How Agile Workers Make Sense of Managerial Communication

Acknowledgements

We would like to express our deep gratitude and appreciation to our motivating and coaching supervisor Katie Sullivan, for her valuable guidance and suggestions, and unwavering support in finalizing this thesis.

Further, we would like to thank all the participants who agreed to take part in this research and openly provided us with invaluable insights and great support. This research would not have been possible without your help.

Special thanks go to Sandra who introduced us to this research idea and helped us organize the interviews.

To Julienne Stewart-Sandgren, we are grateful for her helpful suggestions for us.

Last but not least, we would like to thank our families and friends who supported us during the time of writing this thesis.

Thank you!

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Abstract

TITLE	How Agile Workers Make Sense of Managerial Communication
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DATE	23rd May 2014
PURPOSE	The purpose of the research project is to contribute to agile communication theory with insights about how agile workers make sense of managerial communication.
RELEVANCE	Due to the rapid changes organizations in the software development industry are now facing, the use of agile practices has become popular. Also, taking the agile workers perspective has a tendency to be neglected in literature on agile practices.
METHODOLOGY	This qualitative research has been conducted with an interpretative approach, using an abductive method when working with data and theory. In total, we conducted 12 semi-structured interviews and analyzed them using hermeneutics.
FINDINGS	We discovered that there is a tension between agile workers and management and also that managers should use a mix of communication channels when communicating with agile workers.
CONTRIBUTIONS	We contributed with an in-depth understanding of how agile workers make sense of managerial communication. We also contributed to literature on agile practices by identifying the tension between the self-organized teams and management, specifically in large-sized companies.
KEY-WORDS	Agile workers, agile communication, agile practices, self-organized teams, managers, SCRUM, managerial communication

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1 Introduction

1.1 Research concepts

The world today is progressing in leaps and bounds; changes are taking place from one day to the next. The software industry in particular is under increasing pressure in order to deliver high quality, low cost products at a rapid pace. Hence, in order to cope with rapid development and the continuous change prevalent in the software industry, agile methods became popular in order to shorten product life cycles and ensure fast processes. Agile practices have gained more attention since mid-1990s, especially in software development companies (Williams, 2012). In general, "agile methods are lightweight processes that employ short iterative cycles, actively involve users to establish, prioritize, and verify requirements, and rely on a team's tacit knowledge as opposed to documentation" (Boehm & Turner, 2005, p30). In other words, agile methods aim at producing products in a fast and efficient way, and put emphasis on adaptation to the customer's needs (Medinilla, 2012). A key element of agile work is employees who can work independently (Jyothi & Rao, 2011). The demands and expectations placed upon agile workers necessitate communication and in particular sufficient communication practices between management and teams. In our research project, we define agile workers as the team members (such as developers and testers) working in a software development company using agile practices to work.

'Best' agile practices suggest that teams should have a high level of self-organizing (Medinilla, 2012). Managers should work as coaches by encouraging and leading teams instead of measuring and managing them (Medinilla, 2012). Both of these edicts presume that frequent communication plays an important role in agile practices (Hummel, Rosenkranz & Holten, 2013). Yet, the autonomous nature of the work, combined with relatively non-hierarchical expectations of management creates curiosity about how employees understand or make sense of managerial communication.

1.2 Problem discussion and rationales

Our research has been conducted in a multinational organization, which will go under the pseudonym YAF. YAF operates in the telecommunication business where it provides industry-leading network equipment and software, as well as services for network and

business operations. Their working methodology changed from traditional development methods to agile practices around five years ago. In the past, YAF's traditional development methods were based on documentation, predictive approaches, and strict controls. The teams who worked on traditional development methods would have a detailed plan at the beginning of tasks and completed tasks in the entire life cycle of the product (Stoica, Mircea & Ghilic-Micu, 2013). Agile practices, on the other hand, dramatically shifted the ways in which our participants worked. Currently, their work is based on collaboration and interaction between workers in order to introduce high quality, low cost products to be developed in a short period (Stoica et al., 2013).

Although agile practices work best in small- and medium-sized organizations where members are self-organized, YAF, the organization where we collected our data, is a large organization with multiple levels in the hierarchy (Barlow, Giboney, Keith, Wilson, Schuetzler, Lowry, & Vance, 2011; Turk, France & Rumpe, 2002). Due to the fact that YAF, a large organization, chose to use agile practices we wanted to know how agile workers make sense of the communication received from their managers and also how the shift to agile practices influences communication. Furthermore, the literature regarding agile work primarily focuses on the theories of agile work and not as much on practices or employee's perceptions of practices. We recognize that agile workers implement the information received from managers, therefore it is important to understand how they make sense of the managerial communication.

1.3 Research Purpose

The purpose of this study is to contribute to theories of agile work and communication by providing insights on how agile workers make sense of managerial communication. Several audiences can benefit from this research. First, agile workers will gain insights into the way they understand the managerial communication. Moreover, it will also help management understand how their communication impacts upon agile workers. Finally, we hope to contribute to literature on agile work and communication by encouraging further studies from workers' perspectives.

1.4 Research question

This research project aims to answer the following question:

How do agile workers make sense of managerial communication?

Thus, in order to understand how agile workers make sense of managerial communication, the study approaches the question from different directions. First, we look into how the employees make sense of the communication process and second, we look into the communicating channels, to explore how they understand the communication they receive.

1.5 Outline and context of the research project

The literature review will guide the reader through the research that has been conducted within the fields of agile practices, Scrum (an agile working method), the tension between self-organized teams and managers, and then about agile and communication. This will be followed by the methodology chapter, which provides information about the ontological and epistemological stances of our research approach. Further, we will explain how the empirical material is collected through semi-structured interviews and how the hermeneutics analysis is conducted. In the analysis, we will answer the research question on how agile workers make sense of managerial communication and present the two main findings. Tension between the self-organized teams and their managers will be discussed, then the need for managers to use mixed communication channels will be brought forward. Finally, the thesis will conclude with a summary of our findings, as well as their repercussions for theory and practice.

2 Literature Review

In this chapter, we will explore previous research and literature that will help us answer our research question, "How do agile workers make sense of managerial communication?" The first section will explain the concept of agile practices and will also include a section that explains Scrum, which is an approach within agile practices. The second section will explore the tension between self-organizing teams and managers while the third section will connect the concept of agile practices and communication. The fourth section will summarize this chapter.

2.1 Agile practices

Traditional methods had several disadvantages that include, for instance, the great planning efforts required and the fact that a lot of resources are spent even before the project begins (Cervone, 2011). This required organizations to find more effective ways for developing software that would allow them to be more dynamic within their projects. As a response to the changing needs, agile practices started taking shape in the mid-1990s, especially within software companies (Williams, 2012). Thus, agile practices are supposed to be more adapted to the changing environment that organizations today now are facing. In addition, Barlow et al. (2011) argue that adopting agile practices will lead to increased competitiveness, improve processes and also reduce costs. Boehm and Turner (2005) define agile practices as "lightweight processes that employ short iterative cycles, actively involve users to establish, prioritize, and verify requirements, and rely on a team's tacit knowledge as opposed to documentation" (p30). Furthermore, Stoica et al. (2013) argue that some of the characteristics of agile development are, for example; medium or low scale projects, responding quickly to rapid changes, high customer involvement, small teams, low costs and a high degree of social interaction.

The agile manifesto, which is now regarded as the foundation to agile practices, was developed in 2001 by 17 software developers in order for organizations to have an alternative to "document driven, heavyweight software development processes conveyed" (Highsmith, 2001, p1). The agile manifesto consists of 12 principles that dictate how an agile worker must perform. Medinilla (2012) summarizes them as "the agile principles establish that this kind of

process must be performed by a motivated, self-organizing team of developers that is collaborating daily with business people, works at a sustainable pace, actively seeks face-to-face communication, strives for technical excellence, and frequently reflects on how to improve, simplify, maximize value, and reduce waste" (p43).

All of the 12 principles (as seen in Appendix 1) are not of importance to our research project since most of them will not help us answer how agile workers make sense of managerial communication. Although, three principles are of value to our research and they are as follows;

1. Business people and developers must work together daily throughout the project.
2. The most efficient and effective method of conveying information to and within a development team is face-to-face conversation.
3. The best architectures, requirements, and designs emerge from self-organizing teams.

(Beck, Beedle, van Bennekum, Cockburn, Cunningham, Fowle, Grenning, Highsmith, Hunt, Jeffries, Kern, Marick, Martin, Mellor, Schwaber, Sutherland & Thomas, 2001)

In other words, the agile workers work in teams and those teams need to communicate with business people, which include managers, on a daily basis. The most effective way of communicating is through face-to-face interactions between the team members (Beck et al., 2001). Moreover, self-organizing teams means that the teams themselves are responsible for deciding how they are going to work towards completing the task given to them by their manager. Being self-organized, while at the same time having a manager could result in conflicts and tensions. This tension between managers and self-organizing teams will be explored further in section 2.2.

The principles mentioned above should work as guideline for organizations (Dingsøyr, Nerur, Balijepally & Moe, 2012) that develop software in an environment where organizations have to respond quickly to changes in customer's needs. In addition to the principles, the founders of the manifesto have articulated the purpose of the manifesto, based on four values. Firstly, it is more important to focus on the individuals and the interactions rather than the processes and tools (Beck et al., 2001). Secondly, it is important that the development team focus on the actual software they are developing, rather than spending time on documenting what they are doing (Beck et al., 2001). Thirdly, reducing formalities and increasing customer involvement

in the development process to allow the customer to require changes during the development phase of the software (Beck et al., 2001). Fourthly, instead of following a plan, the development team should be ready to respond to changes required by the customer (Beck et al., 2001). Even though there are both values and principles that an organization should adopt in order to become agile, there is of course more to it than that merely following the principles. Medinilla (2012) argues that in order for organizations to become agile they need to live the principles and values articulated in the agile manifesto. Most of the agile communication literature tends to acknowledge the importance of the agile manifesto.

There is much research that highlights the strengths of agile practices (Barlow et al., 2011) but there are also weaknesses to this approach. Both Barlow et al. (2011) and Turk et al. (2002) argue that agile practices do not work as well in large scale or complex projects as it does in small- or medium-sized projects. In large scale or complex projects, the need for detailed documentation increases in order to reduce the risk of misunderstandings (Barlow et al., 2011). As agile practices focus on as little documentation as possible, this could lead to problematic situations as mentioned before. Moreover, if the project is large the time it will take to complete the project might be difficult to estimate since agile practices promote an adaptive environment as opposed to having a plan (Barlow et al., 2011). Likewise, the amount of resources required for a large project might be difficult to estimate for the same reason. Thus the weaknesses of agile practices can in some cases be linked to the scope of the project.

There are several different approaches for an organization can take in order to follow the principles and values mentioned above. Organizations can, for example, adopt approaches of agile work such as Scrum, Adaptive Software Development (ASD) or Extreme Programming (XP) to mention a few (Stoica et al., 2013). Even though the approaches might differ in practice they still share common features such as "permanent communication, planning, testing and integration" (Stoica et al., 2013, p72). In our research project the focus will be on Scrum since YAF use that approach in their agile practices.

2.1.1 Scrum

The Scrum approach can be defined as a "framework within which people can address complex adaptive problems, while productively and creatively delivering products of the highest possible value." (Schwaber & Sutherland, 2013, p3). In other words, Scrum is used as

a framework to make agile workers collaborate together as a team and create products in a short time cycle. Stoica et al. (2013) argue that Scrum consists of two main elements - team autonomy and adaptability. This means that the project manager decides what tasks the team should work on but that it is the team that has to decide how they should work in order for the task to be completed.

In order to complete the task, the Scrum team is divided into smaller entities - the product owner, the Scrum master and the development team (Schwaber & Sutherland, 2013). What these roles include might differ between organizations, as each organization should adapt the Scrum team to the needs of the organization. Though, in general, it is the product owner that communicates what the task is to the development team and the Scrum master. The development team, in which the Scrum master is included, consists of the developers and testers that develop the software (Schwaber & Sutherland, 2013; Cervone, 2011). The Scrum master has a special role within the development team, which includes the responsibility of making sure that everyone in the team understands Scrum and also that it is enacted (Schwaber & Sutherland, 2013). The development teams consist of agile workers and for this study we also regard the Scrum master as an agile worker. In YAF, where we collected our data, the focus is on the development teams and the Scrum masters since the research project is about understanding how agile workers make sense of managerial communication.

In addition to dividing the Scrum teams into smaller entities, there are also certain features that the teams should engage in order to work agile. Those features include, for example, daily Scrum meetings, sprints and retrospectives. At the daily Scrum meetings the development team discuss the progress of the project (Pikkarainen, Haikara, Salo, Abrahamsson & Still, 2008). In order to clarify what has to be done in the project, the development team uses a status board on which all of the tasks that need to be done are written. Sprints refer to the amount of time the development team spends on a project (Schwaber & Sutherland, 2013). A sprint is usually no longer than one month (Schwaber & Sutherland, 2013). Within the time frame of the sprint the development teams task could be that they should develop certain features for a particular software (Schwaber & Sutherland, 2013). The next sprint could then, for example, include the development of more features for the same software. During the retrospectives, the teams are evaluating themselves and the sprint to detect any mistakes or issues that need improvement (Schwaber & Sutherland, 2013).

The communication between the managers and the teams is important in order for the project to be completed. The nature of agile practices suggests that the teams should be self-organizing and therefore should organize themselves, which could be conflicting with the fact that the teams still have managers that they communicate with on a daily basis. Therefore, the next section will present the relationship between self-organizing teams and managers.

2.2 Self-management teams vs managers

Nowadays, more employees are well educated and that means that modern organizations today need to rely more on creating a community rather than rules (De Ridder, 2004). Alvesson (2004) defines these modern organizations as knowledge intensive firms, which rely on knowledge-based products, extensive communication for problem solving, a high degree of autonomy and downplays organizational hierarchy. Thus it implies that well-educated employees, whom Alvesson (2004) defined as knowledge workers, require more independent work and more self-management than before, especially when a software development organization follows agile practices (Medinilla, 2012).

Self-organized teams have been mentioned as one of the Agile Manifesto principles according to its importance in software development organizations (Beck et al., 2001). Self-organized teams have the ability and authority to make decisions and cope with emergencies and changing demands, and "self-management means that the team can decide on what product to build, which markets to enter, which clients to approach, or when to spin off a company" (Medinilla, 2012, p60).

Although software companies are trying to replicate the environment where teams are self-organized and empowered, they are still facing the struggles of having managers at the same time (Medinilla, 2012). Medinilla (2012, p54) asks the question: "what if the team decides to do something that the company doesn't like?". Further, Medinilla (2012) also argues that managers have a command and control characteristic, which does not go well with self-organizing teams who set their own goals and purposes. If managers impose deadlines and decide what the teams should do, this will demotivate the team since someone else made the commitment for them (Schwaber, n.d.). Thus a manager has to perform his job in an agile environment where he has to deal with self-organizing teams who create complex and

knowledge-based products (Medinilla, 2012). In addition, Alvesson (2004) argues the conflict between knowledge workers and bureaucratic modes of control can be solved if the organization meets the knowledge worker's expectations and roles. Further, according to Sumukadas and Sawhney (2004), managers should not be completely excluded, but the way managers interact with teams should be changed from controlling the team, telling the team what and how they should do, to empowering and coaching the team.

Self-organizing teams require collaboration, flexibility and cross-functionality (Bridger, Breu & Hemingway, 2001; Medinilla, 2012). Cross-functionality refers to the fact that team members are specialized in different areas, which allows them to get a more rounded vision of the project through understanding multiple perspectives (Medinilla, 2012). Likewise Schwaber (n.d.) argues that self-organized teams are cross-functional and based on doing work at hand. For example if a tester has extra time then he or she can help a developer who is overwhelmed in the work at hand.

The smaller the size of the teams, the faster the pace of the communication and collaboration could be (Misra, Kumar & Kumar, 2009). Likewise Medinilla (2012) argues that self-organizing is easy for a group of five but not for a group of two hundred. Thus, according to Medinilla (2012) the bigger the team, the more the agile manager has to coordinate and align the teams with a common purpose. On the contrary, Schwaber (n.d.) argues that the smaller the team, the less productive they will be compared to a large team. Layman, Williams, Damian and Bures (2006) argue that even if the team is large and not located in the same place, the use of informal communication can still be leveraged to reduce successful projects. Therefore, communication, especially face-to-face, is an important factor in agile practices in order to increase the collaboration between all members of the development teams (Sharp, Robinson & Petre, 2009). Thus this will decrease the time spent on taking decisions between the members (Misra et al, 2009).

As mentioned before, working agile requires a high degree of interaction and communication within the team and with managers involved in the project. Therefore, the next section will explore the link between agile and communication.

2.3 Agile and communication

Scholars and practitioners have addressed the importance of communication in achieving success in agile software development projects from different perspectives. For example some researchers acknowledged the importance of the working environment and the office layout in achieving success in agile software development projects (Mishra & Mishra, 2009). Others acknowledged the importance of physical artifacts and tools on agile practices success, such as whiteboards, story cards and status boards; where the status of the project is written upon them (Sharp et al., 2009). Furthermore, others acknowledged the importance of face-to-face communication on agile practices success such as Holzmann & Panizel (2013). However our aim in this research project is to understand how agile workers make sense of managerial communication.

Effective communication is when people communicate together in order to get the job done (Ambler, 2005). Other scholars call it rapid communication, which allows the cutting down in time spent on a decision (Misra et al., 2009). Therefore effective communication is critical to the project success where multiple stakeholders are involved, such as in agile software development projects, where timing is the key driver (Mishra et al., 2012). In addition, Holzmann and Panizel (2013) also found that effective communication is a critical success factor for the agile software development project and a fundamental requirement for agile methods.

Communicating face-to-face is one of the critical factors that lead to the agile project success (Mishra & Mishra, 2009). According to the media richness theory, face-to-face communication is one of the richest media. According to Daft, Lengel and Trevino (1987) face-to-face communication is based on instant feedback, in which messages can be adjusted and clarified instantly, and multiple cues, in which body gestures and voice tone can be shown. Likewise, Hummel et al. (2013) emphasized the importance of face-to-face communication in agile methods: "[a]gile systems development (SD) promotes a shift from the traditional, document-driven communication paradigm towards more informal, face-to-face communication" (p343).

Mishra and Mishra (2009) claim that "[f]ace-to-face communication is not free from pitfalls" (p.441). Further, they argue that low rich media such as written documentation can complement rich media communication such as face-to-face communication. Other scholars

have also argued that documented media should not be ignored and should be used to complement face-to-face communication. Law and Charron (2005) argue that, although agile practices require working software and interactions over comprehensive documentation, minimal documentation is encouraged. This view has been supported by Sharp et al. (2009); they also acknowledged the role of physical artifacts, such as a story cards and status boards where the status of the project is specified, in facilitating the process and enabling a shared understanding of the project.

Others argue that the choice of communication channel is contingent to the situation. Ambler (2005) states that communication channels should be used according to the current situation; sometimes face-to-face communication is better suited while in other situations e-mail or writing a document might be a better option. This view has been supported by Hummel et al. (2013), who also argue that face-to-face communication should be used when clarifying situations with high ambiguity while mediated media, such as e-mail, should be used for routine and less ambiguous situations. Therefore, since agile software development projects work in highly turbulent environments where ambiguity is high, the link between agile software development projects and face-to-face communication is strong (Mishra & Mishra, 2009).

The physical design of the workplace, where agile workers are co-located in the same area, also plays an important role in the effectiveness of the communication, and leads to the success of the agile software development (Mishra & Mishra, 2009). This goes in line with Pikkarainen et al. (2008) who also argue that agile practices, such as the office layout and face-to-face communication, have positive effects on communication and also on information transfer. Due to the fact that agile software development is based on tacit knowledge and the interaction between individuals, Law and Charron (2005) found that the co-location of the team, where the whole team sit in an open environment and work in the same area, is an important factor for the sharing of knowledge between individuals.

Communication does not only play a role in agile development but also in improving quality. For example, if the Scrum Master is not available close to the team in the same area, it could reflect negatively on agile projects by affecting quality and productivity (Mishra & Mishra, 2009). Likewise, Hummel et al. (2013) argue that a distributed team could lead to miscommunication because of language and cultural barriers. However, on the contrary

Layman et al. (2006) found that these barriers should not be a problem and can be overcome, "[w]e believe that despite barriers of time, language and distance, the use of informal communication-centric practices can be leveraged to produce successful projects" (p792).

Team size is also one factor that achieves effectiveness in communication, thus achieving success in the agile software development project. Misra et al (2009) argue the smaller the team size; the more the face-to-face communication and interaction will increase. Similarly, Hummel et al. (2013) argue that communication is easier when the number of team members is small, as this increase face-to-face communication, which leads to building of the tacit knowledge. As a result, focusing on communication rather than the process itself allows the teams to be more agile and effective (Mishra & Mishra, 2009). Our aim in this project is to explore how agile workers make sense of this link and of the communication that is received from their manager, whether it is in terms of the content or channel used.

2.4 Summary

In this section, we reviewed agile practices and approaches, specifically Scrum that assist software companies in adapting to the changing environment, and producing their products in short life cycles. Also, Scrum gives agile teams independence and autonomy in their task toward their managers. Thus, the tension between self-organizing teams and managers was also reviewed, because it is based on the fact that agile teams are self-organized and have managers at the same time. Then the link between communication and agile was reviewed, where communication has been acknowledged as one of the main drivers for the success agile practices. The next section will provide the reader with the methodology approaches used in this study.

3 Methodology

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In this chapter, we will provide an overview of the methodological stances used in this study. It will start by presenting the qualitative study and the abductive approach. Thereafter, we will present the paradigms to explain our ontological and epistemological stances regarding the research. The chapter will continue with the research design, as well as how the empirical material was collected and analyzed. Finally, the issues of reflexivity and credibility will be discussed.

3.1 Qualitative research with an abductive approach

Qualitative research "attempts to understand and make sense of phenomena from the participants' perspective" (Merriam, 2002, p6). In our research, our aim is to understand how employees make sense of managerial communication. Furthermore, the abductive approach was used, meaning that the researchers go from an observation of a hypothetical overarching pattern that accounts for the reliable data and seeks to explain related evidence (Alvesson & Sköldberg, 2013). An abductive approach also means that the research should have a starting point in the existent theories within their field, followed by the collection of the empirical material, and thereafter going back to the literature to complement the findings. Hence, it allows researchers to go back and forth between external knowledge such as literature and one's own data. This study drew upon previous theories on agile communication and used it as a means to deepen our understanding of the data.

3.2 Ontology and Epistemology

According to Bryman and Bell (2011), ontology is a philosophical belief that concerns the nature of social reality or being. The core consideration in ontology is "whether social entities can and should be considered objective entities that have a reality external to social actors" (Bryman & Bell, 2011, p20), or whether social constructions are constituted by perceptions and behaviors of social actors (Bryman & Bell, 2011). According to Alvesson and Sköldberg (2013), our ontological stance is that the social world is an abstractive world, and there is not an absolute truth. However, the world is complex and there are the multiple truths depending on social actors' perspectives, behaviors and interactions (Alvesson & Sköldberg, 2013). In

this project it was important to study the world as containing multiple truths since we are interested in how agile workers make sense of managerial communication, and we believe it to be highly subjective. We recognized that communication issues are socially constructed products that are constructed by individuals from their social experience (Bryman & Bell, 2011). The way agile workers make sense of managerial communication can be only understood from the point of view of the individuals who are working within this activity (Bryman & Bell, 2011). Thus, we believe that the values, actions, and how the individuals make sense of communication are not pre-given, fixed and the same for each individual.

Another philosophical belief is epistemology, which concerns the nature of knowledge (Bryman & Bell, 2011). The core issue of epistemology is "whether the social world can and should be studied according to the same principles, procedures, and ethos as the natural sciences" (Bryman & Bell, 2011, p15). Our epistemological position held for this study is interpretive, since the main focus is on the understanding of human behavior and learning of how individuals make sense of their experiences and the world around them (Bryman & Bell, 2011; Merriam, 2002). Meanwhile, taking an interpretive approach allowed us to be close to the situation to interpret life through the human experience (Bryman & Bell, 2011). In our study, we believe that agile workers make sense of, or understand, managerial communication based on their personal experience and world-value. Additionally, the interpretive approach helped us to formulate our research question, how we designed our research and how we collected the empirical material and analyzed the data, as we will elaborate on later in this chapter.

3.3 Data collection - interviews

In total, we conducted twelve in-depth interviews in which we interviewed six agile workers, one group with four agile workers, four managers and the head of internal communication. The interviews with the agile workers have been the foundation of our research project. Further, the interviews with the managers and the head of internal communication were used as support in order for us to gain a broader view of the tension. We spent three days in Stockholm, during which we conducted all of the interviews. The interviews were conducted with a semi-structured approach, meaning that our interview guide included open-ended questions (Creswell, 2003). This semi-structured approach allowed us to be flexible and responsive to the issues and concerns that participants felt were important. After each

interview we debriefed how we thought it went and, when necessary, modified the interview guide. At the end of each day we had a more in-depth discussion about how the interviews went. The interviews lasted between 30-60 minutes. Additional information about the interviews can be found in Appendix 2.

Our contact person, who works in the organization, selected the interviewees by sending out a request to different agile workers and managers. After our contact person had received the answers from the participants, she organized the interviews to take place during the three days we spent in Stockholm. The participants were located in three different countries - Sweden, Germany and Canada. Face-to-face interviews were conducted with the participants working in Sweden as well as with one participant from Germany that was visiting Stockholm. Even though it would have been more preferable to conduct all interviews face-to-face, it was not possible to arrange due to the location of the interviewees. Hence, some of the interviews were conducted via conference call instead. Due to the fact that many of the interviews were conducted via conference call instead of face-to-face, we missed out on seeing body language and the connection between both actors when engaging in face-to-face interaction. Although the distance between the interviewers and interviewees might have affected their responses, we still felt that the interviewees were comfortable in talking to us.

3.4 Data analysis

After having collected the data, we started by transcribing all of the interviews. Then, to obtain a general sense of the material, we read through the transcripts several times. Since we conducted qualitative research with an abductive method, and since the abductive approach is closely related to hermeneutics (Alvesson & Sköldberg, 2013), we decided to use hermeneutics to interpret the transcripts. Hermeneutics is a method for analyzing qualitative research, which focuses on the primary meaning of data, especially textual data (Bryman & Bell, 2011). The purpose of using hermeneutics is to aid us in understanding what people say and do, and why. During the analysis, we aimed to find the salient themes for each interview related to how agile workers make sense of managerial communication. In this process, we also searched for repetition, differences and similarities, connections and metaphors that the participants used to address their thoughts and experiences. For example, some described the relationship between the agile workers and the managers with the metaphor of a boyfriend-girlfriend relationship. Further, the agile workers' perceptions differed dramatically in terms

of how they thought the communication with their manager worked. Some did not see any issues, while others identified major issues.

After having conducted our individual analysis of the transcripts, we did another analysis as a group where we discussed and brought our ideas together. In order to combine our different views we put them together in a document to summarize our notes according to the findings. Having all of our different views in one document provided us with an overview that made it easy to work with the findings and to combine them into two findings. Our first finding was that there was a tension between management and the self-organizing teams. Our second finding regards the manager's use of communication channels. Based on agile practices, face-to-face communication is the main method use to communicate, however, we found that agile workers perceived mediated channels, such as email, is an important channel as well.

3.5 Reflexivity

Alvesson and Sköldberg (2013) argue that in order to improve the quality of research the researchers need to be reflexive. Being reflexive means that the researchers should reflect upon their own interpretations. In addition, it also refers to the process of examining the relation of both the researcher and the subject of study (Alvesson & Sköldberg, 2013). Therefore, being reflexive has been one of the central themes throughout our research. The knowledge, from a reflexive position, is based upon the researcher's culture, value and social context (Bryman & Bell, 2011).

In our research project we have worked with reflexivity through conducting the analysis of our empirical material in four steps. First, each one of us did our own analysis of the empirical material. Second, we discussed our separate analyses as a group and combined our thoughts and ideas in an analysis. Third, after having done the analysis together we then critically viewed it to detect any mistakes or misinterpretations. Fourth, we read through our final analysis chapter in order to make sure that there were no misinterpretations between the three of us. This is in line with what is argued by Alvesson and Sköldberg (2013) who says that reflexivity can occur in the final textual product as well as during the research project.

Another aspect of being reflexive is that it is crucial for us as researchers to be aware of our biases and assumptions in order to manage them and use them to increase the quality of the research (Alvesson & Sköldberg, 2013). For example, before our study, we identified that we

had assumptions about the use of communication method. There are a number of communication methods such as different forms of written communication and face-to-face communication, and we thought face-to-face communication would be the best and most effective method of communicating. However, after investigating, we found that it was not accurate, and that communicating through a variety of different methods depending upon the situation was much more effective than only communicating face-to-face.

3.6 Credibility

As Bryman and Bell (2011) state "if there can be several possible accounts of an aspect of social reality, it is the feasibility or credibility of the account that a researcher arrives at that is going to determine its acceptability to others" (p396). Hence, in order to establish the credibility of our findings, we tried to manage our biases and raise the quality of our study by engaging in investigator triangulation. Investigator triangulation refers to using more than two researchers to analyze and interpret the same study in order to confirm our findings (Hussein, 2009). Since we were three researchers working on this project, it allowed us to use investigator triangulation to analyze the data and also verify our findings.

At the same time, we have been transparent in our study through giving details to readers about both our empirical data and details about how we conducted our research in order to address the issues of reliability and validity. We believe that the methods of investigator triangulation, transparency as well as being reflexive ensure the quality and thoroughness for our study.

3.7 Summary

In this chapter, the first section provided an overview of the interpretive approach used in this study, since the focus of this study is on the agile workers' perspectives of managerial communication, which are based on their experiences. The second section clarified the way we collected our data, which was by conducting semi-structured interviews via conference calls and face-to-face interviews with agile workers. In addition to this, we interviewed managers, whose interviews were used to provide a different perspective of the tension. The third section showed how we analyzed the data by following hermeneutics in order to interpret the empirical material. The fourth section explained how we were reflexive and this was demonstrated in two ways; first by reflecting on our interpretation, second by holding

biases and assumptions. The last section highlighted the issue of credibility. Further, it demonstrated what credibility was by using three researchers to analyze and interpret the same study. In the next section the interviews will be analyzed and the two main findings will be explained in depth.

4 Analysis

In this chapter we will present our analysis according to our two findings that answer the research question: "How do agile workers make sense of managerial communication?" The first finding we identified regards the tension of being self-organized or autonomous while at the same time being managed. This tension leads to the next finding, which is that within agile practices there is a need for managers to use mixed communication channels when communicating with agile workers. Both of these findings are based on the perceptions, understandings and meanings that the agile workers ascribe to these two themes.

4.1 The tension between self-organized teams and management

After having conducted the analysis of the interviews, we identified that there was a tension between the self-organized teams and the managers. The nature of the self-organized teams means that the teams should work independently and manage themselves. As the teams in YAF still have managers we realized that this led to a tension between being self-organized and, at the same time, being managed. In order to explore this tension in depth, the analysis of this tension is divided into two sections. The first section will explore how the agile workers view their managers as either an obstacle or an assistant while the second section will explore the reasons for why the agile workers have these contrasting views.

4.1.1 Managers as obstacles vs. assistants

Sharp et al. (2009) suggest that agile working practices de-emphasize hierarchy and emphasize feedback and collaboration, since it depends heavily on face-to-face communication. Thus, hierarchy may be an obstacle for face-to-face communication, which is one of the manifesto principles. One of the agile workers interviewed had a major issue regarding the managerial communication compared to other agile workers. That agile worker viewed managers as obstacles, whilst the other agile workers, who did not have the same issues with the managers, viewed them as assistants rather than obstacles. When we asked that agile worker about any struggles he faces concerning the managerial communication, his answer was that managerial communication is more as a command and control mode which

hinders them of talking to other teams in the organization. Therefore this issue does not go in hand with agile practices:

> *"We need to open up and let people talk to each other without so many things or rules blocking it, corporate directives and so on."*

This comment gained our attention since the way he views the managerial communication does not align itself with agile practices. The agile manager should adapt to the agile environment and encourage collaboration between workers rather than blocking it (Medinilla, 2012). Therefore in an interview with a manager, we asked him why he sometimes does not involve teams in decisions. He stated that even though decisions should be taken with a bottom-up approach, the development teams might not have the right information to make all of the decisions themselves; therefore, the teams cannot decide everything:

> *"...I think it's one of those things that you need to master and say that... lets be realistic and say that we cannot decide everything in the teams. Some things also needs to be decided top down... even if it just because... okay... that is where we have the right information. So having the right information is something that is sometimes ignored in this company, and these discussions saying that if it is not decided by the feature team or the Scrum team then it is not the right decision.... "*

This manager had a completely different view to that of the agile literature. He stated that the agile perception of not having managers to take decisions is not true, because in some situations agile workers do not have all the information needed to take a decision. His view does not go in line with Alvesson (2004) who argues that knowledge workers are more knowledgeable in the tasks in hand than their managers. Similarly, Medinilla (2012) argues that agile workers are more knowledgeable than their managers in the time and money required to complete a task. In contrast to this, the manager who stated that there are some types of decisions that should not be taken by agile workers due to lack of the information needed for these decisions, also said the following:

> *"Yeah the principle lets not have managers take decisions on behalf of developers. And developers know best what they need to decide to have their problems with good quality or ready faster or whatever. And that as such is*

true, but there is also some types of decisions where there is not enough information for that on that level, even conflicts in interests and then you take decisions on a different level and that should not automatically be wrong. We should not feel bad about that and that is I think sometimes still a challenge."

According to the previous agile worker whom we interviewed, he is against the view of having a manager. However, other agile workers acknowledged the importance of managerial communication in order to obtain information about how things can be done, and viewed managers as an assistant. Likewise, when we asked one of the agile workers about whether managers should be included in their meetings, he stated that managers should be included in the meetings so that all agile teams will be on the same platform, by providing job-related information:

> *"Yeah yeah… so that everybody in the same platform, when you start you should or you have to do the job, from where you have to pick the job, how all team would behave."*

Medinilla (2012) argues that the larger the team, the more the agile manager has to coordinate and align the teams with a common purpose. This view goes in line with one agile worker, who stated that their manager will help the team to know what is happening in the whole project, since from his point of view managers have more information about the whole project than the team, thus this will increase the integration between teams:

> *"They can give a little information to the rest of teams for what is happening for themselves. So this way we would have more information about what happening to the whole project."*

Moreover, Medinilla (2012) stated that an agile manager should develop the employees by providing them with information about the project and what to do. Likewise, Sumukadas and Sawhney (2004) stated that managers should not be excluded from the agile environment, but the way they act with employees should change by being a coach and telling employees what to do and how to do it, rather than being directive and giving them orders. Similarly to another agile worker who, when asked how he perceives the managerial communication, stated that it is important in terms of instructions which are based on what to focus on:

"Its good to bringing everyone up to the same level. The important parts are up to actually implement the practices and show us which parts to focus on and so on. And that is the important factor."

Not only team members acknowledged the importance of having managers. Also, a Scrum master, who is the communication channel between managers and team members, stated that the message is clearer if it is communicated directly from managers to team members since managers are the source of the information:

"I would like the manager to listen maybe to the team more often, since I am the Scrum master I am like the communication channel, that is my role that is ok, sometimes they do it, but they can't do it really standard, but they could maybe do it more often and have it like more direct from them. It's not like they are not talking to them but it's me condensing the information, and that is good that they get the original input from the team, then you get like what is emotion to people have there, sometimes it would be good, it would be not reached by me but more direct between manager and team."

As mentioned in this section, agile workers regard managerial communication as important. However, the tension between the self-organized teams and their managers seems to increase due to the fact that the manager's role in relation to the self-organized teams might not be clearly articulated. Some argue that managers were obstacles for them in order to perform their work efficiently while other agile workers viewed their manager as an assistant who involves them and makes it easier for them to do their work. Thus, agile workers have completely different understandings and expectations of what the managers should and should not do in terms of communication. The next section will explore these different views in depth.

4.1.2 Managerial communication is not satisfying

Most of the agile workers we interviewed stated that they had issues with managerial communication in regards to being a self-organized team. Some stated that they lacked managerial communication due to the fact of being self-organized and that there were misunderstandings concerning what the managers' role should be. However, a few others did not have issues regarding being self-organized and the managerial communication. Layman et

al., (2006) argue that self-organized distributed teams do not affect agile practices negatively and do not lessen informal communication practices. On the contrary, Misra et al. (2009) argue co-located teams are considered an important vehicle of communication, and distributed teams affect the communication negatively. Similarly to these scholars, one of the agile workers stated that being part of a distributed team would decrease managerial communication in terms of what other parts of the teams are doing, what they are developing, and this will detach them from the big picture of what is happening in the whole project:

> *"But now we are just getting any [information]... and at least people are not really knowing what's happening or why they are doing thing and that even worse. Actually we are working in a really large project and we don't really know what the rest of project is doing. We don't know what people are developing and why they are developing, and how it is going."*

This view is similar to another agile worker who stated that being self-organized and autonomous would keep him isolated from managerial communication in terms of what is happening in other teams who work on the same project. According to him, this relates to the size of the team, which is a factor that decreases the level of managerial communication; it will increase in smaller teams and decrease in larger teams. His view is reflected by Barlow et al. (2011) and Turk et al. (2002) who argue that agile practices do not work as well in large scale or complex projects as it does in small- or medium-sized projects:

> *"That's the point of making our leader. That's more tricky to get project wise information. It's more difficult to understand what happening to the whole project. The good thing of agile is to much easier to get information in what happening in your team. Our team is 5 to 10 people. It is easier to know what happened in the team now. But it is much more difficult to understand what's happening in the whole project because we had a person, that was a project manager who was going in between each team and he was finding time in each team and he was serve as the point of contact between each team. And now we don't have the point of contact between each team. And it is much more difficult to get information from other teams. But it is easier to get information from your team."*

As stated before, being part of self-organized teams is a disadvantage for most of the agile workers, since it will lead to a lack of information from managers. Another agile worker stated that being in a self-organized team, will not only reduce managerial communication, but lead to the manager not communicating at all. And this is one of the issues of being self-organized:

> *"But I think the main issue is somebody isn't communicate at all, which is the issue we have."*

Scholars such as Medinilla (2012) acknowledged the importance of giving agile teams high autonomy in agile environments. His view has been supported by De Ridder (2004), who also states that more employees are well educated and that means that modern organizations need to rely more on creating a community rather than rules. However, for many agile workers, being fully self-organized is a drawback for many reasons. The first reason is, as one of the agile workers stated that managers assume that teams will approach each other concerning issues related to the whole project which they are involved in, thus managerial communication will decrease in terms of meeting with other groups who are involved in the same project:

> *"I guess but I am lacking a group meeting, since I returned in February there was no meeting of the complete group."*

The second reason as to why being self-organized is a drawback, is illustrated by another agile worker. He stated that there is a lack of managerial communication about what is happening in other teams in the same project. And also it is only restricted with handing out assignments and when they are close to deliver the product. According to him managers don't give time for everyday communication. He believes this is due to the fact of the assumption which managers hold that that teams are self-organized. Therefore they have all the information they want about other teams in the same project:

> *"There is a general lack of communication. Teams are quite isolated, even more so since we started with an agile way of working where the teams are, they expect us to be more independent. The organization that I am in has grown a lot the past year so the managers and the project managers don't really have time*

for everyday communication with the teams. So I would mainly say that it consists of handing out assignments and when we are close to delivery.”

This agile worker's view is similar to another agile worker's view, who argued that being self organized will decrease the managerial communication, due to the fact that teams are self-organized. Thus, managers will assume that teams do not need much support and instead of meeting with the teams every week, they meet with them every three months in order to have knowledge of what teams are doing and what problems they have. This will increase the time spent on decision-making, which does not go in hand with agile way of working. Further, this will decrease trust in managers and will result in a dysfunctional relationship between the teams and the managers:

"The project managers were coming every week and asking how we were doing, and having more detailed knowledge of, and activities that were currently going on. And now it's more like we get an assignment and three months later they follow up, are you delivering, what kind of problems did you have.”

Lack of managerial communication does not only regard receiving information about the whole project, but also regards getting information about the team itself, which will result in a lack of clarity in terms of current ways of working, current situation and deliveries. This was the answer of another agile worker whom we asked about if he is satisfied with the managerial communication:

"There's a lot of unclarities of current ways of working, what to test, what are the expectations for our deliveries and its moving all the time and its hard to know what the current expectations and current situations is.”

Another agile worker stated that being self-organized would decrease managerial communication in terms of documentation, therefore leading to misunderstandings of what is important to whom and could lead to chaos if the information is sent to the wrong person. His view goes in line with Barlow et al. (2011) who argue that the decreasing use of documentation, especially in large projects, will lead to a misunderstanding:

"No, maybe it is what I touched before. On management level there needs to be more deeper analysis on what information that goes out, and how, how to

training newcomers and current ways or working or to establish channels for that. I think that's happening a bit ad hoc and maybe not putting enough work into establishing those channels. I mean not only to put a lot of information to everybody but to channel what information should go out."

When we asked him about the reason why the information from managers sometimes might not reach the right person, he claimed there was a disadvantage to being a member of large projects, because from his point of view, managers cannot estimate the amount of information required for large projects. His view goes in line with Barlow et al. (2011) who criticized that in large projects managers will not be able to estimate the amount of the resources required:

"I think it's just that the total sum of the things that needs to be communicated is too great to handle in such a large project. There is not real function for sorting which information is important to whom. Some people get some information and some people get other information, you can't be certain that you know. I mean for ways of working it's we are in that kind of things and homepages... but it's a struggle also to keep that updated and to know who is working on improving what."

The third reason is misunderstanding. As Barlow et al. (2011) shed the light on the risk of misunderstanding as a result of large projects, an agile workers stated that as a result of being self organized, each team will have different and contradicting ideas regarding how to use the project they are working on, instead of a shared understanding about what agile is:

"Different people have different ideas of what is agile, and they have different ideas how to use Scrum how to do the sprint planning, so.. It's right difficult to find... to integrate everybody's opinion and find a unified way, so in this case we miss the line manager maybe to provide some... to coordinate with the whole team, and come up with common way of working agile."

Lastly, what made us believe there was a tension between the self-organized team and the managers in terms of communication, was the answer of one agile worker when we asked her about if she would like to change anything in the communication:

"One thing I would like to know more about if current improvement activities in the project status of what, and what issues that are going around at other people are having problem with, so that we are not working on the same problems at the same time."

Due to the fact that some of the agile workers we interviewed said that there was a general lack of information, this has led them to obtain the information needed through fetching information from other sources than the manager. When discussed with the participants if the communication from their managers was good, some participants argued that it was fine because their seats were very close to their managers. Others said that it was good since their managers were open to answering questions, and if they wanted information, they could go to the office to ask their managers directly. Other participants had negative opinions regarding fetching information, which means that in order to obtain the information they need they have to search for it by themselves. Some participants think the current managerial communication was not good, and that it was difficult to communicate with managers. They cannot receive enough information unless they push managers to give them information:

"I don't know if there is so much good to say about communication right now. I think there are, it's quite lacking, both to goal setting and what is most important now, current obstacles, problems that are concerning many teams. Those types are really hard to communicate for us right now. And it is not information that is pushed, teams need to reach and ask for that information for them."

Another interviewee also said:

"Yeah, but I mean that is only part of the picture. Sometimes we don't get all of the information that way, some of the communication it is that we are searching for the information and going the other way around. Not everything is top down."

We found that in this situation, the team members seem to be in a better position where they could approach managers to provide them with information. On the other hand, this situation also means that in self-organizing teams, managers did not initiate in giving information to agile workers or sometimes they forget to give information to them. Due to the high level of

self-organization in the team, team members are still responsible to approach and fetch information related to them by themselves.

From our interview, when agile workers were asked what they wanted to change with the managerial communication, we received a variety of answers. Some interviewees were satisfied with the communication from managers because they approached managers, such as one agile worker who answered that:

> *"It's fine I see it good, there's not real problem I can identify that still because I talk to the project manager, I talk to the line manager on a daily basis and we are discussing things. So in that direction if you say from manager to me, maybe I'm in a better situation I can approach both of them any time that's the important thing."*

And when we asked this participant what is important for him in order to understand information, he argued:

> *"I approached, see, to get information especially in corporate environment - if you're not asking you're not getting. Something which I've experienced, if I am sitting in front of my laptop nine to five I can keep of doing anything but if I am not asking anyone, things will slowly and slowly move away. So it's person to person, you have to be aggressive to get information to you."*

We believe that one reason why managers do not give agile workers enough information could be because managers do not know everything about the projects. Also, team members are more knowledgeable in what they do than their managers (Alvesson, 2004). Therefore, managers might not know the answer to team members' questions. Thus, when we asked an agile worker if he would go and ask his manager when he was lacking information he said that he would try and get it, but not from his manager:

> *"I do try to get information but not from my manager. I try to get it more from my peers. So more my colleagues involved in my project. So I know what happening, what the other teams are doing, what happening on the business side. I try to get it but not so much from my manager because I just feel uncomfortable to go there and saying we are missing this information, so can you give to us. I'm not even sure they know themselves. Maybe it is worse. It's*

easier for me to approach my peers and talk to my peers than the manager. I also think it is more valuable for me to know my peers than be close to my manager."

The reason why he would not obtain information from his manager was because he felt uncomfortable and he also stated that he did not believe that the manager would be able to provide him with the information he was looking for. He stated as follows when asked why:

"I don't want to be sending a message. You know the job [the manager's job] is communicating certain things. That's the one message I want to be sending. But I don't want to put them into the reality. You don't know what's happening around you. When you do that to your peers, it's ok and they don't have any points over what's going to happen to you. If you sent the message to someone, maybe you are going to shoot yourself in the foot."

Feeling uncomfortable talking to your manager would imply a dysfunctional relationship between this particular agile worker and his manager. A lack of communication will not improve the collaboration, nor does it improve the efficiency of the project completion. As mentioned before, communication is important, especially when working agile. Even though only one interviewee clearly articulated that he felt uncomfortable asking his manager for information, this was still interesting as it is clear example of the tension between being self-organized while at the same time having a manager.

However, inversely to what we have argued earlier that some agile workers stated that there was a lack of communication from their manager and as a result it made it more difficult for them to do their work, some agile workers suggested that too much managerial communication is a burden and also hinders them from working on projects.

Working according to agile practices means that there are several meetings, such as sprint planning meetings, daily Scrum meetings, sprint meetings and retrospective meetings (Pikkarainen et al., 2008) that the teams have to attend. Each meeting has a different purpose. Hence, we believe that all agile meetings are in order to provide a platform and an opportunity for self-organizing teams members to share knowledge and resolve difficult issues as they work with their tasks. However, from our interviews, we found that some agile

workers perceived the meetings as a burden rather than being a good source for receiving information. For example, when we asked a team member about the information he received about agile practices, this participant felt unsatisfied about the agile meetings because there were too many meetings for agile workers. The amount of time spent on those meetings was perceived as too much. As a result, the agile workers did not have enough time to do their actual job such as solving issues:

> *"In the agile way we have a sprint, so in we increased the planning time and that way we have more meetings. We have Scrum backlog tooling, Scrum, sub-Scrum, many others for other meetings, so just to increase the burden of the team because we need to work on the features, we need to solve issues. We don't have time to do these extra things, so first with agile it brings lot of burden to the team, and there's so many meetings so people... I don't think people like it to be honest."*

From this point, we argue that too many meetings not only reduced the work efficiency for the self-organizing teams, but were also perceived as a burden to the team. Self-organizing teams, working according to Scrum, which is an approach to working agile, should choose themselves how they should work in order to complete the task (Schwaber & Sutherland, 2013). Therefore, we think that self-organizing teams need to choose which meetings are best to accomplish their work instead of only following the theory.

Likewise, when we asked participants if they identified any struggles in the communication when working agile, some participants thought that there was too much managerial communication in agile practice. This is another example of how the agile workers believe that the communication is a burden. However, this agile worker points out that there are too many managers that he has to communicate with. Within agile practices there are several managers who are responsible for different areas in the same project, and they all need to be updated with the latest information. Hence, team members need to involve all managers if they want to discuss something or update information. One interviewee answered that:

> *"Yes, I think, you think agile context has so many communication. Like for example the team members they need to report their status to the Scrum master and also they need to communicate with project manager directly. And*

sometimes, they also sometimes need to report to the line manager, so it's just that heavy work for communication wise. It's heavy work for that individuals."

And he also explained why he thinks there was heavy workload for them:

"Sometimes, two, three or four [managers], it's Scrum master, line manager project manager, and the product owner, this what I see, you cannot ask the Scrum master to tell everything because they don't know all the details, sometimes the individuals need to involve in the discussion and communicate with all this managers, the good thing on this is increase the flexibility and project manager can get the some more details and it can get more accurate estimation or more accurate project plan, this is the good thing the bad thing is just so many times spend on this communication thing."

It would appear that high levels of communication is positive for managers because they can receive more details, and based on those details they can develop a more accurate estimation or more accurate project plan. However, we believe it is negative for agile workers because having this many meetings requires extra work from the team members. Further, it will make them feel like they are not autonomous. As a result, 'too much' communication would increase agile workers' dissatisfaction with managers; thereby increasing the tension between managers and agile workers. In other words, too much communication decreases the efficiency, and contradicts the original intention of agile practices, which is to be dynamic and responding to changes quickly. Moreover, as argued by Barlow et al. (2011) agile practices is best suited in small- or medium-sized projects, and therefore it appears that the difficulties mentioned above could be an indication that the project is too large for the managers to be able communicate efficiently to the agile workers. The weaknesses of agile practices, such as the limited use of documentation, could all add to the negative views of the managerial communication, as a larger project would require more communication from the managers. This fact, combined with the fact that the self-organized teams should manage themselves, the tensions between what is needed to a large project and how they should work according to agile practices could be the cause of the confusion between the self-organized teams and managers.

4.2 Mixed communication channels

Our second finding is regarding to face-to-face communication, which provide the agile workers and managers a chance for explanation and give immediate feedback. Mishra and Mishra (2009) stated that face-to-face communication is a critical factor for agile project success. Hence, face-to-face communication has positive effects on the communication process in agile practices. However, Law and Charron (2005) encouraged the use of documentation in addition to face-to-face communication. In our study, after our interviews, we found that from agile workers' perspectives, they need both face-to-face communication and also a mix of other communication channels. Meanwhile, there is limitation to face-to-face communication such as if agile workers and managers are in the different location, they would be difficult to communicate face to face. And during the managerial communication process, email could be another important communication channel in order to minimize the limitation of face-to-face communication. We cannot leave out the contribution of email in the managerial communication in agile practice.

In the interview, some participants believed that managerial communication is a tailored process, which means managers could communicate with them by using different methods based on different situation. For example, managers could use email to communicate with an agile worker who is shy and not good at talking. Therefore, we argue that managers need to choose different communication methods based on different situations in order to make sure that the message is getting through, as one participant argued:

> *"There is definitely not one way. If you try to one way, it doesn't work because people have different situations. How much they can search from the different sources which once you created it is going to be over. You cannot learn any more. So if you have different sources, they might be able to observe more sense. The thing is people are very different…we are not all the same. Certain people are definitely more easy and certain to communication.... I see communication like marketing. People do marketing in many different ways at the same time. The reason why they do that is because they really want to make sure that the messages get through. So if we communicate, if only do it one way, definitely the message don't get through."*

And when we asked him what types of communication suits for agile practices, most of the participants agreed with using mix communication channels, as one interviewee answered:

> *"It's a fabulous belief that communication has to be in different way...I think what we need is the mix things and it to be used as triadic way."*

It is clear that agile workers need a variety of communication methods instead of only one way of communicating. Further, there are limitations to face-to-face communication such as location, especially in a large organization. For example one of our interviewees stated:

> *"Because they [managers] are in different locations for example, in Hungary. I cannot talk to them face-to-face."*

Besides, although all literature we have read de-emphasized email, we found that email is still an important way in order to minimize the limitation of face-to-face communication in self-organizing teams. From our interviews, some agile workers think both email and interpersonal communication were fine for them. Other participants believed that email was a good way for sharing documents and asking senders to provide additional information, especially in a large group. There was one participant who expressed this point very clearly:

> *"..it has a lot of information or you have some documents you need to share. It's the clear way we have to use like... you have to use email..."*

Another participant agreed:

> *"If it's a larger group then I think email is the best but then usually for me if we end up in a discussion then talk to this guy in the email, then I like Lync him or message him directly and then talk to him"*

4.3 Summary
In this section we explained in depth about the two main findings. The first main finding is the tension between self-organized teams and management. In order to explore the finding we used two sub-themes. The first subtheme "managers as obstacles vs assistants" occurs when some agile workers perceive their managers as an obstacle, who block interactions between

members, while other agile workers perceive them as assistants who provide them with information in order to be in the same platform with teams. The second subtheme "[m]anagerial communication is not satisfying occurs when agile workers perceive a lack of communication due to the fact of being self-organized, or inversely perceive too much communication, which is burden on the team and decreases their efficiency instead of increasing it. The second main finding is "mixing communication channel" exhibited by how face to face communication is not the only preferable channel for the agile teams in YAF. As well as face-to-face, mediated channels such as documentation and email are also preferable and should be used by managers. In the next chapter there will be a more in depth discussion on these results and how they relate to the literature.

5 Conclusion

In this final chapter we summarize our research process, the reason behind conducting the study, and also the broader view for our main findings and their relation to the literature. Moreover, we will present our limitations and contributions as well as opportunities for future research.

Agile practices have become important for organizations, especially in the software industry, in order to be able to respond and adapt quickly to the changing needs of customers. The agile approach allows organizations to develop software with low cost, high quality, at a high pace. In order to succeed with agile practices the organization has to be dynamic, meaning that the agile workers should put emphasis on communication, feedback and the interaction rather than focusing on processes and tools. Further, it is argued that agile practices are the most efficient in small or medium sized organizations. The fact that documentation is de-emphasized within agile practices becomes evident when using the approach in large scale or complex projects as the risk of misunderstandings increase.

YAF, which is the organization in which we conducted our research, is a large organization. Therefore it does not fit into the recommendations made by researchers, which are based on implementing agile practices in small and medium sized organizations. Also, literature on agile practices does not focus on the agile workers perceptions on managerial communication, and due to these facts, we wanted to understand how agile workers made sense of managerial communication within this organization. Communication and agile workers are the fundamental factors for agile practices success. Further, agile workers are the implementers of the information received from manager, and the basis for the organization success. Hence, our research question was "How do agile workers make sense of managerial communication?".

In order to get answers to our research question, we were abductive by having a starting point in the existent agile communication theory. We then followed it with the data collection from the agile workers and a few managers and thereafter we went back to the agile literature to complement the findings. Agile workers have different understandings and perceptions of managerial communication. Accordingly, we adopted an interpretive approach.

After analyzing our empirical material, two main findings came to light that answered our question. Firstly, we found that there was a tension between self-organized teams and their managers. Secondly, we found that managerial communication should include a mix of communication channels.

We would like to start our discussion by reflecting upon the first finding:
The tension between the self-organized teams and managers

What we mean by this tension between both parties is that the manager's role in relation to the self-organized teams might not be clearly articulated. Agile teams in YAF are supposed to work independently and manage themselves, yet at the same time they still have managers. Although teams should work independently, some managers are still regarded as an obstacle, due to two main reasons. Firstly, some managers do not communicate at all and this has led to some agile workers perceiving that there is a lack in managerial communication in regard to being self-organized, since managers assume that it is not their role to communicate information to the teams about what is happening in the whole project. This is similar to what Alvesson (2004) stated, when he argued that knowledge workers are more knowledgeable than managers in terms of what needs to be done and how it can be done. Secondly, other managers communicate all the time and this leads other agile workers to view managerial communication as a burden because of too much communication. Literature on agile practices puts emphasis on communication and collaboration, such as the daily scrum meeting (Holzmann & Panizel, 2013), over process and tools. However, it did not take into account that too much communication might decrease efficiency of the agile team.

On one hand, the literature is similar to our findings in that both state that companies might face struggles when both having a manager and a self-organized teams at the same time (Medinilla, 2012). However, it did not indicate that this struggle might lead to managerial communication problems, as a result of the misunderstandings of the roles. On the other hand, literature stated that companies, especially software development companies, should implement agile practices in order to respond to change quickly (Williams, 2012), however it did not emphasis that it might be struggle for large companies. According to our analysis, we found that the size of the company had a great effect on this tension. YAF is a large

multinational company where the tension increases between agile teams and managers because of multiple levels of hierarchy and misunderstanding of roles. Managerial communication problems might lead to isolation between the teams who work on the same project, which as a result will negatively affect the success of the agile project.

Now we would like to reflect our second main finding:
The using of mixed communication channel

Here we mean that agile practices are not only restricted to one type of communication, face-to-face, but in fact utilize other types of communication such as e-mail. According to the literature, informal communication, especially face-to-face communication, is the main key driver for the success of agile projects (Pikkarainen et al., 2008). However, we found that face-to-face is not the only communication that affects the success of agile projects. This means that other communication methods, in particular mediated communication such as email and documentation affect the agile project success especially large projects. This finding is similar to what Ambler (2005) argues in that there is no best way of communicating in terms of channel, since the choice of communication channel depends on the current situation. For instance, some agile workers whom we interviewed preferred face-to-face communication, especially when the message received from manager is ambiguous. Others thought that email is better than face-to-face to receive general, less ambiguous, messages about the whole project that all teams are working on. The agile workers view is similar to that of Hummel et al. (2013) who states that the optimum communication channel depends on what is being communicated.

5.1 Limitations

While conducting the study, we acknowledged that it is not without its limitations. One limitation is that in-depth interviews and their analysis were more time consuming than anticipated. Another limitation is the number of interviews. In this study, we had 12 interviews in total. The target group was agile workers, of which we interviewed six agile workers and one group with five team members. At the same time, we interviewed four managers and also the head of internal communication. However, we used the interviews with the managers as support due to the fact that we did not conduct enough interviews to use it as empirical material. Because of the time limitation, and the fact that the participants also had time constraints, that is, they were very busy with their projects so that they did not have

enough time to do additional interviews for us to obtain further information. Even though we have contributed to a deep and broader understanding towards agile practices, our contribution would be more specific if we could have had the opportunity to interview a larger number of agile workers and obtain further details. Further, it was difficult to recruit volunteers for the interviews. Therefore, we needed to rely on a manager at YAF in order to recruit them. Furthermore, we believed that if we would have made observations in addition to the interviews, we could have gained a more in-depth understanding about the interaction between the self-organized teams and managers.

5.2 Contribution and future research

Based on the current agile literature, researchers mostly focused on studying agile practices in small and medium sized organizations. Current literature targets managers, but has a tendency to not pay attention to agile workers. However, our study is focusing on agile workers in a large company. As we argued in the introduction, the purpose of our study is aimed to contribute to agile communication theory with further knowledge and insights by understanding how agile workers make sense of managerial communication. We emphasize that agile workers are the foundation of agile practices. We recommend to practitioners that when they are implementing agile practices in organizations, listening and communicating with agile workers should be the number one priority. Positively involving agile workers in the communication process could build trust between managers and agile workers and improve working efficiency.

Drawing on the findings of our study, we identified a tension between self-organizing teams and managers in a large organization working according to agile practices, especially in a large project. Therefore, we suggest researchers and scholars should explore this tension in depth as it has a great effect on the agile teams' efficiency. Meanwhile, we acknowledged that there is a difference between agile theory and what agile workers really want. For example, agile workers expect the managers to use a variety of communication channels, but according to the theory of agile practices, face-to-face communication is best for self-organizing teams. Therefore we suggest scholars should explore the importance of mediated channels also on agile practices in depth.

We argue that managerial communication in agile practices could solve a number of issues in large companies. For example, timely managerial communication could improve the information sharing between managers and agile workers in order to avoid misunderstanding or distrust. A lack of managerial communication could create a number of issues in large companies. As our findings suggest, too much managerial communication imposes a burden upon agile workers, but less managerial communication leads to lack of information for agile workers and decreases the efficiency. Our findings support the idea that agile practices are incompatible with large organizations. As mentioned in our literature review, researchers highlight the advantages of agile practices, and at the same time point out its disadvantages, which are that agile practices do not work well in large-scale companies or complex projects. We suggest to researchers, including ourselves, that in the future there may be a need to study a method, which could take into account the advantage of agile practices and apply these to large-scale companies or complex projects. This is because an increasing number of large scale software companies focus on the individuals and interactions, meanwhile reducing the software development cycle and cost of software development. Moreover, our study also benefits agile workers. We expect that if agile workers recognize the tension between themselves and the managers, especially within large organizations, they could act in order to decrease the tension and thereby increase the efficiency. Moreover, they must feel that they have been heard and are an important asset for organizations. They need to give the feedback to managers because according to their feedback, managers could adjust the best plan for how to implement agile practices in the organization.

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Appendix 1

The Agile Manifesto

1. Our highest priority is to satisfy the customer through early and continuous delivery of valuable software.

2. Welcome changing requirements, even late in development. Agile processes harness change for the customer's competitive advantage.

3. Deliver working software frequently, from a couple of weeks to a couple of months, with a preference to the shorter timescale.

4. Business people and developers must work together daily throughout the project.

5. Build projects around motivated individuals. Give them the environment and support they need, and trust them to get the job done.

6. The most efficient and effective method of conveying information to and within a development team is face-to-face conversation.

7. Working software is the primary measure of progress.

8. Agile processes promote sustainable development. The sponsors, developers, and users should be able to maintain a constant pace indefinitely.

9. Continuous attention to technical excellence and good design enhances agility.

10. Simplicity--the art of maximizing the amount of work not done--is essential.

11. The best architectures, requirements, and designs emerge from self-organizing teams.

12. At regular intervals, the team reflects on how to become more effective, then tunes and adjusts its behavior accordingly.

(Beck et al., 2001)

Appendix 2

Position	Country based in	Interview method	Interview length
Agile worker	Germany	Face-to-face	55 min
Agile worker	Canada	Conference call	50 min
Manager	Sweden	Face-to-face	45 min
Manager	Sweden	Face-to-face	60 min
Agile worker	Sweden	Face-to-face – group interview	40 min
Agile worker	Canada	Conference call	30 min
Head of Internal Communication	Sweden	Face-to-face	55 min
Manager	Germany	Conference call	50 min
Agile worker	Sweden	Face-to-face	35 min
Manager	Canada	Conference call	40 min
Agile worker	Canada	Conference call	40 min
Agile worker	Germany	Conference call	45 min