider group of people compared to the two former studies. With this data available, it was possible to take a system view to identify patterns and causal links in the wider organizational system. The interviewees included those who had been involved in the two other studies as well. This represents the group that was most active in driving the transformation. For this study, the aim was to determine how they experienced the transformation in contrast to the transformation’s overarching goal. It is also interesting to contrast how and why they perceived the transformation had gone as it had, as well as how other people describe it. The interviewees further include active participants—the early adopters. They helped to gain the early momentum for the transformation but were not actively involved in the development or in improving the model itself. The aim was to identify their motives and then later to compare their view against other views. Another distinctive group among the interviewees included practitioners that had joined the company later in the transformation. They were able to describe how it felt to join the organization without the exact knowledge of the past.

All interviews were open ended and conducted using an interview instrument presented in Appendix 5. The interviews began with two pilot interviews to test the instrument. Based on these interviews, minor modifications were made, mainly to clarify that the scope of the phenomenon under focus covers the entire organization and the change during the past two years. A high-level timeline was added to the instructions to help the interviewees recall the time period (i.e. using the stimulated recall technique). The rest of the interviews were conducted following the same instrument. Individual interviews took 10 to 40 minutes. All interviews were recorded and then later transcribed for analysis. One interview suffered from technical difficulties, and only a partial recording and transcript is available together with author’s notes. Table 43 summarizes the amount of data collected from the interviews. The two main questions to frame the interviews were presented as follows:

Think of an incident that supported or has been helpful for the team-based organization transformation.

Think of an incident that decayed or has been harmful for the team-based organization transformation.
Furthermore, interviewees were provided a definition of an incident as an interaction between two or more actors. An actor was defined as an individual or a specific group of people. For an interaction to qualify as a critical incident, it must, at least to a certain degree, vary from the routine. The interviewees were also instructed that they could include a single incident or a recurring pattern, such as a certain behavior or response repeating in similar situations. Follow-up questions were planned to cover enough aspects of the incidents and to enable cross-incident analysis.

Table 43. Summary of individual interview data.

<table>
<thead>
<tr>
<th>Interviewee #</th>
<th>Time involved with the model (years)</th>
<th>Member of # circles</th>
<th>Length of the interview (minutes)</th>
<th>Words in the transcript</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>4</td>
<td>31</td>
<td>3,215</td>
</tr>
<tr>
<td>2</td>
<td>2</td>
<td>5</td>
<td>40</td>
<td>3,798</td>
</tr>
<tr>
<td>3</td>
<td>2</td>
<td>6</td>
<td>23</td>
<td>2,220</td>
</tr>
<tr>
<td>4</td>
<td>2</td>
<td>3</td>
<td>17</td>
<td>1,668</td>
</tr>
<tr>
<td>5</td>
<td>2</td>
<td>2</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>6</td>
<td>2</td>
<td>3</td>
<td>10</td>
<td>1,229</td>
</tr>
<tr>
<td>7</td>
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<td>2</td>
<td>30</td>
<td>2,525</td>
</tr>
<tr>
<td>8</td>
<td>1</td>
<td>2</td>
<td>27</td>
<td>2,401</td>
</tr>
<tr>
<td>9</td>
<td>1</td>
<td>2</td>
<td>23</td>
<td>2,702</td>
</tr>
<tr>
<td>10</td>
<td>0.5</td>
<td>2</td>
<td>15</td>
<td>2,652</td>
</tr>
<tr>
<td>11</td>
<td>0.5</td>
<td>1</td>
<td>15</td>
<td>1,934</td>
</tr>
<tr>
<td>12</td>
<td>0.5</td>
<td>1</td>
<td>11</td>
<td>1,426</td>
</tr>
<tr>
<td>13</td>
<td>0.5</td>
<td>2</td>
<td>21</td>
<td>2,426</td>
</tr>
</tbody>
</table>

7.3.3 Data analysis

A transcript was written for each interview. Transcripts were utilized as the input for the analysis, which was performed using the ATLAS.ti qualitative analysis tool. The analysis process consisted of identifying incident parameters, forming incidents, and grouping incidents into categories. Figure 42 illustrates the data analysis process. The analysis began with open coding of the individual interview transcripts. Interesting parts of the transcript were coded (i.e. a combination of a selected quote and a describing name for it). Coding the data from critical incident technique interviews was accomplished following the guidelines and principles of grounded theory (section 4.2.4) as proposed by Chell and Pittaway (1998). In that, the analysis followed a similar process to the previous two studies.
Figure 42. Overview of data analysis in study 3.

The coding was driven by the idea of identifying an incident, as in most cases, the interviewee data was not readily structured to simply list individual incidents. An incident should have contained the following parameters:

- Background
- Who
- What
- Evaluation (why good/bad)
- Consequence

When a quote was found in the transcript describing a parameter, it was coded using a name pattern:

[NAME OF THE INTERVIEWEE]:[INCIDENT NUMBER]:[PARAMETER]:[DESCRIBING TEXT]

For example,

Mark:1:What:Circles started having workshops
Even during this initial open coding, when similarities were identified, a more
generic name for the code was created, and an earlier code was renamed
accordingly. This process is highly straightforward with the analysis tool
allowing easy follow-up analysis.

Next, the individual codes were grouped into a new, combining code. The
combining codes represented an incident using a code pattern:

# [NAME OF THE INTERVIEWEE]: [INCIDENT NUMBER]: [DESCRIBING TEXT]

For example,

# Mark:1: Workshops leading to focused tactical meetings

Numerous incidents completely lacked some of the parameters, but for most, if
not present in the interview data, the author was able to fill in the missing data
with reasonable confidence. For example, in most cases, it was possible to know
which circle or circle member was meant simply due to the fact that the author
had been present in the situation. If in doubt as to whether to include a certain
part of the interviewees’ story as an incident, the decision was made based on
simple criteria (general aim is grounded on the second study’s secondary
analysis, section 6.6.2 and Appendix 5):

- Relevance of the incident to the general aim
- Extent of the effect on the general aim (significant advancing or
  limiting impact)

Following the individual incident identification, the data consisted of 76
incidents. All were analyzed together during the second stage of the analysis. At
this stage, similarities between incidents were grouped together using the
ATLAS.ti software’s capabilities of coloring codes for different meanings and
drawing analytical displays as networks. A number of incidents were grouped
together as an incident category recorded as yet another new code, which was
given a color to separate them from the earlier codes. An incident category
combined 2–5 individual incidents. An incident category was provided a more
abstract name to describe a collection of incidents that somehow logically
belong “together.” The overall coding process is illustrated with real data
(names changed) in Figure 43:
Third study: The bottom-up transformation

From the analysis, 17 incident categories emerged (Table 44). Because we were interested in what was affecting the transformation, the incident categories were evaluated to produce either an advancing or limiting impact. The incident categories were then employed to create a cause-effect diagram based on the guidelines from Senge (2006). Some of the incidents played a role in the diagram individually, without belonging to a category. This diagram represented the primary analytical display (Miles, et al., 2014) for the third study.
Table 44. Incident categories.

<table>
<thead>
<tr>
<th>Incident category</th>
<th>Incidents</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Advancing Impact</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Separated workshops</td>
<td>5</td>
<td>Separating workshops from the Tactical Meetings for working on projects improved effectiveness and outcomes. This was further increased by not having them in sequence.</td>
</tr>
<tr>
<td>Tools and training support</td>
<td>5</td>
<td>Transparency is enabled with tools. Providing the transparency for one’s own work must be made effortless; otherwise, it is seen as an extra burden.</td>
</tr>
<tr>
<td>Motivation</td>
<td>4</td>
<td>Transparency and clarity of the organizational structure were experienced as motivating by members of the organization.</td>
</tr>
<tr>
<td>Meeting efficiency</td>
<td>3</td>
<td>With a clear agenda and focused scope, the meetings were experienced as more effective.</td>
</tr>
<tr>
<td>Clarity from the model</td>
<td>3</td>
<td>Accountabilities defined as roles. Seeing individuals acting in these roles provides clarity for how the organization works.</td>
</tr>
<tr>
<td>Meeting cadence</td>
<td>3</td>
<td>Frequent, regular, and pre-scheduled meetings with focused scope enables quick processing of issues requiring knowledge from multiple perspectives.</td>
</tr>
<tr>
<td>Prioritization and transparency</td>
<td>3</td>
<td>While still considered difficult, the tools and practices provided means for transparency and prioritization.</td>
</tr>
<tr>
<td>Cook book, long-term improvement</td>
<td>2</td>
<td>Taking the time to improve ways of processing frequent requests frees time for other matters.</td>
</tr>
<tr>
<td>Ease of onboarding</td>
<td>2</td>
<td>Onboarding of two new members was straightforward because of role definitions and meetings enforcing equality.</td>
</tr>
<tr>
<td><strong>Limiting Impact</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Unclear distributed accountability</td>
<td>7</td>
<td>When accountabilities are ambiguous, executing large initiatives without central coordination becomes difficult.</td>
</tr>
<tr>
<td>Difficulties in co-working between circles</td>
<td>6</td>
<td>Difficulties included communication and coordination between the circles.</td>
</tr>
<tr>
<td>Old habits entering</td>
<td>6</td>
<td>Difficult initiatives or triggers coming by external influence were easily processed according to old habits.</td>
</tr>
<tr>
<td>Need for new skills</td>
<td>5</td>
<td>Working within the new model required skills for self-organization, collaboration and coworking.</td>
</tr>
<tr>
<td>External influence</td>
<td>5</td>
<td>The case organization was influenced by individuals and entities outside. This influence did not follow the new team-based organization model and its practices.</td>
</tr>
<tr>
<td>Difficulties with large initiatives</td>
<td>4</td>
<td>Larger initiatives, especially ones requiring coordination between circles, were difficult.</td>
</tr>
<tr>
<td>Training is not enough</td>
<td>4</td>
<td>Simple training is not enough, but continuous support and enforcement is needed on the job.</td>
</tr>
<tr>
<td>Unclear strategy</td>
<td>3</td>
<td>Without shared understanding of the overall strategy, prioritization is difficult at individual, circle, and organizational levels.</td>
</tr>
</tbody>
</table>

The cause-effect diagram revealed two distinct areas of forces: the local micro level and the wider corporation level. While presuming that the transformation inertia was fully caused from outside, the research analysis revealed a significant role played by local logics. The key findings are presented in detail in the next section.
7.4 Results

The final study intended to identify the elements that affected the transformation. Table 45 summarizes the key findings of the third study. The main discovery was that a number of institutional logics affect how individuals respond in a given situation. These logics are both local and external to the case organization. The cause-effect diagram presenting the interplay of multiple institutional logics is depicted in Figure 44:

![Figure 44. The cause-effect diagram regarding the constellation of institutional logics.](image)

Table 45. Summary of key findings.

<table>
<thead>
<tr>
<th>Finding</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Local benefits achieved by the new model</td>
<td>Members of the case organization found local benefits from the new model, such as effective meetings and clarity of organizational structure. This was considered motivating and helped to keep the transformation momentum.</td>
</tr>
<tr>
<td>Difficulties with the new logic enforcing the old logic</td>
<td>Certain initiatives were difficult to execute according to the new model. An example is larger initiatives requiring efforts from multiple circles. This easily led to reverting to the old way of working and shortcutting the new model.</td>
</tr>
<tr>
<td>Requests based on foreign logics are answered following the old logic</td>
<td>Organization was affected by external stakeholders. Responding to requests from these stakeholders often did not follow the new organizing model. This in turn weakened the visibility of the new model causing inertia to legitimize the new model and slowing down the learning.</td>
</tr>
</tbody>
</table>

7.4.1 Key findings: Institutional logics define the transformation

Local benefits achieved by the new model

As covered in the second study, participants frequently mentioned several benefits from the new model. Before the action research, the company had
Third study: The bottom-up transformation

defined a few cross-functional groups with recurring meetings. However, they were found to suffer from multiple symptoms, such as ineffectiveness and lack of clarity. Meeting effectiveness comprised the most frequently mentioned benefit of adapting a concrete framework and defined practices. A fixed cadence for face-to-face meetings with a known focus engendered both improved understanding of the situation and faster decision making. A clear agenda and a facilitator forcing adherence to just the status synchronization kept meetings focused. Cross-functional representatives in a circle were found to aid in better information, and for the team to truly benefit from the cross-functional feature, most of the teams picked up a practice of team workshop on a weekly basis. The workshops became highly effective with the pre-defined agenda.

[After separate workshops], our tactical meetings keep the timebox extremely well, and there is no-longer slippage.

I believe [that, through the workshop practice,] the transparency to work has increased. Everyone knows where we are going, what is going to be handled in the workshop, and who is doing the preparation for it.

Some projects are such that it requires two or three people together to effectively move forward. Because of these, the workshops have been a natural...

[A separate workshop] allows thinking in advance. Everyone can prepare the project, and in the workshop, we are ready to get it forward.

The tools that supported practicing the framework and the initial internal training were also mentioned several times as producing significant positive effects on the local adaptation level:

[Tools] help in that you don’t have to ask whether something is ready …. because I need it before I can continue with my own work.

Roles were visible, easily accessible because there was continuously a need to review them ... to have easily a tool available to which we recorded the checks, tensions and projects in tactical meetings. It was positive.

Another category of benefits stemmed from the explicit structure. When the accountabilities were well defined, the explicit structure increased motivation. In contrast, when some accountabilities remained unclear, this caused confusion. Specific evidence of this included the incident of bringing two new employees to the organization and immediately involving them as equal team members with explicitly defined accountabilities and authorities:

Because we had these practices. It was easy for them [new employees] to join and get to work.

The structure, supporting tools, and transparency together provided the means for prioritization. The prioritization was still mentioned as difficult, but at least
there were tools and practices for performing it. Tools also provided transparency regarding other people's priorities.

*Difficulties with the new logic enforcing the old logic*

Some types of work were found to be difficult to perform following the new model. The most significant included the incapability of managing larger initiatives requiring prolonged activity from multiple roles and specifically from multiple teams. Cross-team collaboration was experienced to be especially challenging, as was understanding the team priorities in the same way inside a team.

If there is a larger initiative, and tasks are shared, it may cross the boundaries and is possibly not concerning only one circle, but needs to go to two more circles. Then, I wonder, who has the overall accountability? Plus, does everyone understand and prioritize their work based on the fact that several people are dependent on this?

It was mentioned that some old informal communication mechanisms did not work as effectively as earlier. Matters were not discussed in the coffee room or hallways as much as in the past. This contradicts several testimonies of experiencing better understanding of how the organization works and what is going on. The difference here likely concerns the level of an individual's involvement in the team-based structure. Nevertheless, it is important to notice that some of the previous working habits were jeopardized when the new logic was introduced.

[Before the new model,] you were able to hear something as a bystander. Now, people discuss issues in conference rooms, and you do not hear things accidentally anymore.

However, several interviewees referred to the lack of skills in the framework as the source of the difficulties. The internal training was found to be helpful and energizing, but practical skills needed to apply the framework in actual work remained lacking. In these occasions, it was also observed that the discipline to stick to the framework was missing, and leadership in terms of enforcement was required.

Well, one thing that has bothered me, is something that I have stumbled on several times, is that the transparency there is still not sufficient.

While the skills were missing for operative work, this was even more evident for working with the organization structure. The framework calls for everyone's participation in designing the organization in terms of role and team definitions, but this was found to be particularly difficult. This was already mentioned during the second study, but the challenge still existed at the end of the action research period.
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While the hierarchical command-and-control behavior was not present in the old institutional logic either, there were incidents when a manager worked too much as a problem solver, taking too many projects for himself without explicit role assignment. Learning, and out-learning, was needed in various ways. Four respondents described critical incidents that demonstrated reverting to old habits.

Requests based on the foreign logic are answered using the old logic

Half of the interviewees mentioned external influence acting as a slowing element for the transformation. External influence was caused by some parts of the corporation outside the case organization. These persons and entities acted based on a different institutional logic that, put simply, can be named corporation logic (section 3.1.3). When this control resulted in activities and initiatives that did not follow the current internal priorities, this blurred the understanding of the organization’s strategy and made the prioritization difficult or even irrational.

The anchor circle is quite a lot directed by [eternal stakeholders]. We are not [in the anchor circle] focusing on our organization or our operation, to which we maybe, or to which for sure we should. As a consequence, we have too few [projects], and those that we have are too insignificant

[The reason why we have not advanced in our model] ... in my opinion has been the pressure from X [external entity], new directions have led to a confusion about what we are supposed to do here .... There are either too many roles, or you do work that is not recorded as a role.

Some things come, and they over-run everything, while at the end of the day, they do not feel to help the organization’s goals or those things that we should develop.

It feels that, quite often, issues that get processed and are prioritized over everything else are not always decided by the teams.

The lack of understanding regarding the strategy represented a clear outcome of the external pressure mentioned by several interviewees. Without shared understanding of the strategy, it was difficult to prioritize the projects, or else individuals prioritized them based on different criteria.

We are missing the kind of higher-level strategy to which we can reflect our own operation. In my mind, it should be split into parts, I don’t know if it should be, at least at circle level, but could it be even at individual level.

In my opinion, self-organizing does not happen, and accountability is missing if the objectives are different [among individuals].

The downside is that, when we are kind of missing that [strategy,] then we do all kinds of things without questioning whether these are important, and time is spent, but I’m not sure at all whether the circle’s objectives are met.
A thing limiting circles' operation, meaning operation of people in the circles, is the lack of clear strategy or poor communication of it. If that [cascading the strategy through circle hierarchy] is missing, then prioritization is almost impossible.

Often, these requests were processed following the corporation logic and using the old habits, as there was no legitimized means to handle them in the team-based organization model. This further strengthened this involvement's effect. Some persons occasionally reverted to old habits and acted outside their defined roles or worked without transparency. This caused inertia for the new institutional logic to become clearly visible and dominating.

They [external stakeholders] do not ask the [specific] team. They ask the person directly, and the person starts to work on it. I claim that 80% of that work is not advancing the team's purpose .... This is completely damaging the team's operation, because an individual sees this initiative as more important than team’s objectives .... An individual also thinks that, ok, this is benefiting my career to take responsibility and to do this as an individual.

Individual tasks from a corporate initiative can be assigned directly to an individual for some reason through some kind of short-cut, and it is not respecting our role structure .... As a result, strategy changes were communicated to individuals and priority changes happened more or less without thinking or communicating through our structures where strategy should be picked from.

All kinds of meetings were introduced, ad-hoc meetings, which maybe came from upper ranks, and then they were not present in [agreed organizational] meetings. This started to be quite common; that was the biggest reason [why some practices started to decline].

Because this hidden logic was driving the behavior in parallel to the new team-based organization logic, the manner of organizing became blurred from time to time, causing delays, especially in more demanding initiatives, which were already identified as challenging. When the organization struggled with larger initiatives or was not clear on accountabilities, this subsequently caused even more external influences. The confusion regarding priorities and strategies, together with working on issues that were not made transparent, enforced the role of the external stakeholders, which, in turn, increased the effect of old logic. As one interviewee proposed,

At least I see it that the anchor circle should work as some kind of buffer between [external stakeholders] and our organization.
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7.5 Discussion

The third and final study focused on the conditions that led to the situation where the transformation was felt to be struggling to move forward. The case under study was enlarged to also contain the interfaces to the outside of the case organization. To identify individuals’ justifications or attributions, a critical incident technique was employed with individual interviews for data gathering. Based on the gathered incidents and further analysis, answers to the research questions can be presented.

Advancing and limiting forces in the transformation

In answer to RQ3.1, this study identified several local benefits from the transformation as the main advancing condition for the change. However, the existing institutional logics were found to place several limitations on transformation, causing significant inertia. Participants experienced several benefits from the new framework, such as meeting effectiveness, increased motivation from the clarity and transparency, and the effect of working as a team, such as during the reoccurring workshops. This represented the key driver for keeping up the change momentum despite the numerous hurdles. In parallel to advancing elements, several limiting elements were also identified. The impact of several competing institutional logics guiding employees’ actions were discovered. The first concerned the old way of working as a logic. This involved thinking about the organization as divided per functions, reverting to silent accountabilities of persons based on their history, and focusing on personal objectives first. This manifested in, for example, being unclear regarding the distributed accountability and struggling with larger, more complicated tasks. Beyond this, during the period of the research, another significant change affected the case company—namely, being more intensively integrated within the corporation it was part of. In turn, this introduced new controlling mechanisms that followed a different institutional logic. These competing logics together slowed down the transformation without much realization or attempt to address them.

Suggestions to accelerate the transformation

By analyzing the data regarding what was limiting the transformation as well as the answer to RQ3.1, we can answer RQ3.2 with several suggestions for how the bottom-up transformation can be accelerated. The model itself possesses elements for local, or micro-level, behavior change. However, this requires the model to be followed. The more it is followed, the more opportunities there are to drive the transformation. It forms an enforcing cycle, but it requires discipline and energy. The transformation can potentially be accelerated by making these benefits more visible.

The case organization members did not recognize the effect of competing logics. In essence, the slowing pace of the transformation was interpreted as
lacking buy-in by the people or as general resistance to change. In actuality, the reason involved the lack of skills in working within the model for more challenging issues, and not understanding how to answer requests coming based on the corporation logic using the new team-based organization logic. In both of these cases, the natural manner of responding was based on the existing local logic. The more this happened, the slower it made the entrance of the new team-based organization logic. Potential for acceleration can be found through paying attention to revealing the competing institutional logics from very early on. The earlier one is aware of these, the more opportunities one has for reframing the new logic to address this.

7.5.1 Matching and redirecting

The second study raised the possibility that institutional theory offers insights into why people felt the transformation energy was low and the velocity of organizational change was slowing down. The theory was that the existing institutional logic in the larger corporation hindered people in changing from one mindset to a new one in a dominant manner. The third study supported this hypothesis, but it also revealed the role of local logic. The local logic both slowed the new logic’s legitimization and also enforced the impact of corporation logic. These findings encourage further research regarding the constellation of institutional logics as a significant force in bottom-up-initiated transformations, as well as how an increased understanding of this can accelerate similar transformations. This is discussed in greater detail in the final two chapters, and suggestions for further research are presented in detail in section 10.2.
8. Synthesis of the key findings

This chapter examines the three studies together and offers a theoretical interpretation of the research and its findings. In doing so, this chapter presents a linkage between the conducted empirical research and the theoretical framework presented in Chapter 3. The theoretical framework that emerged during the systematic combining research consists of theoretical perspectives of institutional theory, organizational change, and organizational structure.

8.1 Significant bottom-up change is possible with limitations

This research indicates that the team-based organization model offers one possible answer for how an organization can scale agile thinking at the organizational level. Furthermore, the research indicates that even significant bottom-up change in an organization is possible. However, this was found to be a rather complex endeavor. During the research, the case organization changed its model for organizational structure from the conventional divisional model to a novel, organic, team-based model. This transformation was steered in a bottom-up, on-the-job change fashion instead of following a planned change or even a conventional emergent change approach. A state was subsequently reached wherein the new organizing model was considered the new way of working, but there remained competing institutional logics partially guiding the daily work and causing inertia for legitimizing the manner of organizing. The realization of the constellation of competing institutional logics opens a set of tools to address this inertia. The tools are discussed when presenting a more detailed discussion and theoretical generalization in the following chapter.

The first study comprised a retrospective look at the case organization’s eight-year history with agile development. This study focused on acquiring an understanding of the case organization’s state of practice and validating the hypothesis of using the team-based organization model as a vehicle of inquiry to find a better match for organizing with agile development. The research methods included individual and focus-group interviews using a stimulated recall interview technique. The key findings were that agile development initiated a larger organizational change journey and the team-based organization model’s feasibility as a direction for continuing the journey. The study also identified three enablers for the case organization’s change journey:
Synthesis of the key findings

As a finding from the first study, the triggering of larger organizational change supports the earlier literature, which identified the need for change in other functions as the main barrier for harnessing agile development’s full benefits. Furthermore, the first study identified the change to proceed in waves. In other words, when the change in one organizational area reached a certain maturity, a new area was identified to be affected by that change. The results confirmed that the case organization was no exception, as it had experienced a need for a larger change, and the results justified continuing to experiment with the team-based organization model. The team-based model was recognized as more naturally fitting with the actual value delivery compared to the conventional divisional-line organization model. Initially, a value stream model of the case organization was created during the first study. This value stream model was used to create the initial team formation, but the team structure—governance of the organization—has meant to be evolving. The team-based organization represents an organic model of organizing.

The second study comprised action research in the same organization. The case under study was defined based on the above-mentioned value stream model. The initial approach was inspired by the Holacracy framework. In other words, the theoretical model of an organic organizing model was empirically tested using the Holacracy framework as a guideline for implementation. The study consisted of four action research cycles with interventions. The main objective was to experiment with the team-based organization model in practice and to determine whether it is possible to abandon the conventional organizational change models and instead initiate and steer such a transformation in an on-the-job, bottom-up fashion. The three key findings were that change management is embedded in the model, existing interfaces cause inertia, and overall awareness of value creation increased. All in all, the experiment was considered successful. It helped members of the organization to further improve their understanding of value creation in the organization, and especially to shift their focus toward longer-term value creation. This was helped by gaining a more valid understanding of the organization’s real capacity through making the value creation transparent. The organizing framework was further found to provide tools and practices for the transformation itself. Combined, the organizing model under inquiry contains elements for continuous improvements and can be seen as naturally offering tools for bottom-up change. After roughly two years of practicing the new model, it was officially announced as the new operating model. However, at that time, it was still considered difficult to move further forward, and this initiated a redirection in the research, with the focus instead centering on the forces and dynamics affecting the transformation rather than the model itself. Institutional theory thus became the main theoretical tool to understand the dynamics in the change.

The third study widened the case definition to include elements outside the original case organization. To gain deeper insights into how people experienced the understanding of the value stream, the existence of the informal organizational structure, and the role of change management.
and felt about the transformation, a series of individual interviews were conducted. Interviewees included people from varying roles and activity levels in the transformation in order to gain a wider perspective of the phenomenon. The interviews were conducted using the critical incident technique. The study’s data-analysis phase revealed a constellation of institutional logics affecting how people respond in a given situation. The main logics considered in the third study included the previous local manner of working, the corporation logic, and the introduced new way of organizing. The way these together affect employees’ behavior was identified as the main component creating inertia in the transformation. This subsequently provided a more detailed understanding regarding the phenomenon first discovered during the second study. The finding of competing institutional logics is in line with the recent literature on institutional theory and the role of bottom-up agency in institutional change. The literature on the subject remains limited, and this case provides much needed data.

In summary, this series of studies provides a highly comprehensive account of a large-scale transformation triggered by a change in product development to practice agile methods as a development process. The systematic combining approach to research allowed the real-life discoveries and theoretical studies to be conducted in parallel. In turn, this approach led to a thorough explanation of the bottom-up transformation using institutional theory as the main theoretical tool. Together, the real-life example combined with the theoretical framework built on institutional theory provided sound evidence regarding the feasibility of utilizing the team-based organization model in transformations aiming to scale agile thinking in an organization. Furthermore, the research also revealed the possibilities and limitations of the bottom-up agency acting as a driver for such a transformation. This finding can be seen as generally applicable and, as such, of value to a wide audience. The following chapter answers the main research questions and discusses opportunities for generalization in greater detail.
The objective of the research was to improve the current understanding regarding how a bottom-up agency drives a change toward agile thinking in an organization. This change was initiated after the product development function in the case organization had organized into self-organizing teams. Self-organizing teams represent a central organizing principle found in agile development methods. The aim was to change the model of organizational structure in the entire case organization into one based on self-organizing teams. Based on the research, a self-organizing team-based organization model comprises a natural continuum and functions as a vehicle for agile thinking to unfold in an organization. A change in this direction was observed to be possible in a bottom-up fashion through embedded agency. However, significant difficulties were identified each time the scope of the change crossed existing organizational boundaries. Institutional logics were used to understand both the potentials and limitations of bottom-up organizational change. This research features three studies regarding the role of bottom-up agency in driving institutional change. The results from individual studies were presented in sections 5.4, 6.5, and 7.4, respectively, as well as the synthesis of the key findings in the previous chapter. This chapter further discusses the results of the research, beginning by forming an answer to the overall research problem. A three-layer framework for bottom-up institutional change is thus proposed. Answers to each research question follows as the justifications to the proposed framework. Next, the implications for managing organizational transformations are discussed in the format of propositions offering opportunities for generalization. The chapter ends with an evaluation of the research and the methods employed in the process.

9.1 Theoretical implications

9.1.1 The bottom-up agency in driving institutional change

This research indicates that the team-based organization model can be employed as a framework for adapting organizing principles of agile development to the organizational level, and thus acts as a path for scaling agile thinking. Furthermore, the results confirm that adapting the framework can occur in a bottom-up fashion without much up-front preparations if specific conditions in the environment are available. However, the analysis further revealed that existing institutional logics define the potentials and limitations
of the bottom-up change. This provides greater depth to commonly stated barriers for scaling agile thinking, such as a general resistance and inability to change the existing organizational culture. As the main contribution, a three-layer model for bottom-up institutional change is formed: an individual, a specific organization, and a field layer (Figure 45). The framework describes how an individual agency can lead to macro-level institutional changes. The layers are adapted from the existing literature (Reay, et al., 2006, p. 993; Reay, et al., 2017, p. 1064; Greenwood, et al., 2002, p. 60). Summarizing, the model indicates how even an individual from and within a single organization can trigger a change that can be defined as an institutional change, eventually affecting a complete field or industry. As such, this research supports the new directions of institutional theory development in that it possesses considerable potential for describing an organizational change, not just in its original target of explaining why organizations are resembling each other and remain seemingly static (Palthe, 2014).

The first layer of the model presents how an individual’s dissatisfaction with the current state of affairs or discovery of a better method for achieving the objectives and goals can initiate change in an organization. In this case, the author utilized his embeddedness within the case organization to inject the new model at the outset, manifesting how, through agency, the organizational participants do not always conform to conventional patterns (Scott, 2014). Using the history with agile product development, the ideas from the team-based organization model could be introduced via the leadership team, which already possessed a steady cadence for cross-functional meetings. Some other existing meetings were transformed into the format of the team-based organization model, and Holacracy framework specifically. In turn, this fits the new way with the existing prevailing system. In other words, the idea of a new institutional logic was introduced while working within the existing structures. After initial success from these experiments, members of the case organization started additional teams based on the proven value of their use. Along the way, small victories were also achieved and identified. Examples include the creation of the constitution and its approval by the managing director, announcing the new model as a formal structure to all employees, and the use of the new model as a reference in official audits. These were key elements in creating the initial change momentum.

Originally, institutional theory explained how, once established, institutional activities become highly resistant to change and change is only driven by significant exogenous force (Reay, et al., 2006). When considering the role of human agency in institutional change, it has been argued that an individual’s embeddedness constitutes a constraining factor for her ability to initiate change. Based on a four-year case study, Reay and colleagues (2006) challenged and turned this claim upside-down by revealing that an individual’s embeddedness provides a basis for taking action rather than restricting it. Reay and Hinings (2009) present an account of how individual agency can trigger significant changes in an organization despite holding neither an authority nor a higher-
status position. The research presented in this thesis strengthens this view of embeddedness as an enabler of the individual agency to drive change.

Based on the analysis, three institutional logics formed a constellation that significantly affected the legitimization of the team-based organization model in the case organization: the new team-based organization logic, the previous local logic, and the corporation logic. This remains in line with recent literature suggesting that a number of logics are interpreted by agency rather than a single dominant logic (Reay & Hinings, 2009; Goodrick & Reay, 2011; Lawrence, et al., 2011; Ocasio, et al., 2017; Reay, et al., 2017). The logics are introduced in greater detail in section 3.1.3.

**Figure 45.** The model for individual agency in a bottom-up institutional change (Reay, et al., 2006, p. 993; Reay, et al., 2017, p. 1064; Greenwood, et al., 2002, p. 60).
The second layer in the framework describes the process of revealing, analyzing, and reframing the constellation of institutional logics in a specific organization. Locally, the members of the case organization were working within the new team-based organization logic. When cooperating with stakeholders outside the case organization, however, the response and behavior largely followed the previous local logic, which was characterized with reactive responses. There was not enough skill or experience with the team-based organization model for members of the case organization to be capable of answering these requests while following the new logic. Making matters more difficult, contrary to the team-based organization model, the previous local logic did not enforce transparency, and thus, this behavior was also difficult to observe. To fully legitimize the new logic, it needs to be anchored to formal artefacts and symbols in the organization. In the case organization, this was partially achieved, but not fully legitimized due the above-mentioned challenges at the organizational boundary. Legitimizing the manner of working in one or a few companies has a chance to trigger a macro-level institutional change, such as in a given field.

The ideas of Reay et al. (Reay, et al., 2017) resonate with the challenges identified in the case research. They suggest that an organization can legitimize the new way by understanding the previously dominant institutional logics and reframing the new logic to fit the context. The difference between the new way and the previous, possibly hidden logics must be understood and shared by the members of the organization. With this information available, members of the organization must create an understanding regarding where the different institutional logics conflict. Everything the members of the organization do must be reframed to follow the new logic, replacing the old ones as much as possible. However, different logics are not competing, but rather interact together to form how individuals and collectives respond in different situations. This research thus provides a partial answer to how an organization seeks settlement within logics as an endogenous accomplishment (Schildt & Perkmann, 2017). In order to support the organizational change, it is beneficial to understand that the dynamics of the logics change not as a single event, but more in an evolutionary fashion.

At the time of writing this thesis, similar organizational transformations were already being undertaken elsewhere and published in articles, conferences, and books. In fact, the case organization’s change began following a published framework, Holacracy (Robertson, 2015), and it was further encouraged by the Teal organization model (Laloux, 2014).

The third layer in the framework presents the link to more conventional macro-level institutional change processes (Greenwood, et al., 2002). The process is introduced in greater detail in section 3.1.2. The theorization stage is critical for institutional change as it allows wider adaptation (Strang & Meyer, 1993; Greenwood, et al., 2002; Furusten, 2013). It can be argued that having similar narratives on new ways of organizing coming from multiple organizations is a manifestation of initial stages of a macro-level institutional change (pre-institutionalization), and frameworks such as Holacracy (Robertson, 2015) and Sociocracy (Rau & Koch-Gonzalez, 2018) already
comprise elements of the next stage (theorization). A similar history can be identified with agile development. It began with individuals, spread through entrepreneurial organizations, was made available by authors and consultants, and was finally considered the mainstream and de-facto manner of developing software and new products.

The presented framework offers a way to explain the significant role that bottom-up agency can play in macro-level institutional change. Here, the concepts of institutional logics and individual agency help us make sense of the process from individual actions to long-term institutional change (Zilber, 2013). However, it remains to be seen whether a breakthrough will be experienced in the manner of organizing at the institutional macro level.

9.1.2 Justification of the model

Implications of agile product development to organization

In answer to RQ1 regarding the implications of bottom-up adaptation of agile product development for the rest of the organization, the first study revealed that, since the case organization initially began agile development within a single development team, it had already experienced waves of organizational transitions during the past eight years. After the first development team, the change progressed to include the full product development function with multiple teams. Next, the portfolio and roadmap planning incorporating strategic and tactical planning was adapted to support the incremental and iterative development and planning. This wave further crossed an organizational boundary by more intensively including people from other functions—namely, product management and business development. The collaboration, however, remained largely focused on product development itself. Finally, the entire organization across all functions recognized a need for a change, and this wave, again crossing an organizational boundary, became the focus of this research. As the case study proceeded, however, it revealed yet another wave of change. The case organization was capable of delivering an end-to-end value, but it obviously possessed interfaces with the rest of the corporation. Once the case organization reached a certain maturity with the new model, misalignments at these interfaces became visible. This discovery is elaborated in greater depth later.

Based on this research, it can be concluded that agile development can be considered a bottom-up change in an organization. As the change proceeds, it will both create a need for change in other parts of the organization and also enable this change with increased clarity in local operations. The case study suggests that these waves follow the agile-scaling quadrants proposed earlier for categorizing scaling activities (Denning, 2016). Each time an organizational boundary is crossed, it creates a risk of reverting back to the old model or causing inertia that the organization cannot overcome. This has commonly been labelled a barrier for scaling agile thinking, and its main causes have been claimed to be general resistance and inability to change the organizational culture (Version One, 2016). In contrast, this research reveals that these
interpretations are too simplistic and difficult to act upon. A more in-depth explanation based on institutional theory and institutional logics is presented later when discussing the potentials and limitations of a bottom-up change.

**Fostering bottom-up change toward team-based organization unfolds agile thinking in the organization**

The RQ2 regarding how the bottom-up change to team-based organization was implemented to unfold agile thinking requires a two-part answer: First, the experimented team-based organization model supports the change itself. Second, the model answered challenges identified in scaling agile thinking in the case organization, and it was identified to follow the same organizing principles as agile development. Beginning by examining the bottom-up change, the Holacracy-inspired team-based organization model embeds elements for continuous improvements or transformations. Each role assignee’s duty of sensing tensions in the organization provides data as opportunities for improvements. The model further dedicates time to analyze and act on these opportunities in terms of tactical and, especially, governance meetings. These improvements to governance of the organization further increase the transparency, which provides more data. In turn, this data provides even more opportunities for members of the organization to identify further tensions. This closes an enforcing cycle that, once energized, keeps the transformation ongoing, as illustrated in Figure 46. Based on the enforcing cycle, we can claim that the model helps the organization become more responsive to changes.

While proven powerful, the action research did not rely solely on this self-improving characteristic of the model. In addition, the action research included supporting activities such as the guiding coalition and the support of an external coach. Involving people was based on voluntarism. People with genuine interests were welcomed to participate, and people with more hesitation could have their time without forcing them to make overly dramatic changes. Additionally, new experiments were designed based on the observed challenges rather than due to some prescribed model.

An important change-supporting practice is collaboration. The team-based organization model includes several elements to foster collaboration between members of the organization by making a network of people working together explicitly visible, which further accelerates the discovery of new manners of working. Collaboration thus represents an important component of institutional change (Phillips, et al., 2000; Lawrence, et al., 2002). Reay and Hinings (2009) offer examples of innovative solutions created by collaboration between the representatives of seemingly rivalrous institutional logics in the health care sector. A similar mechanism was identifiable in the case organization when seemingly competing sub-goals were negotiated in a network of cross-functional work teams in order to explore the manners of working. This could be key to helping solve the challenges experienced during the waves of change when crossing existing organizational boundaries.
For further analysis regarding how the model itself supports organizational change, we can examine the organizational change success factors from the existing literature (introduced in section 3.2.3) and reflect them in practices of the team-based organization model. Table 46 reveals that the team-based approach itself embeds extremely well the factors identified to support the success of organizational change (Lanning, 2001).

Table 46. Organizational change success factors (Lanning, 2001, p. 24) in contrast to the team-based organization.

<table>
<thead>
<tr>
<th>Success factors</th>
<th>Team-based organization</th>
</tr>
</thead>
<tbody>
<tr>
<td>Will</td>
<td></td>
</tr>
<tr>
<td>Effective communication</td>
<td>Frequent meetings focused on a shared purpose. Information is transparent to everyone.</td>
</tr>
<tr>
<td>Control and feedback</td>
<td>Peer feedback in teams. Continuous improvement practices embedded.</td>
</tr>
<tr>
<td>Vision and clear goals</td>
<td>The purpose of the organization is aligned and divided into purposes of individual teams and, eventually, individual roles.</td>
</tr>
<tr>
<td>Motivating people</td>
<td>The model provides intrinsic motivation through autonomy (self-organization), mastery (continuous improvement), and purpose (defined and aligned at various levels).</td>
</tr>
<tr>
<td>Connection to strategy</td>
<td>Everything is driving toward the purpose of the organization.</td>
</tr>
<tr>
<td>Leadership</td>
<td>Situational leadership: lead links, facilitators, secretaries, and everyone are leaders in their roles.</td>
</tr>
<tr>
<td>Ability</td>
<td></td>
</tr>
<tr>
<td>Purposeful participation</td>
<td>Clear, focused, and outcome-oriented practices.</td>
</tr>
<tr>
<td>Management support</td>
<td>Management on board with empowerment with explicit distribution of authority. Support is formally communicated through the constitution.</td>
</tr>
<tr>
<td>Supporting environment</td>
<td>Structures, processes, and tools are targets of change.</td>
</tr>
<tr>
<td>Purposeful planning</td>
<td>Systematic continuous improvement based on identified tensions.</td>
</tr>
<tr>
<td>Training</td>
<td>On-the-job training through lead link, facilitator, and secretary roles. The case organization defined specific coach roles.</td>
</tr>
</tbody>
</table>
The second part of the answer to RQ2 focuses on how the team-based organization model helps unfold agile thinking in an organization. In the first study, the theoretical feasibility of team-based organization advancing agile thinking was inquired from the interviewees. The action research in the second study helped the case organization to adapt the Holacracy framework as introduced in the literature (Robertson, 2015). The three different ways team-based organization helps with challenges faced after adapting agile development are, in chronological order, meeting practices, organizational clarity, and understanding of value creation. These address the symptoms identified prior to the research, such as unfocused meetings, emphasizing reporting over planning, and a lack of execution (section 6.4.1). It is worth mentioning that the identified improvements are highly similar to ones that product development teams experience when starting agile development. The strict meeting practices of Holacracy that enforce remaining focused on the topic and separating different topics brought an immediate relief. However, it was quickly discovered that this only scratched the surface. The meetings also helped clarify the organization’s governance, and in turn, this provided clarity regarding how the organization works. The improved understanding of the big picture was mentioned several times. Toward the end of the action research, the members of the organization gained better understanding of the value creation and how it made sense to base the prioritization more on long-term value creation. This strengthens the idea that organizational activities are created through organizational routines (Feldman & Pentland, 2003).

The action research in the second study further revealed that organizing into cross-functional self-organizing teams better matches the contemporary needs by enabling a flow of value across numerous functions, answering speed requirements with parallel work, and fostering innovation by examining matters from multiple perspectives (Mohrman, et al., 1995). It also became evident that aligning the entire organization regarding what the value is that drives the organization does not happen automatically, and it requires time. The intensive interaction helps to both coordinate activities and create a shared understanding of expectations that coworkers have for each other and their roles (Bechky, 2006). Furthermore, the action research revealed that work
transparency and clarity were required to eventually make the connection between daily work and the higher purpose of the organization.

The research results provide encouragement to start scaling from the organizational principles rather than directly adapting concrete practices of agile development as sometimes suggested (Wijewardena, 2011; van Solingen, et al., 2011; DeFauw, 2012). The secondary analysis during the second study found the team-based organization model to include the same organizing principles as agile development, such as self-organization and transparency (section 6.6.2). This makes it attractive as a continuum to the transformation that is started from the product development with agile development. It was further revealed that team-based organization model offers a feasible framework for addressing the barriers identified in scaling agile (Dikert, et al., 2016; Version One, 2016). It provides a rather holistic answer by focusing on the manner of organizing rather than adaptations to existing structures and practices. The research also confirmed the idea that the removal of formal hierarchical lines of authority are replaced by emergent normative rules, as suggested earlier (Barker, 1993; Smith, 1997; Bechky, 2006).

**Potential and limitations of a bottom-up change**

In answer to RQ3 regarding the potential and limitations of a bottom-up change, the second and third study revealed that clear benefits exist at the local level. Based on the research, we can even claim that, locally, the new model was legitimized, as the managing director identified it as the new manner of working, and the model was referenced in official audits. However, when moving across the organization boundary, limitations began to surface, as found in the third study. This also aligns with the already mentioned waves of transition, which are especially visible when crossing an organizational boundary. At these boundary crossings, conflicting institutional logics cause inertia, and the new idea even faces the risk of being abandoned. The third study revealed how, in the case organization, three institutional logics were at play simultaneously. These three logics guided how members of the organization responded to different triggers. When another logic guided the response, this in turn caused inertia for the other logics to gain dominance. When triggers came into the organization following the corporation logic (e.g. direct commands to individuals), they were handled following the previous local logic. This relied on silent knowledge regarding other individuals’ accountabilities. This was the logic that was known to work in varying conditions. It was then chosen despite its known weaknesses. In these instances, the new team-based organization logic either never crossed the individual’s mind or the individual lacked the skills to apply it to this situation. The work was usually not made transparent through the team-based organization practices, creating inertia for legitimization of the new model. However, when the case organization worked based on the new, team-based organization logic in these instances, this enforced the presence of corporation logic, since people outside the case organization did not understand that manner of working.
The use of institutional logics to explain organizational changes is not unique, though it is not particularly common, either. Understanding the interplay between the logics during the change, however, is not an easy task. The logics at play are most likely difficult to observe directly. Reay and Hinings (2009) explain this situation as a field operating on the surface within the new logic, providing the appearance of change already being effective, but closer examination reveals that the old logic is in practice to guide the behavior. In other words, different dimensions of rationality prompted a range of responses by individuals (Townley, 2002). It is the level of analysis of the logics and dimensions of rationality that set the limitations for the bottom-up institutional change. However, these limitations are most likely present if similar change is introduced by other mechanisms. The study thus provided a real-life account of how institutional logics affect behavior and offers an example regarding how different behavior can be rationalized through understanding the constellation of institutional logics. For accelerating the change across organizational boundaries, understanding the institutional logics of each side is crucial. Temporary relief could be achieved by forming an integration team to act as an interface between the different institutional logics.

9.2 Practical implications

9.2.1 Propositions for managing organizational transformations

Based on the empirical findings of this research and their theoretical interpretations, a set of propositions is formed and presented below. The propositions are aimed at helping transfer the knowledge from a single case presented in this setting to other contexts when facing organizational transformations of a similar magnitude. These are captured in the format of propositions to emphasize that any empirical testing remains outside the scope of this thesis. The propositions are intended to help future endeavors, and thus would eventually be tested.

Proposition 1. A large industrial organization is strongly anchored by existing institutional logics

The research presented in this thesis reveals that numerous mechanisms anchor the current state of affairs in the environment. These mechanisms grow more visible when the transformation crosses an organizational boundary, and they significantly affect the transformation. The first sign is the slowing down. It takes time to, first, identify the motivation behind the mechanisms and, second, to address this by either removing or changing the existing mechanism, or else by reframing the change initiative to address this constraint.

This phenomenon can be understood via institutional theory. A great deal of beliefs and practices are taken for granted among different groups of people, organizations, and even globally within professions, fields, or industries. The institutions themselves add another source of complexity to a transformation
journey, which cannot be neglected. This should be considered from the beginning of the transformation, even if starting bottom-up and locally. The earlier one attempts to capture the institutional logics affecting the environment, the better prepared one is to navigate through this complexity. Conversely, to strengthen the new model, the change leaders can implement elements that enforce and institutionalize change, such as organizational systems, processes, and structures that represent the new model (Graetz, 2000).

**Proposition 2. It is not possible, and at least not necessary, to fully understand the constellation of institutional logics in the organization prior to engaging with transformation.**

Capturing the constellation of institutional logics at the outset of a bottom-up transformation initiative is easier said than done. The good news is that, based on this research, it is not mandatory to understand this, or even to recognize the existence of these forces. The transformation in the case organization proceeded in waves from development teams to business planning and then to the entire organization’s strategic and operative work. The challenges of a larger context never occurred in a smaller context before a certain threshold of clarity was achieved locally. Of course, many of the local challenges were affected, if not caused, by shortcomings in the larger context, but these dynamics were not recognized by the people driving the change until a certain point. When these linkages were finally recognized, it sometimes caused more changes in a smaller context as well.

Systems theory provides the tools to address this interdependency of abstraction layers. The famous beer game (Senge, 2006) presents the idea using a liquor store, a stocking-and-transportation company, and a beer brewery as examples of abstraction layers. Challenges at the local level cannot be fixed by operating at that level alone. Overall performance requires understanding of the entire system.

It is clear that the way of organizing cannot be changed completely overnight. Therefore, a transitional state, or a dual structure, is evident during the transformation (Carnall, 2007; Kotter, 2014). Abandoning conventional structuring and management completely requires a highly advanced level of the new structure. For example, traditional management responsibilities, such as hiring, firing, competency development, conflict management, and setting compensation, need to be replaced with new processes before abandoning the existing ones. However, the system aspect needs to be understood during the transformation in order to be able to make educated experiments between completely local adjustments, temporary local adjustments, and more systematic changes at different context layers. This represents a daunting exercise, because to a large extent, the cross-layer dynamics only become visible when a certain level of clarity is somehow achieved locally. Paradoxically, the existence of the dual structure makes it more difficult to gain this clarity.
**Proposition 3.** In large organizations, it is possible to find smaller, sufficiently independent value streams to begin the transformation from.

The case organization represents only a small operative unit of a large corporation. Therefore, in terms of the above-mentioned systems perspective, the case company possessed a plethora of layers above and around itself. As such, this raises the question of how one can apply systems thinking in the above-mentioned fashion in such an overwhelming environment. The concept applied by the case organization consisted of defining itself as an end-to-end value-delivering stream across the corporation. This provides a manageable and understandable focal point for transformation. It also offers an easily understandable means for measuring success. It is the value expected from the organization that is the focus of improvement. In the first study, a part of the interviews was utilized to identify the value stream in the case organization. One detail was that a person in the value stream was formally linked to the case organization only via the corporation’s CEO. More conventional approaches to transformations and improvement programs would never have involved this person. Furthermore, numerous other people would have also been left out if following the formal organizational chart and conventional improvement approaches.

While this value-stream-based definition of an organization works fairly well, the organization naturally does not operate in isolation. The above-mentioned challenges explained by the institutional and systems theories still apply in the larger context. However, the bond between people capable of delivering end-to-end value can be enforced, and in doing so, use of identified adapters (i.e. roles for working as interpreters between contexts) is enabled.

**Proposition 4.** An organization can handle several transformative changes in parallel.

The case organization underwent multiple transformations in parallel. There was the team-based organization transformation described in this thesis, but at the same time, the company was affected by re-organization in the corporation and transforming its products and business models from physical product sales to the subscription-based service model. Furthermore, this situation is increasingly likely. Organizations are undergoing multiple significant changes in parallel, as well as gentler adaptations.

It is argued that the team-based organization model described in this thesis can help to better address these changes in the future. We saw early evidence of this during the research. Significant changes, such as handling changing priorities and re-organizing based on the new needs, were far more lightweight and real-time than is traditionally believed possible.

In conclusion, this proposition states that organizations should not, and cannot, wait for stable moments to undertake a transformation. Furthermore, it proposes that multiple transformations in parallel represent the future norm, and therefore, the decision to re-structure the organization to this new continuous state of flux should not be prolonged. This research indicates that
the team-based organization model represents one feasible solution for this new structure.

9.3 Evaluation of the research and its methods

The primary limitation of this research is that it was performed in a single organization. Therefore, the opportunity for generalization remains limited. The main contribution of this research—the three-layer model for bottom-up institutional change—combined several existing theories in a novel manner based on empirical findings in a specific environment. In addition, a set of propositions were presented that provide theoretical generalization to support the proposed model despite the research being conducted within a single organization. The model and the propositions together provide an effective means for transferring the knowledge from this research to other contexts.

The second distinct characteristic of this research approach is that the research was performed in an organization employing the researcher. Furthermore, the researcher also acted in a role of key driver for the transformation under research. This, of course, resulted in the researcher being deeply immersed in the situation. This increases the risk of bias in both the observations and interpretations. These risks were countered by utilizing participant reviewing to a high extent, and the risk of bias is tolerable because the deep immersion also produces positive effects in allowing access to documents and discussions that an external researcher would not have. In addition, during the transformation, external contributors were used, and the material they recorded was employed as data for the research.

Considering organizational transformation or institutional change, the research time was short. As such, we do not know the final outcome of the transformation at the time of writing the final sentences of this thesis. Furthermore, as we learned through the systematic combining during the research, time will also change our interpretation of matters. Not being able to present the final truth represents a significant limitation of this research, but it is practically unavoidable since, as with many other matters in life, the time at hand for this research was limited.

Next, we need to address not just the justification of the selected qualitative research methods, but the quality of the conducted inquiry. We evaluate this through five, somewhat overlapping lenses (Miles, et al., 2014): the objectivity/confirmability of qualitative work, reliability/dependability/auditability, internal validity/credibility/authenticity, external validity/transferability/fittingness, and utilization/action orientation. Before we go into details for each of them, Table 47 presents a summary of the evaluation:
Table 47. Summary of the evaluation of the validity of the research.

<table>
<thead>
<tr>
<th>Lens</th>
<th>Description</th>
<th>How this was addressed in the research?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Objectivity/Confirmability</td>
<td>Is the research performed in a manner that is neutral to any presumptions or opinions?</td>
<td>The researcher was consciously aware of his role and minimized the inevitable personal bias entering the process.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>The author’s role as a researcher was clearly known to all participants.</td>
</tr>
<tr>
<td>Reliability/Dependability/Auditability</td>
<td>Is the research conducted with care and with sufficient overall quality and integrity?</td>
<td>A great deal of effort was invested in describing the analysis of the research, as the actual analysis was a continuous and complex process.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>The conclusion is drawn based on cumulative data from three consecutive studies, providing a solid ground for analysis.</td>
</tr>
<tr>
<td>Internal validity/Credibility/ Authenticity</td>
<td>Is the research conducted and presented such that the reader can obtain an authentic picture?</td>
<td>Research methods, and especially data analysis, is described explicitly, providing transparency to the utilized research process.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>The participants were aware of the research being conducted. They were involved in analyzing and reviewing the key findings.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>The observations were continuously reflected to existing theories through the matching process of the systematic combining research approach.</td>
</tr>
<tr>
<td>External validity/Transferability/ Fittingness</td>
<td>How well are the results usable in another setting?</td>
<td>A theoretical generalization is presented in the bottom-up institutional change model that combines several existing theories with empirical findings from the case.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>In addition, a set of propositions are presented as implications for managing the similar future transformations.</td>
</tr>
<tr>
<td>Utilization/Action orientation</td>
<td>How much impact did the research have in practice? Are the key findings actionable?</td>
<td>The main focus of the research was to change the practice. This is, of course, most evident during the action research in the second study.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Through this, the research results also provide clear instructions for getting started with the team-based organization model and offer suggestions regarding how to ease and accelerate such a transformation.</td>
</tr>
</tbody>
</table>

**The objectivity/confirmability of qualitative work**

The first validity lens concerns the neutrality and the avoidance of bias entering the research at any stage. Researching one’s own organization and the researcher acting as the catalyst for the initiative to be researched introduces considerable challenges to the research and a serious threat of bias entering the data and its analysis. The author’s role was highly central to the original initiative. Combined with being an employee of the case organization, this adds a natural pressure for the initiatives to be “successful.” Despite these challenges, however, this setup is not at all uncommon in action research. Coghlan and Brannick (2001) discuss action research in the context of a researcher’s own company. They identify two specific issues: 1) clarifying the research project in
terms of both one’s own and the system’s commitment to learning in action and 2) managing issues of role and secondary access. Secondary access means access to all specific parts of the organization that are relevant to research. It is evident that the researcher’s role and status in the organization notably affected these issues. While being part of the organization provides a researcher with in-depth understanding of the organizational culture, Coghlan and Brannick (2001) warn that dual-role researchers may experience more problems than single-role researchers. A researcher may, for example, be biased by assuming she knows too much already, and thus not probe interviewees deep enough to reveal new insights. To counter these validity concerns, the fact that the interviews would be recorded, and other data collected for the purpose of research and writing an academic thesis was openly discussed from the outset of the research. While this may have affected the behavior of some participants, it also caused people to present more detailed information regarding their reasoning for certain types of actions and behavior. In turn, this provided deep insights into the transformation, and thus justifies the approach in this case.

**Reliability/dependability/auditability**

The main issue for the second lens concerns whether the research is performed with reasonable care. As such, the lens addresses the research’s overall quality and integrity. The research was divided into three distinctive studies. The research questions for each individual study were raised based on the previous research activities, and the methods were chosen based on the questions, but they were also affected by availability and resources. This continuum and linkage between studies clearly contributes to this research’s integrity.

Since the above-mentioned challenges existed due to the researcher’s role in the case organization, extra care was taken to clearly and openly communicate that the research is being conducted in parallel with the change initiative. Additionally, in specific data-gathering events, it was emphasized that the event was organized for the research.

Although the analysis is not a straightforward separate step in qualitative research (and especially in the systematic combining research approach), a great deal of effort was invested in describing the studies’ analysis processes. Obviously, there were numerous iterations before reaching the final conclusion. While it is impossible to include all iterations, a number of analysis artifacts are displayed to help the reader understand this process.

Data was accumulating through the research during the three distinctive studies and was gathered from multiple sources. The data for the final conclusion came from this wide array and offered possibilities for triangulation. Furthermore, different stages of coding were reviewed together with participants to avoid researcher bias affecting the analysis.
Discussion

**Internal validity/credibility/authenticity**

The ultimate question regarding the issue of validity concerns the level of credibility of the study’s findings. Specifically, this concerns whether the work provides an authentic picture of what the research was examining. The research methods are described in detail for each of the three studies, including how data is analyzed from gathering to final conclusion. Most of the data is fully traceable from the analysis back to original gathering. Several examples are presented in this thesis. The authenticity is especially important for the second study, which comprises two-year action research. Rich descriptions of the action research cycles are presented for the study to provide the reader with an understanding of the setting.

As previously discussed, single-case-study research did not enable replicating the findings with another set of data. However, the intermediate and final concluding findings were reviewed and mutually considered accurate by participants and interviewees that took part in different research activities. Further data from multiple sources and in multiple formats was used when possible and practical.

The three studies together form a coherent whole, and where the pre-expectations are not met, this is discussed in the matching and re-directing section of corresponding study. Due to the systematic combining research approach, continuous effort was made to identify relevant supporting and rival theories based on the insights and emerging findings in the empirical studies. Existing theories and knowledge were then utilized when concluding the study.

**External validity/transferability/fittingness**

A study should clearly indicate how the results can be transferred to other contexts. It is obvious that a single most dominant factor affecting this research’s external validity concerns the fact that it took place in a single organization. The data comes from a single case. It is also clear that the data is not diverse enough to directly transfer the findings to other empirical settings. However, two aspects enable a path for generalization for the reader: First, in section 9.1, a model for bottom-up institutional change is presented as a primary contribution and the answer to the overall research problem. In addition, in section 9.2, a set of propositions are presented as implications for managing future transformations. Together, these offer transferable knowledge. Suggestions for further testing and gaining wider data are presented in section 10.2. Second, the detailed description of events in the second study helps others to see which of the findings are expected to be directly applicable in their own environment, as well as which need adaptations. The positive side-effect of a single case study is that presenting rich qualitative data is possible simply by presenting a relatively complete story (Eisenhardt & Graebner, 2007).
**Utilization/action orientation**

The very nature of abductive research and systematic combining concerns focusing in parallel on theory and empirical executions. Because of this, the findings naturally assume an actionable format. The research also resulted in factual development of the participating organization and individual participants. This was true for both a novel organizational structure and actual operative work. While individuals were taking part in learning a new method of organizing their work, they also reported learning about the work itself. It is worth noting that the findings are directly usable in this given setting by definition, but the knowledge offered to others remains on a more abstract level.
This closing chapter of this thesis provides the conclusion of the conducted research in terms of its contribution to both academia and practice. While various areas were explored during this research, a number of promising avenues were left outside the scope of this research due to time and resource constraints. Thus, this chapter summarizes the identified limitations regarding this research’s scope and offers ideas of avenues for future research.

10.1 Conclusion

As a conclusion, the team-based organization model presents one feasible approach to scaling agile thinking beyond the product development function and beyond the immediate development value stream to also include the operational value stream. It was found to be possible to begin the transformation with minimal up-front planning. The chosen framework, Holacracy, included mechanisms and methods for continuously refining and improving the system that are crucial for the transformation. The transformation in turn revealed layers of the organization, each affected once the previous layer has undergone the transformation enough to affect how it interacted with the next layer. This mechanism can be understood via institutional theory, and institutional logics, specifically. The inability to address the constellation of institutional logics properly comprised the main cause of inertia in the transformation. However, even in the aftermath, it remains difficult to imagine how the constellation of logics could have been understood prior to undergoing the transformation. Therefore, the more emerging and experimental approach to change and transformation is recommended based on this research.

This research provides academic contributions in two main areas: First, while the scaling of agile thinking is widely recognized as a challenge (Dikert, et al., 2016), the empirically grounded proposals for how to do so have remained limited. This thesis provides an extensive account regarding how agile thinking unfolds in an organization with the team-based organization model.

The second area of academic contribution concerns the model for bottom-up institutional change-making. Institutional theory has traditionally been employed to explain the stagnation of organizations and their tendency to mimic each other. Recently, interest has been shifting toward the use of
Conclusions and avenues for future research

Institutional theory in understanding organizational changes. Primarily, however, this has been focusing on how organizations respond to various external triggers. This research defined a model for internally initiated bottom-up change using the institutional theory as the theoretical cornerstone. The model is significantly influenced by the work of Trish Reay and her colleagues (Reay & Hinings, 2009; Reay, et al., 2017). This research provides a specific application of the theory for an environment of product development and a large corporation.

This study’s contributions to practice are divided into four main areas: First, this research offers examples for identifying and modeling the actual value stream in an organization. By visualizing the value streams, it becomes possible to understand the complexity, parallelism, and cyclic nature of the work. These challenges drove the definition of agile development, but the same challenges are shared among other functions of an organization as well as other types of work. Realizing this can help future managers re-think how they lead their companies’ organizing.

Second, this thesis provides a concrete description of a feasible model for an organizational structure to better support the actual flow of work. The presented model includes instructions regarding how to begin with the model using a light-weight approach and how the model itself helps the model evolve after initially being established. This idea challenges conventional centrally led change projects and their processes. The presented model is designed to be continuously changing. The approach requires little investment at the outset, and thus presents a low-risk initiative. This should provide organizations and their leaders the courage to get started. The prerequisite for the leaders, however, is that they learn to accept uncertainty, as there is no defined future end-state. However, one could say that this represents the last organizational change one will ever need, as the new organization structure supports its further evolution. The local benefits, such as transparency in value creation and increased alignment and understanding regarding how the company works, are expected to be quickly reached in other settings.

Third, this research encourages individuals who challenge the current status in large organizations to follow through with their ideas and offers examples concerning how bottom-up agency can work and lead to significant change.

Lastly, the model for bottom-up institutional change provides lenses through which future change initiatives may be accelerated in reaching a legitimized state possibly leading to institutional change. Furthermore, the model also provides tools for recognizing the real motives behind the inertia, which is too often labeled “general resistance.” More often than not, people’s behavior is driven by a far more complex cognitive system beyond simply resisting change for the sake of resisting.
10.2 Limitations and avenues for further research

This research was conducted in a single environment. An obvious future research endeavor would be to repeat similar experiments in other organizations and in different domains and contexts. The journey conducted by the case organization cannot be repeated, but by combining observations from multiple environments, it is possible to identify common patterns and, eventually, build a common framework. When researching another case, an interesting aspect would be the effect of the starting point. The case organization possessed a long history with agile development. Furthermore, a strong power hierarchy was already abandoned in practice. Using institutional theory, for example, it might be valuable at the outset of research to attempt to map the institutional logics affecting the organization in question. The aspects to consider when looking for institutions include the workforce’s values, the field in which the organization operates, and the professions involved in the operation. This study revealed that analyzing and understanding the institutional environment in which the case organization is embedded could potentially help accelerate the transformation. During this research it seemed difficult to fully understand in advance how new and existing logics work together. But if one attempts to understand the environment from this perspective, then it might be easier to better pinpoint the change iterations.

The case transformation is characterized as a bottom-up initiative. For comparison, it would be interesting to examine cases where the initiative comes more in a top-down fashion, such as from the middle management, a business unit or line of business in a corporation, or the CEO of a corporation. I expect significant differences at a certain level, but similarities as well.

Obviously, teams represented important entities in this case. However, teams were not the focus of this research. Therefore, it remains for future research to better understand the role of team dynamics and teams themselves as initiators and implementers of change. By and colleagues (2018) point us in this direction, stating that many contemporary movements in organizational theory are based on self-organization and self-organizing teams, yet the team as the focus point in organizational change has been overlooked.

A case study suffers from time limitations. This affects both the organization’s learning capacity and the researcher’s capability to interpret the data and observations. A longitudinal case study or returning to the same organization later for further research should be arranged to gain insight into the time factor.

The original objective of this research was to be able to measure the concrete performance benefits of the transformation, such as improved flexibility and ability to continuously adapt to changing conditions. Toward the end, however, the research was redirected to the transformation itself. This means that the original research questions remain unanswered—namely, what is the long-term effect on an organization’s ability to maneuver in a changing environment, and is the impact going to last? Is the organization more capable of responding to changes in the environment? If the collective mindset of an organization has changed to consider change a normal state, then what is the future role of
transformations and disruptions? Is the organization also capable of creating change and not just responding to outside events and triggers? Finally, at the end, what is the organizational performance outcome, and has it improved?

While this thesis presents a rather detailed account regarding how one organization functioned during a transformation into the team-based organization model, how the actual work was performed was not in focus. Bechky (2006) raises the point that there remains little empirical evidence indicating how coordination actually happens in temporary organizations, which are similar in principle to the team-based organization studied in this research. She states that most of the research has focused on benefits of such organizations, such as the flexibility they provide. How the organizations and individuals working within them actually perform the activities in a flexible manner remains to be explored.

A change to the manner of organizing compared to the commonly considered standard fashion can be labeled a disruptive change in a corporation. Currently, disruption is widely studied in organizational research. Studying disruptive change in the form of organizing could be reflected to this knowledge from other examples, such as disruptive technological innovations. As such, it is worth asking whether organizational change can learn something from these other domains.

Finally, it can be concluded that novel thinking regarding organizational change, both in how it is initiated and how it is managed, offers a plethora of pathways for further research, and reconsidering conventional thinking in organizational change and development seems extremely fruitful. There is little doubt in my mind that the pace of change is going to slow down in the future, so it is better to roll up our sleeves and help organizations change to be changing.


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Appendixes

Appendix 1. First study: Interview instrument

Introduction

Welcome. Thank you for the opportunity to do this interview. We are doing this for research about novel organizing models for companies. With your permission, I am audio recording the interview. The main reason is recording is to have the data in its full form for later analysis. The analysis is going to start by having a transcript written. I will share the transcript with you, and you can make corrections to it, if you think something is wrong or missing. The interview has three main topics: what is your value creating organization, your agile transition and team-based organization. The time available is 90 minutes. Let’s begin.

Part 1: Value and value-creating organization

Would you agree that you create customer value in terms of products [X] and [Y]?

- If not, ask what the interviewee sees as an end user customer.
- Ask if she sees any other value streams?

Could you illustrate how you see value flowing through the company (value adding steps through people and technology)?

*(explain idea-to-profit if needed)*

- Preferably capture this in illustration.

Using the created illustration, can you list the people you interact with in order to help the flow of the value?

- For each, explain the interaction and the reason why you interact with this person (organizational structure, something else)
Appendixes

Using the created illustration, can you list significant persons/roles and with whom they interact?

For each, explain the interaction and the reason why they interact with the person(s) (organizational structure, something else)

Part 2: Agile journey this far

Introduction

On the timeline, you can see major incidents during the agile transition in your organization. For each question, you can use this illustration to help you bring the incident back to memory.

When we go through the questions, please, also provide information about missing transition stages, additional details, or details/stages that you think are not accurate.

- How would you describe the outcome of the change so far?
- Who (people and roles) have been involved?
- Who else, if any, you think you should have been/should be also included?
- What kind of difficulties did you encounter during different stages?

Point, and remind, what were the stages

Remind the value flow

- When trying to counter the difficulties, what was tried?
- In your opinion, which processes and methods did work, and why?
- In your opinion, which processes and methods did not work to counter these, and why?
Part 3: Proposed team-based organizational structure

Introduction

This illustration gives a real-life example of how in one organization people recognized work to flow through the organization during the development and introduction of a new product. The left-hand side gives a list of general skills needed in the realization of the new idea. The flow diagram shows the paths of significant co-working and dependency. The circles illustrate the most intense communication, and therefore teams: Product Design Team, Manufacturing Process Development Team and Sales, Distribution and Logistics team.

A team-based organization, as an opposite to hierarchical function based, is proposed to be a more natural way of organizing around work.

Looking at the challenges identified in the first part of the interview, what are the challenges you expect this to solve?

- In your opinion, how would this help?

Is there something else, this could help with?

- How is this supposed to help?

What in your opinion would make this work?
What kind of risks do you see?
What could be done to countermeasure the risks?
Appendix 2. First study: Interview instrument (focus group)

Introduction

The focus of this interview is the value stream for [] and the network of people and their interactions. This is also part of an academic research, and a supplement to six individual interviews conducted in parallel. The discussion will be audio recorded and you will have a chance to review the transcript of the recording later. Let’s go.

1. Can you describe how you understand the value creation flow in [the case organization]?
   (show/explain the idea to cash as the process)
   Upstream from customer (requirements) and downstream to customer (launch)
   People you interact with
   Systems you interact with
   Are there loops in the flow that you can identify?

2. What are the biggest challenges in working with an Agile development organization?
   Personal, responsibilities
   Organization and interaction
   In products developed
   In knowledge

3. Team-Based Org: Cross-functional focused teams, steady cadence, and next-actions.
   Could this work and could it help in the problems you identified? How?
   Why not?
   What are the risks?
   What could be the success factors?
   How do you see your role?
### Appendix 3. First study: Final code categories

<table>
<thead>
<tr>
<th>Example quote</th>
<th>Code</th>
<th>Sub-category</th>
<th>Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>Afterwards the slowness is astonishing, bringing new things is surprisingly slow, bringing change to the organization.</td>
<td>Change is slow</td>
<td></td>
<td>Change management</td>
</tr>
<tr>
<td>In the beginning we used too much energy on resistance...only later I realized that this is not the way, but we need to bring the change to them.</td>
<td>Follow the change energy</td>
<td></td>
<td>Transformation enablers</td>
</tr>
<tr>
<td>It was the key, that [X] took our model and the SAFe -model and started to “sell” it himself.</td>
<td>Management involved in change</td>
<td></td>
<td></td>
</tr>
<tr>
<td>We have chosen the frameworks that are already in use elsewhere and literature and knowledge exist.</td>
<td>Training and the use of known frameworks</td>
<td></td>
<td></td>
</tr>
<tr>
<td>We knew that these people have been involved with our products and services, so we contacted them directly.</td>
<td>Social network</td>
<td></td>
<td>Existence of informal organization</td>
</tr>
<tr>
<td>[value stream illustrations created during the interviews]</td>
<td>Understanding of value stream</td>
<td></td>
<td>Understanding of value stream</td>
</tr>
<tr>
<td>…we get to start the implementation earlier and I believe that time from the beginning to moment it is done is significantly shorter than earlier.</td>
<td>Faster incremental and focused delivery</td>
<td></td>
<td>Local benefits</td>
</tr>
<tr>
<td>…any software developer can work on anything, making Sprint planning easier.</td>
<td>Self-organizing teams break knowledge silos</td>
<td></td>
<td></td>
</tr>
<tr>
<td>…the rhythm and fixed release dates, it removed quite a bit, I estimate, over 70-80% of all unnecessary questions that we got in the past.</td>
<td>Creates organizational cadence</td>
<td></td>
<td>Team level change</td>
</tr>
<tr>
<td>…the transparency of the SAFe -model, everything, all decisions related to it – investment decisions – it is right in front of the management’s eyes.</td>
<td>Transparency</td>
<td></td>
<td>Changes at organizational boundary</td>
</tr>
<tr>
<td>…but the fact that we were able to keep the commitments, it increased the trust and satisfaction. …decreasing the negative communication.</td>
<td>Trustworthy, predictable teams</td>
<td></td>
<td></td>
</tr>
<tr>
<td>…co-working between teams, if they knew more about what the other teams are doing, it could help more.</td>
<td>Collaboration between teams</td>
<td></td>
<td>New challenges discovered</td>
</tr>
<tr>
<td>Example quote</td>
<td>Code</td>
<td>Sub-category</td>
<td>Category</td>
</tr>
<tr>
<td>------------------------------------------------------------------------------</td>
<td>-------------------------------------------</td>
<td>-------------------------------------</td>
<td>-----------------------------------------------</td>
</tr>
<tr>
<td>…we have challenges with front-offices when people change…</td>
<td>Formal organization changes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>…especially in the beginning of the transformation it is dependent on someone and that brings the energy.</td>
<td>Lack of driver</td>
<td></td>
<td></td>
</tr>
<tr>
<td>…say that this is a good thing, but then there is no attendance. It doesn’t work that way.</td>
<td>People</td>
<td></td>
<td></td>
</tr>
<tr>
<td>…I have experienced, the number of recurring meetings is high. You get a feeling that you do not have time…you do not get the work done.</td>
<td>Time consumption</td>
<td></td>
<td></td>
</tr>
<tr>
<td>…but how do you create, if we are in this group, how do you create communication within the group, so everybody knows what to do and what the goal is, and then get to the goals.</td>
<td>Communication</td>
<td></td>
<td></td>
</tr>
<tr>
<td>…of course, we have to involve the countries right after we get the circles working locally.</td>
<td>External team members</td>
<td>Distributed value stream members</td>
<td>Distributed value stream imposes challenges</td>
</tr>
<tr>
<td>Doing the value stream mapping is not the challenge, it is to even get the access to the customer and study their processes that was surprisingly difficult.</td>
<td>Value Stream Mapping - discovering complexity</td>
<td></td>
<td></td>
</tr>
<tr>
<td>It is their decision what they take from our offer and bring to their market.</td>
<td>Complex/distributed value stream with external teams (f.ex. launch)</td>
<td>Organization level change</td>
<td></td>
</tr>
<tr>
<td>We should all look into the mirror and commit more to teamwork, and decrease working individually.</td>
<td>Commitment</td>
<td></td>
<td></td>
</tr>
<tr>
<td>In my opinion, team works so that we go through the open projects for that team and stick to that.</td>
<td>Defined team boundaries</td>
<td></td>
<td></td>
</tr>
<tr>
<td>What the team is supposed to work on…sticking to the team’s work. Small talk can be done later.</td>
<td>Discipline to follow the practices</td>
<td>Need for guidance and support</td>
<td></td>
</tr>
<tr>
<td>It is clear that management must be involved, they have to be encouraged.</td>
<td>Management support</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Going through the model, going through the roles holding hands and having the material such as we have here on conference room tables nowadays.</td>
<td>Training and coaching</td>
<td></td>
<td></td>
</tr>
<tr>
<td>…in teams we can take care of all things, all things that are important and need taking care of.</td>
<td>Focused cross-functional teams with cadence</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Without the past journey, implementing a model like this could be tough.</td>
<td>Natural continuum</td>
<td>Team-based organization as a feasible solution</td>
<td></td>
</tr>
<tr>
<td>…for example [X] is involved much more during the development than earlier. I believe that they can be engaged much more.</td>
<td>Removes silos</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Example quote</td>
<td>Code</td>
<td>Sub-category</td>
<td>Category</td>
</tr>
<tr>
<td>------------------------------------------------------------------------------</td>
<td>-------------------------------------------</td>
<td>-------------------------------------------</td>
<td>-------------------------------</td>
</tr>
<tr>
<td>…[in the face-to-face [joint planning] meeting] we go through the process and in there we get the alignment and approval for the prioritization.</td>
<td>Join planning meetings</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Product specialists, product managers from our focus countries... primary channel in the corporation to gather the information.</td>
<td>Stakeholder network</td>
<td>Local practices</td>
<td></td>
</tr>
<tr>
<td>It shows on the Portfolio and roadmap levels very clearly, that we are thinking about the order and whether something should be done economically at all…</td>
<td>Requirements management hierarchy</td>
<td></td>
<td></td>
</tr>
<tr>
<td>It helped…three levels, portfolio, features in roadmap and then similarly the Sprints.</td>
<td>Scaled Agile Framework (SAFe)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Defining the business value for a feature or an epic was a surprisingly overwhelming task, and maybe doing this has been the most unpleasant. On the other hand, it makes the value visible...</td>
<td>Business case</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Time changes, the idea has changed, maybe we go back to the original idea and said, okay, we thought it will be better if we do it like this.</td>
<td>Complexity causes changes in requirements</td>
<td>New challenges discovered</td>
<td>Stakeholder level change</td>
</tr>
<tr>
<td>Naturally sales, even while we know who they are, they are on our lists and they advance the sales, but they are not attending the Ajoint planning meetings.</td>
<td>Involving all functions early</td>
<td></td>
<td></td>
</tr>
<tr>
<td>In theory, to have visibility, but in practice, we can’t travel here every 14 days to have visibility.</td>
<td>Lack of transparency from outside</td>
<td></td>
<td></td>
</tr>
<tr>
<td>When the next release is started, there is a certain alignment and certainty about the size of the work.</td>
<td>Alignment</td>
<td></td>
<td></td>
</tr>
<tr>
<td>…sales were never involved. Now we are sitting together on these and go through together. I know tens of times better how the cost estimate evolves.</td>
<td>Work is parallel and iterative, not sequential</td>
<td></td>
<td></td>
</tr>
<tr>
<td>It makes communication to the outside easier, communicating what we are doing and for whom.</td>
<td>Easier communication</td>
<td></td>
<td>Local benefits</td>
</tr>
<tr>
<td>…we can now prioritize better. Compared to the old way of who has the loudest voice...</td>
<td>Means for prioritization</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Appendix 4. Second study: Final analytical display
Appendix 5. Third study: Interview instrument (CIT)

Introductory statement

The objective of this interview is to find out what has affected the current state of the team-based organization (TBO) transformation.

The time span is the past two years (see the timeline below to ease the recall). We want to look beyond your immediate work environment, so when possible state also elements you think affect your work environment.

I believe you are especially well qualified to tell about the period, having been actively involved with the initiative.

The interview will be audio recorded and you will have a chance to review the transcript of the recording later.

The purpose of the initiative

General aim (primary purpose) of TBO transformation is to transform the organization to exhibit following organizational design principles:

<table>
<thead>
<tr>
<th>Principle</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Self-organization</td>
<td>People take ownership on how they work in teams. Teams and its members have explicit decision-making power.</td>
</tr>
<tr>
<td>Team-based structure</td>
<td>Basic organizing element is team, instead of individuals. A team is working toward energizing their emerging and shared purpose.</td>
</tr>
<tr>
<td>Information transparency</td>
<td>Information is made available (for pull) for everyone. This guides toward real-time information instead of fixed communication mechanisms (push).</td>
</tr>
<tr>
<td>Hierarchy by scope</td>
<td>When subjects get too large or complex for one team to handle completely, a hierarchy is introduced to divide the subject by scope, complexity and/or purpose. Hierarchy is not describing power relationships.</td>
</tr>
<tr>
<td>Organizational cadence</td>
<td>The whole organization is following the same cadence, or rhythm, for re-evaluating its progress and direction.</td>
</tr>
<tr>
<td>Learning is incorporated</td>
<td>The workflow incorporates practices for systematic learning, and continuous improvement.</td>
</tr>
</tbody>
</table>
Appendixes

Timeline for two-year transformation

6.10.2016
Decision to systemize the team-based organizational structure

Inspiration from Teal organization and Holacracy

1.10.2018
1.1.2017
1.4.2017
1.7.2017
1.10.2017
1.1.2018
1.4.2018
1.7.2018

6.10.2016
Decision to systemize the team-based organizational structure

Inspiration from Teal organization and Holacracy

6.4.2017
First ISO9001 audit referencing team-based organization model

28.2.2018
External coach part 2 begins (multiple circles)

12.1.2017
Finalized the team-based organization constitution v.1.0

29.8.2017
Founding the guiding coalition

11/2016
Adapted Glassfrog for recording the organization governance

17.11.2016
First internal team-based organization training

15.4.2017
'Cork-board' changed to Asana.

4.4.2017
First ISO9001 audit referencing team-based organization model

4.10.2017
External coach (3P circle goal workshop)

4.6.2018
Team-based organization model announced as official organizational model.
Capturing the incidents

I want you to recall significant incidents during the transformation. We are interested in what has happened exactly. There is no need to further analyze the incident. The incidents we go through should have impacted positively or negatively the overall transformation and/or impacted how individuals or groups of people felt (satisfied/unsatisfied) about the TBO transformation at that time.

An incident can be an individual incident, pattern of behavior or series of similar behaviors. You can describe as many incidents as you want.

Think of an incident that supported or has been helpful for the team-based organization transformation.

Think of an incident that decayed or has been harmful for the team-based organization transformation.
Appendixes

Interviewer follow-up questions and checklist

Clarifying questions for incident completeness:

For what exactly happened:

- What had led into this situation?
- Where? What was the situation?
- When did this happen?

Exactly who (or in which role someone) did what, to whom? Or what affected something else?

- What exactly did happen for/against TBO transformation?
- What exactly made you feel this to be significant for/against TBO transformation?
- What happened afterwards? Did this lead to some change?

For personal interpretation or analysis:

- What do you think led to this to happen?
- In your opinion why did you/(that person, in that role) behave in this way?
- How did you respond to this incident?
- How did others respond to this incident?

Checklist for incident completeness:

<table>
<thead>
<tr>
<th></th>
<th>Incident 1</th>
<th>Incident 2</th>
<th>Incident 3</th>
<th>Incident 4</th>
<th>Incident 5</th>
<th>Incident 6</th>
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</thead>
<tbody>
<tr>
<td>What happened before</td>
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<tr>
<td>(pre-condition)</td>
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<tr>
<td>Where</td>
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<tr>
<td>(place, situation)</td>
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<td>When</td>
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<tr>
<td>(Timing, frequency)</td>
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<td>Who</td>
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<tr>
<td>(actors)</td>
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<tr>
<td>Who or what</td>
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<td>(object of incident)</td>
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<tr>
<td>What</td>
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<td>(action)</td>
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<tr>
<td>Why good/bad</td>
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<td>(evaluation)</td>
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<tr>
<td>What happened next</td>
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<tr>
<td>(consequence)</td>
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</table>
This doctoral dissertation concerns institutional change and how bottom-up agency can initiate and drive it. The operating environment of organizations is increasingly dynamic and requires agility from the entire organization. The research context is a case study organization aiming at scaling agile thinking beyond product development activities. The empirical research focuses on scaling agile thinking by intervening the way or organizing in terms of implementing a novel team-based organization model. This research shows that adapting a novel model for organizational structuring is a feasible route to unfold agile thinking in an organization. It further revealed that the understanding of the constellation of institutional logics is focal. Gaining this understanding determines the success of such an endeavor.

The developed three-level framework illustrates the role of bottom-up agency in institutional change. The research results offer new insights for employees, teams, managers, organizations, and change agents involved in fostering organizational change.