THROUGH SELF-LEADERSHIP TO HIGH PERFORMANCE:

THE VALUE OF RETROSPECTIVES FOR SCRUM TEAMS

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The development of software, products or services is high in complexity and thus often carried out by multidisciplinary teams that apply empirical principles and work according to the Scrum framework. These Scrum teams are described as autonomous and self-organizing. In addition to solving a complex challenge collaboratively, the team also needs to lead itself.

The aim of this thesis is to research, what value Scrum teams see in the Scrum ceremony retrospective and how the teams leverage this event to lead themselves. The commissioner of this work is Solita OY, a technology company originating from Tampere, where majority of development teams work according to the Scrum framework and where self-leadership is one of the most cherished competences.

The theoretical framework is describing the needs of multi-disciplinary teams and team dynamics through research work done before Scrum became the leading format according to which development work is organized. Through connecting elements such as multicultural and distributed teams to these fundamental studies, the theoretical framework has been brought into the current time.

The findings of the research explain how group design and team roles impact on the ability to self-organize, and how overlapping development phases increase the need for shared understanding and a shared frame of reference within a Scrum team. The research describes, what value Scrum teams find in retrospectives and give insights on what can further enable teams' self-leadership capabilities and how this could be attempted to achieve.

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1 Introduction

We are living in a world that is increasingly complex and uncertain. Development teams of branches of organisations experience the implications of these external influences and have started to adopt an incremental and often iterative approach to organizing their work. The methods, used to facilitate this work, are referred to as “Agile”. These methods are based on short planning and feedback cycles and thus enable continuous alignment with stakeholders needs and the possibility to adapt to new learnings. While software development teams still represent the largest group applying these methods, other departments such as IT, Operations and HR are catching up. (15th Annual State of Agile report, 2021, p. 7)

Scrum is a framework based on the principles of the Agile Manifesto. It embraces both, iterative and incremental development and it also gives a large degree of autonomy to the team. (Schwaber & Sutherland, 2020) According to the latest “State of Agile” study Scrum continues to be the most popular Agile framework with over 80% of respondents saying that their practises are closest to Scrum. (15th Annual State of Agile report, 2021, p. 13)

However, there seems to be a disconnect between the theory and the reality of applied Scrum. Based on the Scrum Guide and other subject literature, the Scrum teams characteristics are to be autonomous, cross functional and through empirical working processes continuously deliver high value. (Adkins, 2010) And although there is a designated event in the Scrum framework for teams to inspect and adapt their performance, ways of working and team environment, Scrum teams tend to suffer from common dysfunctions such as high stress levels, interpersonal conflicts, and low delivery rates. (Alliance, n.d.)

With this research, the author wants to explore the question: What is the value of retrospectives for Scrum teams in project work? The anticipated findings generate insights into what extend this seeming disconnect is an issue at the commissioning company and lead to propose evidence-based suggestions how to address these issues from within the Scrum team and through measures the organisation can take.

1.1 Commissioning company introduction

The research has been conducted at Solita OY, a consulting company with origin in Tampere, that was established in the year 1996. Currently the company employs roughly 1 500 people in 6 different countries: Finland, Sweden, Estonia, Germany, Denmark, and Belgium. In addition to this, Solita also collaborates with many other smaller consultancy companies through the facilitation of the "Friends of Solita" network. Many of these entrepreneurs are former Solitans who decided to establish their own company. (Solita.fi, 2022)

Solita has over 25 years of experience in the field of technology development, however nowadays their competence offering goes far beyond technology: Solita is a community of highly skilled professionals from such diverse fields as strategic consulting, service design, artificial intelligence, analytics, software development, cloud services and organisational transformation. At Solita these diverse backgrounds are at the fundamental core of the company's culture where transparency, openness and equality are celebrated every day. (Solita.fi, 2022)

The company's mission is to deliver work that creates real impact and that lasts, embracing their commitment to each solution that is built together with the client as a partner. This means, that the themes that are being worked on often are of acute significance for the customers and the wider society. (Solita.fi, 2021)

At Solita, work is usually conducted within projects, while some of these projects might be lasting several years, others last only a few months and the context, in which work is conducted, changes frequently. This is an important detail in the context, as generally Scrum teams are designed to work on a product development infinitely. Cross-functional, iterative, and incremental collaboration is the standard working format in Solitas projects, however. For this research the author will collect relevant data from teams that selected "Scrum" as their project management framework and that have been working in their current project set up for at least three (3) months. The sample represents views from different roles within the project teams, in order to capture a diverse perspective.

1.2 Objectives

With this research the author wants to explore how Scrum teams at the commissioning company succeed to evolve through the tools the selected framework provides them, given the constraints of the environment they are working in.

This research will focus on the ability of teams to lead and organize themselves, to recognize and address relevant topics as part of their regular team reflections, their retrospectives. As such, the author will explore the theme of team design by assessing teams' awareness towards the level of diversity of team roles and what implications team members might draw from it. The second theme in focus is team dynamics, within which the discussion will evolve around topics such as shared understanding, choice of collaboration space and different abstraction levels during the development process.

As a result of this research the collected data will help to understand how team collaboration and teamwork is facilitated, what difficulties teams are experiencing and whether these difficulties could be addressed from within teams or whether organisational support is necessary.

1.3 Research question

To support the goal of this research the author proposes the following research question: What is the value of retrospectives for Scrum teams in project work?

Through exploring this question, the author wants to gain insights on how the retrospective event supports the Scrum teams in recognizing and inspecting the underlaying issues to their day-to-day struggles and in adapting impactful changes to improve the team collaboration with a team.

The author will assess the question from the perspectives of team design and team dynamics. Through the reflection of the applied practises within the Scrum teams against the selected theories, the author aims to gain insights on two subjects:

Which are impactful methods, teams have found and established that help to uncover the teams dysfunctional root causes?

What opportunities are left unused to take a positive impact on their working environment?

Based on these insights the author will offer a proposal on actions to further leverage the Scrum teams strengths and to support them adapting new methods as integral part of their teams' work.

2 Theory

To answer the research question “What is the value of Retrospectives for Scrum Teams in project teams?” the author has chosen to approach the theory from an evolutionary perspective.

This research is constructed around the definition of a team and the fundamental needs of multidisciplinary teams in general. The initial research on this topic, which will serve as the framework for this research, goes back to the early 1980’s. More recently, this study was revalidated and some parts of it have been challenged. The author will reflect on both, the initial and the newly added findings. From there, the theory touches upon the evolution of project management in software development, where the Agile Manifesto with its applied frameworks, such as Scrum, triggered somewhat of a revolution in the early 1990’s.

Today, new challenges, such as distributed teams with different cultural backgrounds, create a working environment with ever increasing complexity. These theories will provide the framework for this research and the author will explore through this framework how Scrum teams succeed to identify and stimulate these fundamental needs for successful project teamwork.

2.1 Team Design

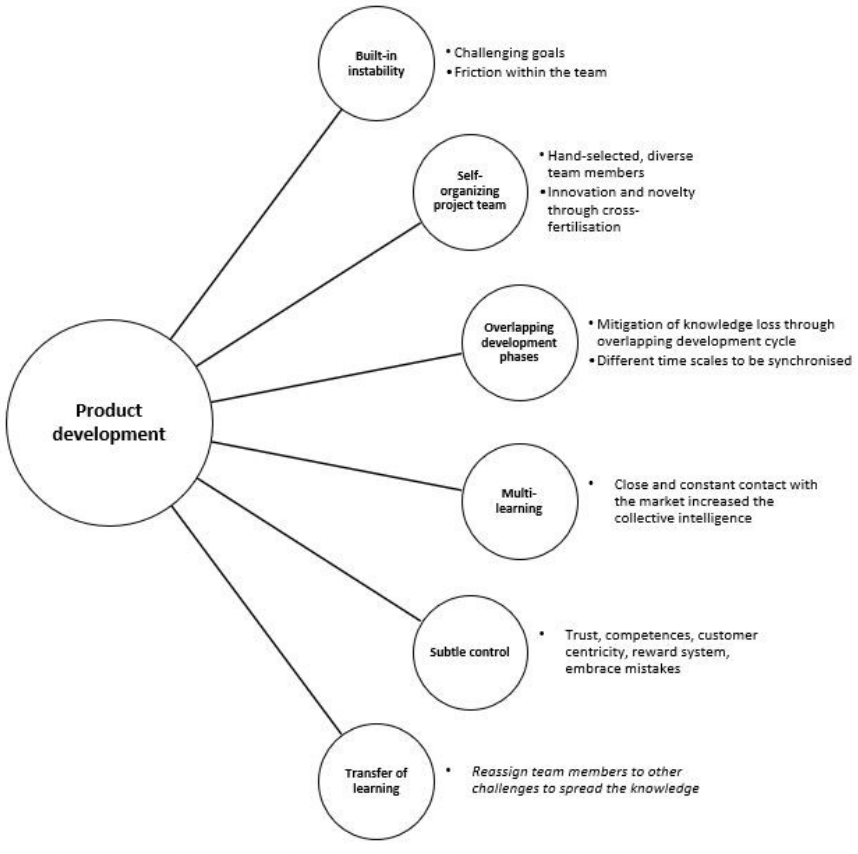
2.1.1 Exploring new ways of product development

Traditionally product development was carried out in a sequential method from phase to phase: concept development, feasibility study, design, development, piloting and eventually production. During the 1980’s however a change in the market environment could be observed. New products were increasingly entering the market. Competition intensified, product life cycles shortened, and technology advanced with increasing speed. (Takeuchi & Nonaka, 1986)

In their study on product development Takeuchi and Nonaka researched new product development methods being utilized by multinational organisations such as Fuji-Xerox,

Canon, Honda, NEC, Epson, Brother, 3M, Xerox, and Hewlett-Packard. (Takeuchi & Nonaka, 1986)

As an alternative to sequential development methods, these companies had explored a holistic method, that characterises itself through six attributes, like visualized in figure 1: 1) built-in instability triggered through extremely challenging goals, with the intention to create tension within the team, 2) self-organizing project teams facing an emerging ambiguity in combination with autonomy that leads to self-transcendence, 3) different functional domains operating in different time scales and dimensions mitigating the loss of knowledge loss through transition, 4) multi-learning through consistent contact with the market environment increasing collective intelligence, 5) subtle control by management that embraces an open working environment and customer centricity through providing a reward system that is based on group performance, anticipation and tolerance of mistakes, 6) transfer of learning through osmosis intensifies experiences about new ways of working and makes them available to other team members of the organisation. (Takeuchi & Nonaka, 1986)



Takeuchi, H.;& Nonaka, I. (January 1986). The New New Product Development Game. *Harvard Business Review*.

Figure 1: Takeuchi's and Nonaka's "New new product development game"

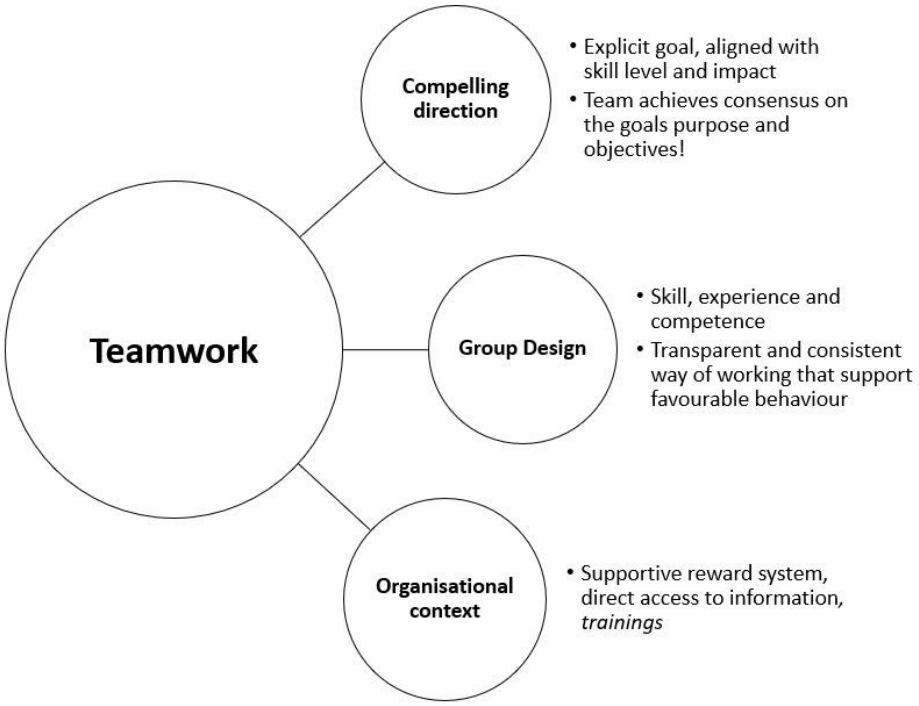
Although this new way of product development enabled the forementioned organisations to increase on product development speed and flexibility, while keeping quality standards up and development costs low, the authors also identified problems this holistic development methods brought along. Communication, within the project team and regarding stakeholder management, has been experienced as challenging. Especially the gap in perception of an emerging situation, driven by different backgrounds and interests and needs, has created conflict between team members. (Takeuchi & Nonaka, 1986)

It can thus be concluded that these early experiments with multidisciplinary product development teams provided a promising perspective, however subject-matter expertise, autonomy, and ambition alone are not sufficient to fully leverage the potential of such a group. To take full advantage of the abilities such a group can offer, its people need to become a unit.

2.1.2 Definition of a team

At this stage, it is worth reflecting on the fundamental definition of a team in a working context. In modern working establishments groups of people are organised in many ways. This research will focus on teams as described by Leigh L. Thompson as being a group of people, who depend on each other in respect to information, resources and skills and is targeting to achieving a common goal through the combination of their efforts. (Thompson, 2014)

In the later part of the 20th century J. Richard Hackman studied what teams need to be effective and high performing. Like illustrated in figure 2, his research identified three crucial enablers for teams succeed: *Compelling direction,* Group Design and Organisational context. (Hackman, 1983)



Hackman. (1983). *A nominative Model of work team effectiveness* New Haven: Yale school of organisation and management.

Figure 2: Hackman's "Nominative model of work team effectiveness"

The common goal of the team, as Thompson described it, needs to be explicitly described and it needs to be aligned with the skill level of the team members to be perceived as challenging. Finally, it also needs to create an impact. The emphasis however needs to be on the term "common": a well-defined goal as such is not sufficient. As the team members will be representing different domains and diverse backgrounds, each of them will view the goal differently. The team needs to interpretate the goal and achieve a consensus as a whole and define the objectives. (Hackman, 1983)

As the team's purpose and objectives crystallize, the other two critical enablers become relevant. The structure of the team should be of such, that the team can rise to the challenge at hand based on skills, experiences, and competences. The teams working processes need to be transparent and consistent and they need to be supporting favourable behaviour and discourage dysfunctional behaviour. (Hackman, 1983)

As a third crucial enabler for teams' success Hackman addressed the organisational structure around the team. He highlights the importance of a reward system, that reinforces good performance, and information system that provides access to data that is needed to carry

out the job at hand as well as the possibility to attend necessary trainings to obtain relevant skills. (Hackman, 1983)

It can be observed that Hackman's research and the work done by Takeuchi and Nonaka provide us with very similar findings, although their research has been done from different perspectives. And it appears that the very problem that Takeuchi and Nonaka identified, the insufficiency in communication, has at least to some degree been addressed by Hackman as part of his Teamwork studies.

2.1.3 Composition of a team

As the studies of Hackman and Takeuchi & Nonaka revealed, particular attention is to be given to the selection of individuals to a team. They highlight the importance of competences and experiences in relation to the problematic at hand, to sufficiently challenge but not overburden the team with the challenge presented to them. (Hackman, 1983)

Roles and responsibilities are a common point of discussion in every team. We ought to differentiate between three kinds of roles: technical, functional and non-functional team roles. While a technical role addresses the tasks to be performed, the functional role is usually given based on education and position and represents the persons positioning in the organisational structure vertically. Examples would be Senior Software Developer or Project Manager. (Open Learn, 2012)

The concept of non-functional "team role" has been researched by Meredith Belbin from the 1960's onwards and describes the informal role a person would take in any team, based on personality. It is a tendency to behave, contribute and interrelate with others in a particular way. (Belbin.com, n.d.)

During the initial research the team conducted between 1969 - 1978 at the Administrative Staff College at Henley it was discovered that not, as anticipated, teams with high-intellect would succeed while lower intellect teams wouldn't. Instead, it was discovered that the success of the team was depended on the balance and compatibility of the roles the team members played within their teams. (Belbin.com, n.d.)

Through their research Belbin and his team found that there are infinite behaviours that can emerge in a workplace, but only finite number of useful behaviours that are critical to a team's success. Through clustering these useful behaviours nine organic team roles emerged that facilitate a team's success. These roles can be grouped in social roles, thinking roles and action or task roles. (Belbin.com, n.d.)

Each of the roles describes a set of strengths and the impact these might have. However, the roles reflect also anticipated weaknesses that can be related to the strengths and describe how these would look like. It's a reflection of two sides of a coin, giving credit to the symmetry of nature that emerges also in the behaviour of individuals. (Belbin.com, n.d.)

Through identifying the behaviour driven roles an individual would naturally take within a group, the person might better understand one's own behavioural patterns and how other people in the team are likely to behave and why. But especially this can help the team to identify how balanced or imbalanced their team's composition is and rise an awareness about possible shortcomings. (Belbin.com, n.d.) Staffing of project teams is usually done based on best fit for the challenge and availability. Functional roles are a leading driver for decision making if trade-offs need to be made. (Darter, 2016)

The author choses to not open the different Belbin team roles as part of this theory, as they are not essential for this research. To facilitate the performance of the team however, it is necessary to look beyond functional roles and into how work gets done. As a part of this research the author wants to explore, which ways project teams at the commissioning company have found to address this important topic and whether teams consider it useful to explore this opportunity further, for example through a Belbin assessment, going forward.

2.2 Multidisciplinary teams becoming the rule

2.2.1 History of Agile

Agile working methods have been an integral part of software development since the very early days of this discipline. In his book "Clean Agile: Back to Basics" Robert J. Martin describes that traditionally software development, due to the lack of experience in this new

emerging field, has been all about trial and error and that behaviour that we today would describe as “Agile” were the norm. (Martin, 2019)

It was during the early 1970’s, following a mis-interpretated paper published by Winston Royce, that the concept of “Waterfall” in connection with software development, and in fact development in general, as described earlier as part of Takeuchi’s and Nonaka’s work, manifested itself as the primary working method. This method was also reinforced through the immense technical limitations regarding code writing and compiling. (Martin, 2019)

“Waterfall” project management describes a sequential execution of different project stages, such as e. g. requirements definition, design, implementation, testing and deployment. Each stage can only start once the earlier stage has been completed. The processes characteristics are that outcomes and requirements are defined already at the very beginning and delivery is expected at a fixed date at the end of the process. Expenses are considered a variable. (Workfront.com, n.d.) However popular, it soon became apparent, that Waterfall was not optimal. According to the 1994 CHAOS Report by Standish Group about 82 % of all projects failed or where challenged. (The CHAOS Report (1994), 1995)

During the early 1990’s new software development methods, such as XP (extreme programming) and TDD (Test-Driven Development) emerged and were advocated by thought leaders of the scene. To increase these methods visibility and impact a desire for a more organised approach of advocacy emerged. During the infamous Snowbird event at Salt Lake City, through collaboration of 17 thought leaders of the scene representing different domains came together the Agile Manifesto emerged as way to develop better software. (Martin, 2019)

Manifesto for Agile Software Development

“We are uncovering better ways for developing software by doing it and helping others do it. Through this we have come to value:

Individuals and Interactions over processes and tools
Working Software over comprehensive documentation
Customer Collaboration over contract negotiation
Responding to change over following a plan.

That is, while there is value in the items on the right, we value the items on the left more." (Beck, et al., 2001)

The values of the manifesto are accompanied with 12 principles, that serve as the foundation for many Agile frameworks, one of them being Scrum. And although initially thought of from a software development perspective by the gentleman gathering in Salt Lake City, there is a clear correlation between the philosophy behind the Agile Manifesto, Hackman's theory of Teamwork and "The new new product development game" as described by Takeuchi and Nonaka.

2.2.2 Scrum

Scrum is a lightweight Agile development framework, that follows an iterative and incremental approach, embraces cross-functional collaboration, and is fuelled by empiricism throughout the product development. (Schwaber & Sutherland, 2020) Today, the Scrum framework is by far the most popular software and product development method worldwide. According to the 15th edition of the "State of Agile" report over 80% of software development teams use Scrum, or a closely related variation, as framework. (15th Annual State of Agile report, 2021, p. 13)

Scrum is working method based on empiricism, that is designed for application in complex environments where the practise of probe – sense – respond provides novel solutions. (Snowden, 2022) Empiricism asserts that knowledge is gained from experience and decision are made based on what is known not based on anticipation. (Schwaber & Sutherland, 2020)

In context of the Scrum empiricism means building something small, an increment, providing it to the customer and observing the result. The customer feedback is integrated into the plan for the next iteration where the process will start over. Value is created through uncovering novel solutions based on new knowledge that has been gained. (Solita, 2022)

The structure of empiricism consists of three pillars: transparency, inspection, and adaptation. (Schwaber & Sutherland, 2020) Transparency provides clarity on the different aspects of the process and makes their effect on the outcome visible to the team. The team understands how well they are progressing towards its goal and how customers experience

the value of the product when using it. (Ockerman & Reindl, 2019) Inspection is a form of risk mitigation. Through frequent inspection of results the team gains new information and has the possibility to learn from it. (Ockerman & Reindl, 2019) Like described in the Agile Manifesto, an Agile team will welcome changing requirements, even at a late stage during the development process. (Beck, et al., 2001; 15th Annual State of Agile report, 2021) The Scrum team thus adapts the information collected during the inspection phase to refine the product, the goal, or their ways of working. (Ockerman & Reindl, 2019)

The Scrum team is a cross-functional, self-organising and collaborative group that works in sprints and aims to deliver valuable work regularly. It evolves from a group of individuals at the beginning into a cohesive team through steadily improving on how they do their work. (Ockerman & Reindl, 2019) The Scrum framework with its roles and events provides the Scrum team with a process to realise their product vision and to grow as a team. Lyssa Adkins compares the evolution of a Scrum team to Shu Ha Ri, a concept of material arts: At first, follow the rules provided by the framework, as it is given, with no changes, to gain experience and explore its limitations (Shu). Next, break the rule and explore the effects (Ha). Finally: be the rule (Ri) by internalizing the rules through their experienced values. (Adkins, 2010, p. 60)

The Scrum framework includes several events. The Sprint functions as a container for all events of the Scrum cycle. Each event of the Sprint is an opportunity to inspect and adopt the deliverables of the team. (Schwaber & Sutherland, 2020) To improve the teams' processes, the group is required to stay vigilant and to reflect on practises, tools, and ways of working regularly. Possible areas of inspection can be, but are not limited to, quality related practises, effective use of the Scrum process, communication, and collaboration methods, as well as use and growth of team knowledge and capabilities. (Ockerman & Reindl, 2019)

2.2.3 Retrospectives

One specific event in the Scrum process is designed to get the Scrum team to come to a hold and curiously explore, how their work got done: the Sprint Retrospective. (Adkins, 2010, p. 132) The sprint retrospective is the last event of the Sprint. (Schwaber & Sutherland, 2020)

While in most Scrum events the team will focus on the inspection and adaptation of the actual product itself and the work that needs to get done, the Retrospective differs at this point. The Scrum Guide describes the purpose of the Retrospective as "to plan ways to increase quality and effectiveness". (Schwaber & Sutherland, 2020)

Retrospectives, in a more general context, are a very common form of bonding between individuals of a group. Family members might discuss over dinner about how their day went, students of a class reflecting on their holiday experiences or the sports team discussing in the changing room about how the deciding situation of the game came about. What all these different abstractions of Retrospective have in common is the idea of creating an overall - shared - impression, a more vivid or clearer picture of an experience shared by the group. (Löffler, 2017)

The Sprint Retrospective makes no difference here. The Scrum team is invited to inspect, how their work over the past sprint has come together. They would review on interactions within the team and with stakeholders, they expand their views on these experiences from and individual level. They would also investigate their ways of working as a team and the means that help them to deliver high quality results, such as for example the Definition of Done. (Schwaber & Sutherland, 2020) Learning from these experiences, the team commits on actions to be taken that will help them to increase the value of their product. These actions may be of various nature: technical, process related or interpersonal. (Ockerman & Reindl, 2019)

Retrospectives are the final event of each Sprint the team has completed. Through having these events regularly, the team has the opportunity to solve emerging problems immediately. The team also has the possibility to timebox commitments to changes in their ways of working to e. g. 1 or 2 sprints, then come back to the issue and analyse whether the desired impact was achieved. Through this, behavioural changes can be treated as experiments rather than set-in-stone commitments, which often lowers the bar to try out new things. (Löffler, 2017) According to the State of Agile 2021 report, 83 % of respondents cited that they are practising Retrospectives. (15th Annual State of Agile report, 2021) The experience in the field however shows, that many Scrum teams are unhappy and frustrated with their Retrospectives and even consider them as a waste of time.

2.3 The new normal: distributed, multidisciplinary teams

2.3.1 The rise of distributed teams

As Scrum was first introduced in the mid 1990's having collocated Scrum teams was the norm. And although it was never specifically stated in the Scrum Guide, there are many implications in this document, that indicate that co-location is to be preferred. (Woodward, Surdek, & Ganis, 2010) However, already in year 2009 a majority of agile teams reported to be geographically distributed. (Ambler, 2009)

The global COVID-19 pandemic has driven if not all, then most employees out of their offices and by now only 3 % of agile practicians plan to return to full-time collocation after the pandemic. (15th Annual State of Agile report, 2021, p. 7)

Since the emergence of agile frameworks as common project management methods in the mid 1990's global circumstances have changed rapidly and accelerated the shift towards distributed development teams. The motivations of companies to distribute their teams are versatile, yet all business driven. While some were aiming for cost reduction through outsourcing of particular functions, e. g. IT, others wanted to reduce the time-to-market-cycle through developing with the follow-the-sun-model. Others yet looked for better access to new markets through distributed teams or acquisition of competitors. Lately, also the potential of increased diversity as fuel for innovation has been a strong driver for distributed teams. The simultaneous advances in technology, providing a better collaboration experience, also over distance, have further contributed to this trend. (Woodward, Surdek, & Ganis, 2010)

In general, one can observe two different kinds of distribution: geographical and cultural distribution. The patterns of geographical distribution vary and may stand in direct correlation to cultural distribution. Today four different patterns of geographical distribution can be distinguished, each of them with unique challenges in the regards of teamwork.

Co-located teams are physically at the same place and have individual or shared offices. These teams meet face-to-face frequently. The challenges these teams are facing are the

dysfunctions as studied and described by Hackman, Takeuchi and Nonaka. (Hackman, 1983) (Takeuchi & Nonaka, 1986) Part-time co-located teams are typically at the same location; however, some team members work occasionally from elsewhere. In general team members are in the same time zone and have the opportunity to meet face-to-face whenever it is necessary for them. These teams have strong routines that are based upon collocation. The active integration of the occasional remote located colleague can thus be easily forgotten and create a sense of exclusion and burden.

Distributed teams with overlapping work hours are teams that are not typically and regularly physically present at the same location. Face-to-face meetings are the exception and team interaction mainly take place through digital communication tools. The team however shares same or similar time zones which allow regular collaboration. Unless all team members are in the same time zone, these teams face the challenge, that their collaboration does not take place at the same point during the workday. This might be particularly difficult in case of dailies, where the team plans the work for the day ahead. Longer lasting sprint events, such as the sprint planning, might be difficult to fit into the shared collaboration time and might conflict with other necessary collaboration the team members need to get done. Distributed teams with no overlapping working hours have not possibility to interact with each other during a normal working day. Most of their communication and interaction will take place asynchronously in writing, leaving space for interpretation. (Woodward, Surdek, & Ganis, 2010)

Cultural distribution can emerge in all types of geographical distribution; however, it is more likely to emerge in teams that are distributed over different countries. In these cases, at least some of the team members often need to opt for speaking a language different than their native language. (Woodward, Surdek, & Ganis, 2010) Beyond the spoken language, also behavioural patterns and rituals may differ significantly between team members with different cultural or religious backgrounds. (Woodward, Surdek, & Ganis, 2010)

These circumstances increase the complexity of the teams working environment significantly. In addition to dealing with barriers due to time zones, these teams also need to have an increased awareness of their cultural differences and language barriers.

(Woodward, Surdek, & Ganis, 2010) As part of this research the author will focus on teams that are collocated, part-time collocated and distributed with overlapping working hours.

2.3.2 Challenges of distributed, multidisciplinary teams

Although initial study made by Hackman is already 40 years of age, its findings are still relevant in today's working environments. However, as it was conducted based on collocated teams, it is worthwhile assessing whether new needs have emerged that address the trend towards distributed teams. (15th Annual State of Agile report, 2021, p. 4) Building upon Hackman's initial research, Martine Haas and Mark Mortensen identified that the nature of teams today tends to be more diverse, more dispersed, more digital and more dynamic. This is what they refer to as 4-D-teams. (Haas & Mortensen, 2016)

Haas and Mortensen carried out their research in project teams, which makes it particularly valuable for this research. They conclude that in times where the topic of organisational culture, enjoys a lot of attention, the fundamental success enablers for teams have not changed over the past 40 years. They do however suggest the refinement of the enabler "Organisational Context" and the addition of one new enabler "Shared Mindset". (Haas & Mortensen, 2016)

Their proposed addition to "organisational context" relates to the increase in digital working environments and the usage of new technology. Distributed teams often perform similar tasks in very different surroundings and environments. Haas and Mortensen point out, that although activities may be very similar, their comparison through e.g. performance rate might cause unintended frictions and conflict which could easily be interpreted through cultural lenses, while the actual cause could be poor system performance rates in the different location. They therefore highlight the importance for material resources, such as funding and tech assistance for teams, to be able to meet the challenges of digitalisation. (Haas & Mortensen, 2016)

As a new addition Haas and Mortensen suggest the enabler of "Shared mindset". Through this they address the increasingly complex environments, that teams operate in. Multidisciplinary teams' members often have very different backgrounds. The lack of non-

verbal and contextual clues, especially in distributed teams, causes an erosion of collective intelligence. (Haas & Mortensen, 2016)

As team members validate and interpretate information through their own lenses that have shaped over time through background and experience, this may lead to a neglect of ambiguity in situations of high complexity and uncertainty. Rather than making decisions as a group based on collective intelligence, heuristics come into play and decision making is driven by a bias to believe and confirm or by Halo-effect. (Kahneman, 2011)

Haas and Mortensen describe their definition of “Shared Mindset” through two aspects: Fostering a common understanding through the creation of a shared frame of reference, through which all information is filtered by team members to actively cultivate the groups intelligence. This can create a shared database of knowledge based on which decisions are made. As people learn to understand each other and their line of thought, they will learn to trust each other. Fostering a common identity through which each member or subgroup of the whole team experiences a sense of belonging and being valued for their contribution to the overall goal. The facilitation of a common identity can be achieved through sharing experiences with common reference points by creating regular *“structured unstructured time”* for the team. Time, that is being blocked off the teams work schedule to talk about matters that are not directly related to working tasks. (Haas & Mortensen, 2016)

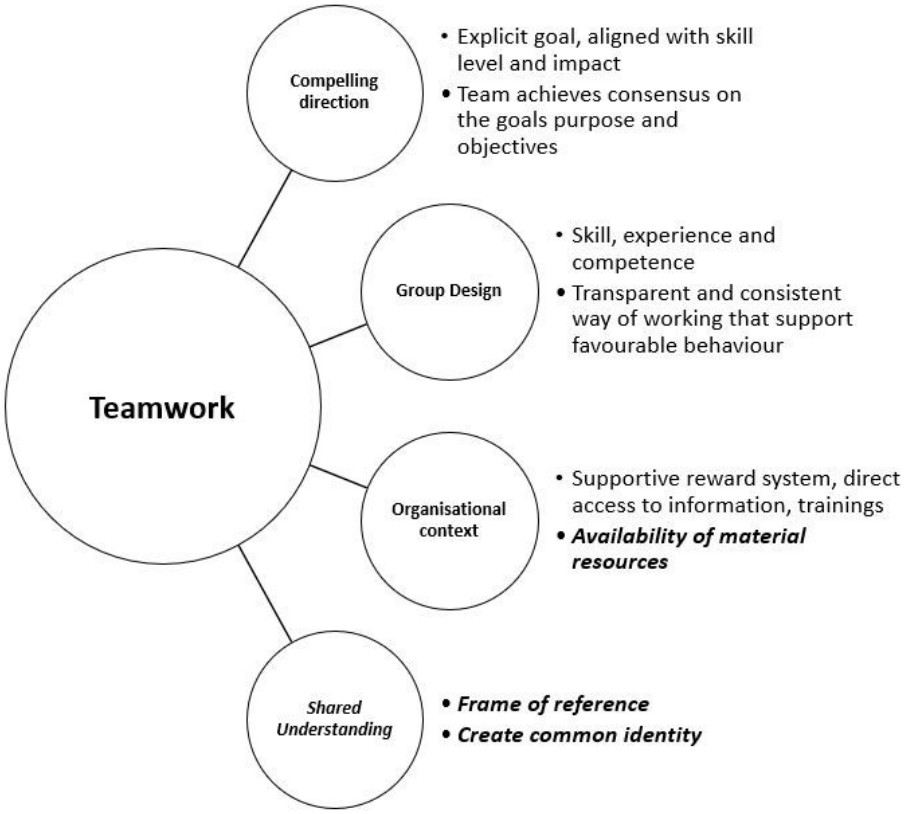


Figure 3: Hackman reloaded

2.4 Framework

In the scope of this research the author will explore, how Scrum teams, distributed and collocated, that work in project environments, utilize their Retrospectives, this "structured unstructured time", to their advantage and gain value from it. From the forementioned theories that emerged over the past decades the author chose to research the elements, that can be expected to be within the influence of autonomous, self-organizing teams. In the context of this research theoretical elements related to organizational or market influences will be excluded. The author has furthermore decided to exclude the concepts of performance validation and competence development from this research. Albite closely connected to the subjects in scope, these themes refer more to the output of successful teamwork, rather than to enablers of successful teamwork.

In order to answer the research question "How valuable are Retrospectives for Scrum teams in project environments?" the author will assess the awareness of team design implications,

in particular regarding team roles, and research team dynamics from the aspects for self-organizing project teams, the implication of overlapping development phases and teams' ability to create a shared understanding. The selected subjects are within the defined scope, are overlapping between the theories of Hackman and Takeuchi and Nonaka and address the new findings made by Haas and Mortensen.

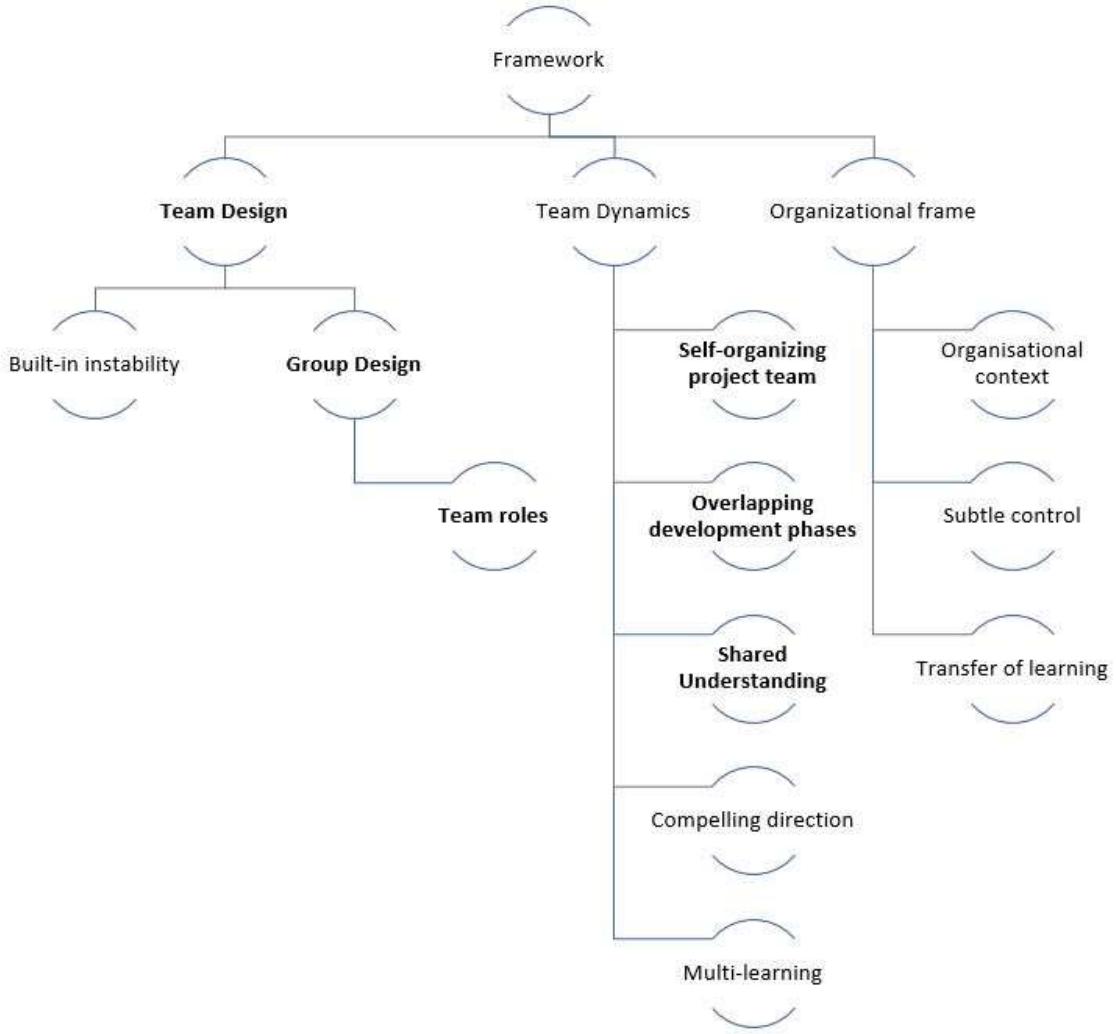


Figure 4: Research framework

3 Research Methodology

The aim of the thesis is to provide an analysis of scrum teams abilities regarding leading their own growth and development through Retrospectives. In this paragraph the author describes the theories and methods used to answer the research question. Finally, the author will discuss how reliability and validity of the research are to be ensured.

3.1 Research oriented thesis

This thesis is based on established theories in the field of teamwork, team design and team dynamics and set in correlation to the newly emergent demands of a modern working environment, such as distributed teamwork, multi-disciplinary working groups and cultural implications. The collected observations will be assessed based on these theories, which will allow the author to test the theories validity in a changed market and to gain new insights about the team's abilities and needs. The research will follow an interpretivist philosophy, which will allow the author more flexibility to react on what research participants say and express over the cause of the study, based on the predetermined themes chosen for this research. (Saunders, Lewis, & Thornhill, 2019, p. 438)

3.2 Research design

The primarily objective of this exploratory research is to gain a better understanding of the situation at hand in order to be able to state a clear problem statement for which solutions can be designed and further tested with the focus groups. The author chooses an inductive approach for this research, which starts from generalisations through which specific evidence will be identified throughout the progress of the research. (Saunders, Lewis, & Thornhill, 2019, p. 153)

The practises of Scrum Teams as part of their retrospectives are being investigated through a mix of qualitative methods, to uncover their dependencies, impacts, and connections to the team's maturity development. The sequential exploratory design of the research will allow

the author to expand and elaborate further on an initial set of observations through a second iteration of data collection. (Saunders, Lewis, & Thornhill, 2019, p. 182)

In order to assess the competence level of teams regarding the scoped subjects of team design and team dynamics, the author will first conduct a questionnaire of qualitative nature. Through this assessment of theories in the form of rating questions from a wider group the author aims to gain initial findings and high-level understanding about how well known these theories are and how they reflect through the practises and behaviours within the targeted population. These initial findings and conclusions can then be deepened and further explored through semi-structured interviews. (Saunders, Lewis, & Thornhill, 2019, p. 523)

Through the qualitative research method of semi-structured interviews, the author will dig deeper into the initial findings and, responding to the exploratory nature of the study, assess the level of teams´ ability to take actions upon the identified challenges within the scoped subjects. By utilizing semi-structured interviews, the author will have sufficient freedom for interview themes to evolve around the subjects that are relevant to the participants. (Saunders, Lewis, & Thornhill, 2019, p. 438) The chosen techniques provide the possibility to identify development areas across the population and to discover novel ideas and thoughts through exploration but ensure necessary structure to keep the research focused on the scoped core subjects.

3.3 Reliability

Reliability in research refers to the possibility of replicating a researcher's findings, following the described research design. Additionally, the research also needs to be carried out in a consistent manner, to be considered reliable. Recognised threads to reliability in research are described as participant error, participant bias, researcher error and researcher bias. (Saunders, Lewis, & Thornhill, 2019, pp. 213-214) To ensure the reliability of this work, the author commits to following the above-described research methods and to continue thorough documentation of the research process throughout the study, particularly in regards of data analysis. (Saunders, Lewis, & Thornhill, 2019, p. 214)

Addressing the matters of participant error and participant bias, the author respects and values the privacy and availability of participants by keeping their involvement within reasonable timeframes and offering sufficient time slots from which participants can choose to their convenience. Interviews are conducted without the presence of others. (Saunders, Lewis, & Thornhill, 2019, p. 214)

Avoiding researcher error and bias, the author allows sufficient time to prepare the interaction with participants. The questions for the questionnaire are reviewed and discussed with experts in the field of insight work before the questionnaire is published. The interview questions are designed based on the initial findings resulting the questionnaire and are to be discussed with the research supervisor within the commissioning company. (Saunders, Lewis, & Thornhill, 2019, p. 214)

3.4 Validity

We distinguish between three types of validity: measurement validity refers to how appropriate the measures used in the studies are for the topic in question. Internal validity describes how accurate the analysis of results has been conducted, ensuring that the findings are down to the researched data and environment and not to flaws in the research design. External validity tells about, how well the findings can be generalized.

A valid study addresses all three types of validity. (Saunders, Lewis, & Thornhill, 2019, p. 214) In order to ensure internal validity of the study, the author puts extra emphasis on the phrasing of the questions and the answer selections of the questionnaire. This is to avoid both researcher bias and criterion invalidity. It will also support the author to follow through on a structured analysis of this first data set, which will build the foundation of the semi-structured interviews.

External validity, or the ability to generalise a study finding to a wider context, is seen in direct correlation with the selection of population and sample of the study. As described in chapter 4.2 of this report, the author scoped the sample to employees in project work, who work according to the Scrum framework in the roles of either development team member or Scrum Master and have been working within the same project for at least 3 months over the

cause of the past 12 months. As the selected sample represents a sub-element of the overall population, the findings of this study are likely to be generalisable as well.

4 Practical Research

4.1 Sample

According to Saunders, Lewis and Thornhill, the selected sample, the research is based on, needs to relate to the population addressed in the research question. This will allow the writer to draw conclusions about the wider population, based on the findings of the researched sample. (Saunders, Lewis, & Thornhill, 2019, p. 295)

The selected population for this work included all employees of the commission company, who are active in project work. The target population was defined as employees in project work, who work according to the Scrum framework in the roles of either development team member or Scrum Master. The sample included employees in project work, who work according to the Scrum framework in the roles of either development team member or Scrum Master and have been working within the same project for at least 3 months over the cause of the past 12 months.

For the purpose of this qualitative research statistical interferences are not of relevance. The author used non-probability sampling, and, following the exploratory nature of the research, decided furthermore on utilising the snowball sampling approach for the survey which intends to provide the foundation for the identification of themes to be studied through semi-structured interviews. (Saunders, Lewis, & Thornhill, 2019, p. 316) The interviews, with purpose to further investigate the observations and conclusions drawn from the survey through themes, made use of the self-selection sampling method. (Saunders, Lewis, & Thornhill, 2019, p. 316)

In consideration of an appropriate sample size, the author, considering the exploratory, qualitative nature of the study, found guidance in the concept of saturation. Sanders et al. for example recommend, in referral to many other research textbooks, to continue the

collection of qualitative data until new data provides little, if any, new information or suggests new themes. (Saunders, Lewis, & Thornhill, 2019, p. 315) While the concept of saturation in itself does not support the definition of a specific number of needed sample cases, it does support the authors research approach of defining themes for further study through interviews and helps to navigate one of the limitations of the research, the difficulty of identification of relevant sample objects for the survey. As guidance for researchers, Saunders et al. describe that a sample size of 30, for research with participants from a single organization, would be the norm; highlighting that an overall number of 15 – 50 to be considered sufficient in case of non-probability sampling in the context of qualitative studies. (Saunders, Lewis, & Thornhill, 2019, p. 317) The author thus concludes that for the purpose of identifying themes to further study through interviews, the amount of survey replies is of less relevance than the representation of different functional roles and experience levels within across the respondents and the homogeneity of their replies.

4.2 Method

The practical research of this study followed exploratory principles and was based on qualitative methods. The initial exploration is done through a survey with the purpose to get a general overview, how well identified theories are connecting to practises applied within the sample. Based on these initial findings, the author then deducts themes to be explored further in semi-structured interviews. Within this chapter, the author describes, in reference to the earlier chapters in this report, how the research design and sampling in practise were carried out to gather the relevant data.

4.2.1 Survey

The purpose of the survey was to explore how well the applied practises and behaviours of the scrum teams in the commissioning company are connected to the theories that have been selected in the focus of this study and, based on the insights gained from this data, to define themes to study further through semi-structured interviews. As described in chapter 2.4 of this document, the study assessed the initial themes team design, team roles, self-organizing project teams, overlapping development phases as well as teams' ability to create

a shared understanding. Based on the findings of the survey, these themes may be subject to adjustment, while ensuring the connection to the defined framework for this research.

The author designed the survey as a mix of open question and rating question assessment. The design of survey was done by deducting assessable statements from the theoretical framework. The selected assessment responses were defined as “Never”, “Rarely” and “Always”. The definition of these assessment statements was an iterative process. In order to avoid researcher error and reduce bias, the author reviewed and discussed the paraphrasing of the statements with two subject matter experts as well as one expert in the field of insight work and qualitative field studies.

The statements were organized into categories 1, 2, 3 4 and 5. The author chose not to label the sections according to the themes described in this document to reduces biases within the replies. The documentation of the themes, sections and statements was done on a collaborative whiteboard (Miro), which was also utilized during the iterative review process of the statements. The following statements were deducted from the theoretical framework, that builds the foundation of this thesis work:

Section 1: Group Design

The statements selected to assess this section are “Our team has the experience to rise to the challenge at hand”, “Our teams ways of working encourage favourable behaviour”, “In our team leadership is a shared effort” and “In our team we discuss about collaboration between different functional domains”. (Appendix 2)

Section 2: Team roles

The following three statements were selected to give insights on this theme. “In our team we distribute work based on functional roles”, “In our team we recognize non-functional strengths of team members” and “In our team we reflect on behavioural patterns”. (Appendix 2)

Section 3: Self-organising project team

Assessment statements in this theme were “Our team regularly reviews the teams working practises”, “Our team generates concrete ideas to improve working practises”, “In our team

we validate assumptions through experiments” and “In our team we consider inspection as an opportunity to learn something new”. (Appendix 2)

Section 4: Overlapping development phases

These themes statements were “In our team we recognise the different time scales and dimensions our functional roles operate in”, “In our team we have visibility on how our work affects the outcome” and “In our team we promote a constant pace that can be sustained”. (Appendix 2)

Section 5: Shared Understanding

The statements selected for this theme were “In our team we seek to understand how others think”, “In our team we actively share experiences that have common reference points”, “In our team we are aware of cultural differences between team members” and “In our team we follow a common Definition of Done”. (Appendix 2)

Within the selected statements the terms “functional” and “non-functional” are used on several occasions. During the iteration of the statements the author discovered that these terms are not widely understood and require to be described for the sake of data consistency. A legend was added to the very beginning of the survey, formatted as a mandatory multiple-choice section, to ensure all respondants confirm having read and understood the definition. The definition of these terms is in alignment with the definitions explained in chapter 2.1.3 in this report.

"Functional" = skills and competences required to execute certain tasks, e.g. design, coding facilitation. A functional role would thus be Designer, Architect or Scrum Master

"Non-functional" = natural behaviour and interest, e. g. coordinating, challenging others, creative.

In addition to these assessment statements, the survey included one open question, where respondents were asked to describe what makes sprint retrospectives valuable to them personally. The question was introduced with the following text: “The Sprint Retrospective is an opportunity for the Scrum Team to inspect itself and create a plan for improvements to be enacted during the next Sprint. Please describe, what makes a sprint retrospective valuable for you.” (Appendix 2)

Furthermore, the author addressed the subject of sampling through the survey by adding a final category, through which respondents were able to provide statistical data about themselves. Chapter 2.3.1 described the phenomenon of distributed teams; in order to study the implications of this phenomenon within this context, the author requested the respondents to inform through multiple-choice questions, whether they are working in an international team, fully remote, partially remote or on-site.

As described in chapter 4.1 Sample of this document, the sample was defined to people who work according to the Scrum framework in the roles of either development team member or Scrum Master and have been working within the same project for at least 3 months over the cause of the past 12 months. To identify the valid answers from the sample set, statistical, mandatory, multiple-choice questions with one answer option were added to the survey. (Appendix 2)

All questions and statements in the survey up till this point were mandatory. No personal information of the respondants was collected systematically. (Appendix 5) But as the survey was intended to provide a baseline for further exploration through semi-structured interviews, the author also added a possibility for respondents to indicate their availability for an interview. Since the survey was set to be anonymous, the author wouldn't have been able to identify the name of the respondents to invite them to the interview. Therefore, an open field was added, where respondents could enter their name. The survey was closed with a free text field question, to give respondants the possibility to share any thoughts that appeared important to them regarding the subject at hand. (Appendix 2)

The survey was facilitated through Google Forms and the responses are stored in the authors personal OneDrive with the commissioning companies' network. Access to the drive is restricted to the author only; additional access can be granted through sharing the link. The survey itself was distributed through the company's internal Slack channels. The author shared the survey through the following channels: #cc-lean-and-agile, #cc-projectlead, #developer and #transformation. Through these channels the author had the possibility of reaching out to a selected population of 870 individuals who most likely would fulfil the required sample criteria. However, since these channels are open to anyone in the commissioning company, it is not possible to determine the exact size of the target

population within the sample. Given the explorative nature of the study however advisors from within the commissioning company did not see this as a critical issue. To ensure the validity of the study, the author commited to collecting samples until only little or no new insights can be drawn from the dataset that supports the definition of themes for the semi-structured interviews to be conducted as a next step in the research.

The survey was initially shared to the population on 30.01.2023 (Appendix 1). Reminders were sent on 03.02.2023 and 07.02.2023. The survey was closed on 08.02.2023 after which a data extract from the Google forms to Google Sheets was created and disconnected from the survey form. At this point, 25 responses had been collected. To assess validity of the survey data, the author reviewed first whether the dataset included sufficient level of diversity, before proceeding to the qualitative analysis. 28% of the respondents identified themselves as Scrum Masters, 24 % as Developers and 20% as Project Leads. Designers and Architects made up each 8% of respondents. 76% of respondents informed to be working partially remote, 40 % to be working fully remote. Only 12 % of respondents claim to work fully on-site with their teams. The share of international teams amongst respondents is 36 %. These numbers indicate that the survey reached a diverse set of functional roles as well as teams with different working practises within the population.

The received answers were rather homogenous and indicated a strong trend towards particular themes to be further researched during the interviews in the second part of this research. Together with the advisors from the commissioning company the author thus concluded this sample size to be sufficient to be able to identify themes and deduct follow-up questions for the interviews and to assess the overall maturity regarding the subject at hand on general level within the commissioning company.

4.2.2 Survey findings

The chapter of findings lays out the observations the author made from studying the data collected through the survey of qualitative nature and describes the insights that led the author towards the description of the interview questions, which are based on these findings. Therefore, target of this chapter is to increase transparency to the flow of the study, especially regarding the definition of questions for the semi-structured interviews.

The author started the review of the survey data from reviewing the sample within the respondents. 24 % of the respondents informed that they had been working only 1-3 months within the current project. From these, 50% identified as development team members and 50% as Scrum Masters. As both of these categories are widely represented within the sample, as described in chapter 4.2.1 Survey, the author concluded that the statement assessments can still be utilized to its fullest. The author however decided to exclude open comments of these individuals from the survey data eligible for this study as their limited experience in the context negatively affects the quality of insight that can be drawn from these comments.

Group Design

Overall the responses to this theme were very positive. Throughout all statements the majority of respondents, between 18 – 20, claim to “Always” work according to these statements. Since the statements in this section were paraphrased in a way, where “always” answers correlate with what the theory describes as favourable, this indicates that the team compositions are generally in a good shape and an awareness for the needs of different professional needs.

Team Roles

In this section the author wanted to study, what role the distinction between functional and non-functional roles plays within the respondants teams. The data indicates that a high focus is indeed on functional roles, while the relevance of non-functional roles doesn’t seem to be of importance to about 50% of respondent’s teams. Furthermore, 2/3 of the respondent’s state, that a reflection of behavioural patterns within their team takes place only rarely or not at all.

Self-organising teams

This section focuses on concrete team practises that are, in accordance with the scrum guide, of high relevance for successful self-organisation. Slightly surprising to the author, to all four statements half or a majority answered that these practises are applied rarely or never. 50% of respondants state that teams working practises are rarely or never reviewed. Even more concerning is the seemingly disconnect to empirical work on philosophical level: 75% of respondents inform that their team rarely validates assumptions through

experiments and 36 % only rarely see inspection as an opportunity to learn and grow. Yet again, a clear majority of respondents stated that their team does regularly generate concrete ideas to improve working practices. How this is done then, and how these ideas are taken forward, is subject to further exploration.

Overlapping development phases

As multidisciplinary teams work, they constantly learn and build up a shared knowledge base, from which all the domains can benefit. The responses to this theme's statements indicate to the author that, despite claiming to work according to empirical methods where solutions are developed iteratively, the work is actually organized in sequence. While half of the respondants state that they don't always recognize the different time scales their teams' functional roles work in and that they only rarely have visibility to how their work affects the overall outcome, 68% still claim that their team promotes a constant pace that can be sustained. It seems unlikely, that despite an apparent level of disconnection from each other, team members would succeed to benefit from a shared knowledge database that results in continues value delivery.

Shared understanding

A shared frame of reference, as described in chapter 2.3.2 Challenges of distributed, multidisciplinary teams, is of high importance for a team to ensure connectedness and belonging. The responses to this section indicate a high willingness to connect with others, as well as curiosity about others and a caring attitude. The values of the commissioning company are courage, passion, easy-going and caring. Especially the latter is reflected strongly in the responses to these statements.

Based on this data, the author was able to draw several observations worth noting and to integrate in the further cause of this research. There was a seeming contradiction between statements 1.2 Our team's way of working encourage favourable behaviour, to which 80% of respondents answered with "Always" and statement 2.3 In our team we reflect on behavioural patterns, to which 72% of respondents answer that they do this rarely or never. Also, between the answers to statement 1.2. and statement 5.4. In our team we follow a common "Definition-of-Done", to which only half of respondants answer favourable, seem

to be disconnection. The author was wondering, how do teams define shared ways of working? And how do teams use this definition in their day-to-day work?

The responses in the theme of self-organisation are concerning, as the philosophy behind these statements is at the very core of scrum. The reflection of these responses against the open question, of what makes retrospectives valuable to respondents, is interesting: most respondents highlight the importance of continuous improvement as a valuable outcome of retrospectives. This would indicate that the teams focus is only on the reflection of what happened and could be done differently, but not on the desired impact the change in action should bring about. The author also wanted to understand better, how teams validate the improvement ideas they define, if not by experimentation.

The results of section 4, Overlapping development phases, cause the author to claim, that unless work is done sequential, the level of disconnectedness can't possibly lead to a sustainable pace, unless the teams would re-do most of their work continuously. In order to research this observation further, the author decided on deepening the study around the question, what practises teams apply to validate ongoing development from different functional perspectives.

The respondants answers indicate a high awareness about the importance of a shared understanding within teams. However, the lack of awareness towards cultural differences is concerning, especially since 36% of respondents claim to work in international settings. The author decided to do further explorations about expectation management within the teams and to reflect how these practises affect to accountability and a sense of belonging within the teams.

Open questions

The survey contained an open question about the respondants view on the value of retrospectives at the beginning of survey and an open comment field at the end of the survey. The author sorted the answers to these questions according to the roles, the respondants indicated to have and according to the time period the respondants had been working in the project.

Scrum Masters were interested in gathering information from the teams to enable them and understand what would need improvement. They also wanted to make the teams stop and look back to achievements they have had as a team. They described the retrospective as a place to talk about difficult things as well as a place to build the team spirit. Project Leads wanted to see what went well and what not. They were keen on tracking the fixing of issues and blockers from previous retrospectives and to ensure that the good things, that work well, remain in place. Developers saw the value of retrospective in hearing other peoples' thoughts, adapting ways of working to changes in the environment and to get a good perspective of the capabilities of the development team. For designers, the retrospective was a space to go through what went well and what not, to develop ways of working and fix broken processes. Also, for them, the building of team spirit was an important outcome. Architects highlighted the value of retrospectives in making sure everyone is on the same page and working towards common goals. Other important outcomes of retros for them were to keep the team focused and moving forward and to fix problems in small batches, to become more efficient as a team.

Based on the open comments the importance of continuous improvement emerged throughout all the roles. The author was however not able to find any indication regarding a systematic approach, how improvement ideas are being identified, studied, and turned into concrete action points.

4.2.3 Interviews

Assessments are always attitudinal. They don't tell about the actual behaviour of people and are often subject to social bias, where people tend to give answers that they think are expected from them. The author therefore considered it important to validate observations made based on the survey data further. The method selected by the author was conducting semi-structured interviews. While interviews as such are as well at the attitudinal side of qualitative research methods, the ability to differ from a predesigned set of questions and to, for example, ask the interviewee to validate their claims through concrete examples, opts for a further reduction of bias and thus increases the overall quality of the research.

As described in chapter 3.2 Research design, the themes, building the base for the interview questions, were deducted from the findings of the survey. Through clustering the open statements of the respondents and the observations of the statement assessment, the following themes emerged to provide the structure for the interview: Continuous improvement, Ways of working, Inspect and Adopt, Facilitating of Retrospectives, Team Spirit, and Shared frame of reference. The deducted themes are in alignment with the theoretical framework of this study, although they seem to be tending more towards the operational end of the scale and less towards the conceptional, enabling scale, of the framework. All in all, the author saw the themes well fit to guide the work forward towards answering the research question.

The process of designing the actual interview questions followed a similar pattern as the design of the survey questions. The author drafted a set of questions and iterated them with 2 subject matter experts, including the commission company supervisor. Particular attention was given to phrasing open questions, that engage the interviewee to answer broadly and to reflect from different perspectives. Together the group concluded the questions to be giving sufficient structure, yet enough freedom to conduct a valuable interview session within roughly one hour. Due to the nature of semi-structured interviews, not all questions were discussed with all interviewees. In order to both broaden and deepen the answers the questions partially interconnect; thus, it was possible to at least address each theme with each interviewee in one way or another. (Appendix 3)

The selection of interviewees took place through the initial survey. All together eight (8) people indicated to be available for an interview, however only five of them provided their name as instructed in the survey; the author was not able to identify the other three persons. All persons identified qualified according to the set sample criteria. The invitations for the interviews were sent out immediately after the survey respondent had indicated their interest to participate to the interview. The invitation was informal and included a summary of what will be happening during the interview. All volunteers accepted the invitation.

Interviews were conducted on 14.02.2023, 16.02.2023, 20.02.2023 and 24.02.2023. Each of the interviews were held via Microsoft Teams and lasted about one hour. All interviews were

recorded. Recordings were saved in the authors personal one drive within the commissioning companies' network. As supporting material the author prepared a Google Slides deck, in which each of the questions was written and illustrated on one slide, in order to help the interviewee, focus on the question at hand during the interview. Through this it was also possible to let the interviewee have an influence on the order or questions, according to what seemed most important to them. This inclusive way of conducting the interview received good feedback from all interviewees.

The author started the interviews by thanking the participant for being available and by requesting permission to record the interview and to use the gathered information for the purpose of the study. The interviewee was informed, that the conversation is confidential, and that no personal data will be shared with third parties. The author continued to explain the purpose of the research, the expected outputs of the study and how interview participants will be able to access the findings later. Finally, the author explained that the interviewee will be able to follow and impact on the order of the questions through following the slides and reminded the interviewees about their right to not answer to any question.

4.2.4 Interview findings

The guiding themes for the survey, as described in more detail in the previous chapter, were continuous improvement, ways of working, inspect and adopt, facilitating of retrospectives, team spirit and shared frame of reference. As the interviews were conducted, the author made notes and later reviewed the recordings to reassess notes and fill in gaps. The continued data structuring process took place on the same Miro board, that was already used during the earlier phases of the research. Interviewees covered a range of experience levels, describing themselves as either junior, intermediate or senior in their functional role. (Appendix 4)

It soon became noticeable that the themes "Continuous improvement examples" and "Team Spirit" didn't get as much attention from the interviewees as other themes. Especially the "Inspect and adapt" theme was a very popular discussion topic in the interviews. It is however worth noticing, that "Continuous improvement" and "Inspect and adapt" theme

discussions were very often overlapping, and it seemed more natural for interviewees to stick with the other. A similar observation can be made with the themes “Ways of working” and “Expectation management”, where the one seems to be an enabler to the other and the interdependency seems to be rather strong. The author will thus describe the findings respecting the natural flow of the interviews and adhering to the interrelation of the themes.

The interviews started around the theme of shared ways of working. Interviewees described that when starting the collaboration with the new project team, they found structure and guidance from the basic scrum framework, however allowing space for organic development of practises. Different interviewees highlighted that the path towards shared ways of working is a continuous one and that it is important to point out observed disfunctions right away, e. g. through team internal communication channels, rather than saving them for the next retrospective. Others highlighted that the lack of physical co-working causes a lack of connection and results in unclear ways of working. In this case the practises are more driven by functional roles than in teams that have regular face-to-face co-working session.
Teams define ways of working for example through artefacts, processes, behavioural patterns, practices, and communication agreements. Concrete examples given were agreed project success criteria, integrated co-design methods, planning, and demonstrating results together.

While the interviewees mostly appeared to be in alignment about the importance and the process of establishing shared ways of working, the exploration of creating a shared frame of reference was rather a different story. The theme was not easy to understand by the interviewees and required the author to give frame the question through examples, such as the different time kind of time scale in the work of designers and software engineers. Interviewee 5 described this as being “part of the teams DNA to validate others work” and explain that practises have been put into place to support the creation of a shared frame of reference, such as regular co-design sessions where everyone in the team participates. (Appendix 4) The majority of interviewees however recognized that their teams work is very role driven, where designers design and developers develop. And although the work is paced iteratively, it is done in sequence. Teams share one backlog, but the work is distributed mainly based on experience and less based on available skills, interest and resources.

Interviewees also described that their project's purpose is focused on the project deliverables and that others personal or professional development aims are unknown. By some, even discussing openly about this kind of information is considered a topic rather too personal within a project team.

Which lead the author to ponder, what is it that the teams do talk about in their reflection sessions and who decides on the discussion topic? All interviewees stated that for the most there is no predefined topic for their teams' retrospectives. Furthermore, they highlighted the importance of having a space for reflection without agenda. Something which according to interviewee 3 is compromised by the fact that teams are working mainly distributed and are missing out on e. g. common coffee breaks. (Appendix 4) The Scrum Masters amongst the interviewees confirmed their awareness of having the possibility to define a topic, but for the most refrain from doing so as they want to leave this decision to the team.
The most popular approach seemed to be a divergent-convergent facilitation approach to retrospectives, where the team members first reflect very widely on the past sprint and then together select through voting on the most important item to be looked into in more detail, often leading to action items to move forward. Interviewees highlighted, that the initial data collection is done in self-focused writing exercises, often following a certain repetitive structure. Some teams use a team feeling indicator, e. g. a self-defined KPI follow-up during this process to indicate their mood.

The discussions on the "Inspect and Adapt" theme evolved around the convergence part of the retrospective. The author aimed to understand how much emphasis teams put on analysing their observations and experiences before agreeing on action points. While some described the discussion about action points already as impactful, many of the interviewees confirmed that they don't have systematic practises in place to assess root-causes during the retrospective discussions. Interviewee 2 described that the team member don't see themselves responsible for doing this, seeing it to be the task of the Scrum Master and went on to explain that the team is so occupied with functional work, that they don't have the capacity to do this kind of deep thinking around non-functional topics. Interviewee 1 acknowledged not having the skills to do or facilitate root-cause analysis. (Appendix 4) For the most part, the interviewees concluded, that the discussions around teams' observations during the retrospective stay on a subjective level moving towards action points rather soon.

Interviewees did however point out, that the number of action points doesn't tell about the value of a retrospectives: the teams pay attention to keeping the complexity of ways of working at level and avoid agreeing on action points by force.

The author continued by addressing the theme of "Continuous improvement" to the interviewees then to inquire what kind of changes the teams have been achieving and driving through the carefully selected action points. Interviewees pointed out that it is important to have the basics in good shape, before starting to improve anything. They recommend by starting with the basic ceremonies the Scrum framework includes and to practise these with the team. The interviewees agreed amongst each other, that organic evolution of practises will start to emerge if the team has enough time to think and reflect and if these reflections take place regularly. However, also here philosophies vary a lot: interviewee 1 explained an indicator of meaningful continuous improvement to be, if the team collectively just does it, without a clear responsible person being assigned. Interviewee 4 described how their team noticed a lack of transparency regarding the follow up of action points the team had agreed on and how they ended up adding the items to their scrum board for increased transparency. (Appendix 4)

The follow up on action points was a popular topic amongst the interviewees. While all agreed that having an action point as output of a retrospective is not what retrospectives are about, they took a different approach on the importance of follow-up. Many experienced a lack of transparency, lack of continuity but also lack of responsibility and accountability. The most impactful means that teams have found to keep track of action points is to make them part of the functional work by bringing them visible to their scrum board. Several interviewees reported that this has significantly helped their team to stay aware of their agreements. Others described to having occasional reflections in their retrospectives, where they go back to things that were discussed earlier to decide what should be kept and what should be scrapped. This, they pointed out, is particularly important when project team members change. Like already mentioned in the theme "continuous improvement" some interviewees take a more liberal approach here and for example interviewee 5 explained that within their team follow-up of actions points is not emphasised at all, leaving it to the team to decide whether proposed action points were meaningful enough for them to apply in the context of their daily work. (Appendix 4)

The forementioned level of accountability and responsibility is also closely related to the theme “Team Sprit”. When discussing this theme, and in more detail the question how the team aligns expectations towards each other, the discussion with interviewees became shallower. Interviewee 5 described that all team members are by default included in all discussions which ensures continuous alignment, interviewee 3 described a more functional approach and gave the alignment on work assignments as example for expectation setting. Interviewee 2 pointed out that their team is a group of homogenous think-a-likes and that not much of discussion about things is seen necessary, recognizing however the challenges with expectation management as the team often fails to meet set sprint goals. Interviewee 4 explained having regular discussions with individual team members to, amongst other things, align on wishes and expectations. (Appendix 4) Like in the shared frame of reference theme, also here the author was able to recognize a strong indication towards teams seeking safety in the realm of their functional role, struggling with going beyond it to become an integral part of a team where people can be vulnerable and trust each other.

5 Analysis

In this chapter the author reflects the findings of the study back to the theoretical framework with the intention to answer the initial research question “What is the value of retrospectives for Scrum teams in project work?”. The author chooses thematic analysis as method, as it gives a flexible approach to generate insights from qualitative data. Since a theoretical framework for this study was derived from the described theories and clustered into five themes, the author uses these themes to structure the data. (Delve, 2023)

Group Design

The survey data and the observations from the interview indicated that the teams generally have confidence in their skills and in the ability of their team to solve the challenges at hand. The readiness of the teams to address dysfunctions as part of their work systematically and continuously has been strongly communicated through the survey and during the interviews. This indicates a general awareness of the teams on the importance of transparent and consistent working practices and ties well with the qualities of group design indicated by Hackman as described in chapter 2.1.2 Definition of a team. However, the author speculates

that the limited skills and competences of groups members to describe favourable behaviours, and to pursue them through the discovery of behavioural insights, proves as an limitation to teams.

Albeit not in the primary focus of this study, the author still wants to highlight that none of the interviewees expressed concerns regarding the lack of organisational support, neither from within the commissioning company nor from within the client environment.

Team Roles

Throughout the interviews it was emphasized by participants that the development of ways of working should be based on the principles of the scrum framework, applying ceremonies, and making them valuable for the team. This, in combination with the earlier stated observation that teams practise only a little root-cause analysis, indicates to the author, that teams are inclined to ad-hear to certain practises out of routine and following a best-practise approach, rather than shaping their practises around strengths and natural behaviours of the individuals in the team.

The author observed throughout the study that teams seem to find security within their functional roles. This appears to be reinforcing the professional identity of the team members. So far as to becoming an impediment towards building trusting relationships on a personal level which could enable more behaviour-based practises. One limitation of this study is, that the element of psychological safety has not been studied as a part of this work. Because of this potential limitation, the author cannot rule out that there might be further attributes impacting to the reinforcement of professional identity.

Self-organising project team

The theoretical framework describes self-organising project teams in chapter 2.2.2 Scrum as multidisciplinary group, often working in sprints, that aims to deliver valuable work regularly. During the review of the survey answers the author expressed concerns about the philosophical disconnect to the values, the Scrum framework is built upon, especially in the parts of empirical working methods. The study of the inspect and adopt theme uncovered that many teams struggle with action-point follow up and majority doesn’t have a practise

for root-cause analysis in place. While actions points in itself were not seen as the sole value of retrospectives, the teams seem to stay on the surface with their discussions. Neither root-causes nor anticipated impact of possible action points are in the focus of the discussions.

The author recognized a connection to the forementioned lack of behaviour drivenness reflected in teams' working practises in general. Since this study focuses on the self-leadership abilities of teams, this is of critical importance. At this stage of the understanding the author describes sustainable team improvement as strengthening the trust relationships within the teams and to go beyond one's professional identity. The key could lay with deeper and more objective discussions about behavioural root-causes and with revalidating anticipated outcomes on regular intervals.

Overlapping development phases

Based on data from the survey the author expressed concerns whether the teams truly apply incremental and iterative working methods. The interview data further strengthened this initial observation. While team members were aware of the importance of iteration, the concept is not always applied practically. Interviewee 4, who describes as junior Scrum Master, also expressed concerns that they don't have visibility to how similar issues are navigated and solved in other teams. (Appendix 4) The more experienced interviewees described how integrated mechanisms in their teams' practises, such as co-design, give team members concrete possibilities to contribute and impact. At this point particularly, a high level of trust and empathy as well co-location seem to play an important role.

The data thus indicates, that for a team to have the ability to fully adopt empirical working philosophies, they are first to master the challenges described in the earlier themes of this chapter. The findings support the notion, that there is potential to leverage the knowledge of experienced colleagues and strengthen the toolkit of the Scrum Master's community within the commissioning company collectively.

Shared frame of reference

In chapter 2.3.2 Challenges of distributed, multidisciplinary teams the author summarized how a common identity strengthens a sense of belonging within the team. The common

identity of a team is created through shared experiences, that team members reflect on, laugh, or complain about. Examples for these kinds of shared experiences are e. g. team outings or product releases. It is through the context, that accountability and trust are built and what encourages team members to be vulnerable.

During the interviews it was highlighted by several interviewees that they experience an increased need for unfacilitated encounters with their co-workers. Some teams have found ways to navigate this need, for example through virtual pizza-breaks as described by interviewee 3, it however seems more of an exception than a rule. (Appendix 4) While commonly there is no pre-set topic for the retrospective sessions of teams and teams are empowered to select the topics to be discussed themselves, the underlaying expectation seems to be that the discussion in the retrospective ought to be work related, critical, and forward-driven. This does not meet the definition of "structured unstructured time" as described by Haas and Mortensen. While these discussions are valuable from the perspective of developing teams' practices, they are not necessarily driving the development of a shared frame of reference. The author argues that based on the findings of this study, there are no systematic or sufficient practises in place on project team level as of now, that provide sufficient "structured unstructured time".

Furthermore, it is notable that the physical distribution of teams was described as a burden, impacting a wide range of other themes discussed in this paper. Cultural distribution on the other hand did not emerge as a major topic in this study, although several of the survey and interview participants are part of international teams. To the author, also this indicated, that discussions are mainly being kept around work-related topics, leaving little space for a personal touch.

The author set out to answer the question "What is the value of retrospective for Scrum teams in project work?". Based on the data and information obtained through this study, the value of retrospectives for Scrum teams in project work can be described as having regular encounters as a group, through which they continuously create the transparency on teams' success and to recognize dysfunctions within the team with the intension to further evolve and grow as a team. They utilize the retrospective as a possibility to discuss about their findings and, if needed, decide what can and should be done about identified impediments.

6 Recommendations

With this study the author aimed to assess the Scrum team's awareness of the opportunities for self-leadership the teams have and how they are being utilized in the realm of retrospectives.

Based on the collected data the author concludes that team roles are mainly viewed from a functional perspective in the scrum teams of the commissioning company. This allows teams to safely interact through a professional identity, but it may lead to a level of complacency, where no further bonding on a personal level takes place. Similarly, Scrum ceremonies, such as the retrospective, are facilitated according to their literal description in the Scrum guide and little adjustments to their purpose, reflecting teams' evolution and needs are made. As a result, teams deliver and perform but are missing out from leveraging their full potential. This shows in difficulties to apply empirical working philosophy. The data also suggests that the level of seniority the Scrum Master brings into the team might have a causal relation to this.

Based on this conclusion the author wants to suggest two ideas, from which one focuses more on the Scrum Master role, as an accelerator for teams performance, and the other one on the Scrum teams as a whole. The author proposes to establish a Scrum Master support network within the commissioning company. Through regular, lightweight community events, e. g. through Lean Café facilitation, encourage Scrum Masters to share their challenges, identify possible organisational impediments and get inspiration on impactful practises from fellow peers. In addition to this, theory sessions can lead the competence development on team evolution topics and inspire the Scrum Masters to explore new territories with their teams.

The framework of this study can provide the initial outline for this experiment by describing the themes to be included to the theoretical deep-dives and by helping to define a clearer distinction of the role of Scrum Masters vs. Project Leads in general. Similar community events are already established at the commissioning company and are running successfully. They can also provide as powerful tool to further identify collective means to address more structural issues, that might not have been uncovered through this study at hand.

Another opportunity, that the author sees as left unused based on this study, is the concept of impact from development teams perspective. The author's recommendation is to describe, on team level, a goal, that is based on the wishes, professional aspirations, and growth ambitions of the individual team members. "Impact that lasts" is the leading guideline in the commissioning companies customer work. Yet, the same doesn't seem to lead the project teams themselves. A shared goal for the project motivates and guides the team members to grow as professionals and inspires them to bond and connect with others in the group and that goes beyond the job to be done. Often the project work itself is exceedingly complex and difficult to master. This further reduces the team's ability to work on their collaboration skills. It is however often exactly these skills that are transferable from one project to another and thus form one of the most important, but undervalued assets of the team members. The creation of a team goal allows team members to express themselves freely beyond their own functional role. It provides the team a guiding tool they can reflect on and creates transparency towards individuals' needs for growth within and through the project. A possible method to use here is the creation of a Team Canvas, which the team can start to populate from early days on and re-iterate from time to time. (miro.com, n.d.) It can also guide the team to shape practises around what is valuable and important to individuals, rather than adhering to a strict framework by the books.

7 Conclusions and reflections

The purpose of this study was to explore the abilities and practises of self-leadership of Scrum teams in project work, mainly through the Scrum ceremony called retrospective. The authors research question is "What is the value of retrospectives for Scrum teams in projects?" The study was conducted at the commissioning company Solita Oy.

The theory for this research was based on reports published about team dynamics and the needs of multidisciplinary teams by H. Takeuchi & I. Nonaka (1986), J. R. Hackman (1983) as well as M. Haas & M. Mortensen (2016). Based on these earlier conducted studies and publications the author selected elements into the framework for this research are to be expected to be in a team's autonomy and influence to impact upon. The selected themes for this study were Group Design, Team roles, Self-organizing project teams, Overlapping development phases and Shared Understanding. Since the research was to be conducted

through Scrum teams, it felt natural to align the study with the Scrum framework as described in the current iteration of the Scrum Guide.

This qualitative study was of exploratory nature, where two different research methods have been applied. With the help of a survey-based assessment the author aimed to understand how the Scrum teams practises correlate with the defined theoretical themes. The survey also served the purpose to lead the study further in its exploratory means, as the author deducted the questions for semi-structured interviews from the conclusions drawn based on the survey. Semi-structured interviews were conducted to further validate the authors assumptions derived from the survey. This form or interview was selected to make sure the discussions stay on subject, while giving enough room to uncover new perspectives. In order to create more depth to the data new themes were defined and aligned to the theoretical framework, to lead the research process forward: Continuous improvement, Ways of working, Inspect and Adopt, Facilitating of Retrospectives, Team Spirit and Shared frame of reference. A total of 25 responses were collected from the survey. Five semi-structured interviews were conducted for this research.

The main conclusion to be drawn is, that Scrum teams in project work do find value in retrospectives and they describe the value in its regularity, the creation of transparency about things that work and such that don't and in having the opportunity to improve as a team. And while the continuous improvement of team's practises was described as a desirable outcome of having regular retrospectives, the agreement on clear action points during each retrospective is not that important. This indicates that teams find more value in meaningful discussions.

Despite that, the author discovered Scrum teams' low attention to root-causes and impact when discussing dysfunctions and opportunities. This lack of behavioural insight reduces the impact of actions that aim address teams dysfunctions. The results of the study show, that Scrum teams find security in functional roles and the literal adherence to Scrum ceremonies, reinforcing professional identity rather than driving the development of a shared group identity. It is difficult to say, what role psychological safety plays here, as this has not been researched as part of this work, or whether this is due to a lack of awareness within the teams.

However, the data indicates that the experience level of the scrum master is of highest importance when facilitating not only the Scrum events but also the teams evolutionary development and development of trust within the team. The author sees here two fundamental opportunities to explore further within the commissioning company: strengthening the role of the Scrum Master through a community-approach and strengthening the non-functional bonds within Scrum teams to the creation of a shared goal, that goes beyond the job that needs to get done.

The theory framework highlighted the increased importance of a team's shared frame of reference. And while the collected data strongly suggests that more unfacilitated sense-making discussion is seen as beneficial for the teams it is not easily arranged. Retrospectives do not pursue the development of a shared frame of reference for teams which leaves this opportunity is heavily underused. It is strongly recommended to all Scrum teams to consider the establishment of practises that provide the team members with the freedom to discuss freely with no clear goal in mind.

References

15th Annual State of Agile report. (2021) Boston: digital.ai. Retrieved on 17 April 2022 from https://digital.ai/resource-center/analyst-reports/state-of-agile-report

Adkins, L. (2010). *Coaching Agile Teams.* Boston: Pearson Education, Inc.

Alliance, S. (n.d.). *4 signs your scrum teams are struggling*. Retrieved on 07 May 2022 from https://resources.scrumalliance.org/Article/4-signs-scrum-team-struggling

Ambler, S. W. (2009). *Agility at Scale 2009 Survey Results*. Retrieved on 30 April 2022 from http://www.ambysoft.com/surveys/stateOfITUnion200911.html

Beck, K.; Grenning, J.; Martin, R. C.; Beedle, M.; Highsmith, J.; Mellor, S.;. . . Marick, B. (2001). *Manifesto for Agile Software Development*. Retrieved on 17 April 2022 from https://agilemanifesto.org/

Belbin.com. (n.d.). *Belbin History*. Retrieved on 04 May 2022 from https://www.belbin.com/about/history

Belbin.com. (n.d.). *Belbin Team Roles*. Retrieved on 04 May 2022 from https://www.belbin.com/about/belbin-team-roles

Belbin.com. (n.d.). *Belbin for teams*. Retrieved on 04 May 2022 from https://www.belbin.com/belbin-for-teams

Darter, K. (2016). *Staffing a Project Team*. Retrieved on 04 May 2022 from https://www.projectmanagement.com/contentPages/article.cfm?ID=356595&thisPageURL=/articles/356595/Staffing-a-Project-Team#_=_

Delve (n.d.). *How to Do Thematic Analysis*. Retrieved on 03 April 2023 from https://delvetool.com/blog/thematicanalysis

Haas, M.;& Mortensen, M. (2016). *The Secrets of Great Teamwork*. Harvard Business Review 94, no. 6, ss. 70-76.

Hackman. (1983). *A nominative Model of work team effectiveness.* New Haven: Yale school of organisation and management.

Kahneman, D. (2011). *Thinking, Fast and Slow.* New York: Farrar, Straus and Giroux.

Löffler, M. (2017). *Improving agile retrospectives: helping teams become more efficient.* Addison-Wesley Professional.

Martin, R. C. (2019). *Clean Agile: Back to Basics.* Boston: Pearson. Retrieved on 02 April 2022 from https://learning.oreilly.com/library/view/clean-agile-back/9780135782002/title.xhtml.

Miro.com (n.d.) Miroverse/Team Canvas. Retrieved on 16.04.2023 from https://miro.com/miroverse/the-team-canvas/?social=copy-link

Ockerman, S.; & Reindl, S. (2019). *Mastering Professional Scrum.* Boston: Addison-Wesley. Retrieved on 10. 04 2022 from https://learning.oreilly.com/library/view/mastering-professional-scrum/9780134841632/

Open Learn. (2012). *How teams work*. Chapter 4 Functional Team Roles Retrieved on 04 May 2022 from https://www.open.edu/openlearn/money-business/leadership-management/how-teams-work/content-section-4

Sankar, S. (2020). *What percentage of Agile projects fail?* Retrieved from LinkedIn: https://www.linkedin.com/pulse/what-percentage-agile-projects-fail-sankar-sudarsanan-csm-/?trk=public_profile_article_view

Saunders, M. N.;Lewis, P.;& Thornhill, A. (2019). *Revised edition of the authors' Research Methods For Business Students.* New York: Pearson.

Schwaber, K.;& Sutherland, J. (2020). *Scrum Guide* Retrieved on 17 April 2022 from https://scrumguides.org/scrum-guide.html

Snowden, D. (2022). *The CYNEFIN Making sense of complexity*. Retrieved on 30 April 2022 from https://thecynefin.co/about-us/about-cynefin-framework/

Solita.fi (2022). *Solita Insider.* Retrieved on 30 April 2022 from https://drive.google.com/drive/folders/1MfOg7-1kUDMW2CQWywx4zBCUBr1LA5aS

Solita.fi. (2021). *Our customers* Retrieved on 07 April 2022 from https://www.solita.fi/en/customers/koronavilkku-the-worlds-most-downloaded-coronavirus-app/

Solita.fi. (2022). *Careers* Retrieved on 07 April 2022 from https://www.solita.fi/en/careers/

Solita.fi. (2022). *About us* Retrieved on 07 April 2022 from https://www.solita.fi/en/company/

Takeuchi, H.;& Nonaka, I. (1986). *The New New Product Development Game*. Harvard Business Review.

The CHAOS Report (1994). Boston: The Standish Group. Retrieved on 10 April 2022 from https://www.standishgroup.com/sample_research_files/chaos_report_1994.pdf

Thompson, L. L. (2014). *Making the Team: A Guide for Managers, Fifth Edition.* Boston: Pearson.

Woodward, E.;Surdek, S.;& Ganis, M. (2010). *A practical guide to distributed Scrum.* Pearson Education India. Retrieved on 30 April 2022

Workfront.com. (n.d.). *Waterfall Methodology* Retrieved on 10 April 2022 from https://www.workfront.com/project-management/methodologies/waterfall#:~:text=The%20waterfall%20methodology%20is%20a,detailed%20documentation%2C%20and%20consecutive%20execution.

Appendix 1: Invitation to survey

"Retrospectives are a waste of time!"
Have you ever heard someone referring to retros in such or similar way? Or have you, yourself, perhaps thought this at times? You are not alone.

As part of my International Business degree I am researching the concept of retrospectives in scrum teams with the question: What is the value of retrospectives for scrum teams in project work?

With this exploratory study I aim to gain insights on two subjects:

- Which are impactful methods, teams have found and established that help to uncover the teams dysfunctional root causes?

- What opportunities are left unused to take a positive impact on their working environment?

YOUR HELP IS NEEDED!

I am conducting this research within Solita project teams that are working according to the scrum framework. I am therefore asking you to help with my research

- by answering this questionnaire: LINK TO SURVEY

- by spreading this message within your internal network

- by letting me know, whether you would be available to participate to an interview on the subject as well.

The survey is not automatically collecting names. The findings of the study will be shared later this year through an infosession and in intra.

Appendix 2: Questions of the Survey

Please describe, what makes a sprint retrospective valuable for you.

Section 1 [Our team has the experience to rise to the challenge at hand.]

Section 1 [Our team's way of working encourage favourable behaviour.]

Section 1 [In our team leadership is a shared effort.]

Section 1 [In our team we discuss about collaboration between different functional domains.]

Section 2 [In our team we distribute work based on functional roles.]

Section 2 [In our team we recognize non-functional strengths of team members.]

Section 2 [In our team we reflect on behavioural patterns.]

Section 3 [Our team regularly reviews the teams' working practises.]

Section 3 [Our team generates concrete ideas to improve working practises.]

Section 3 [In our team we validate assumptions through experiments.]

Section 3 [In our team we consider inspection as an opportunity to learn something new.]

Section 4 [In our team we recognise the different time scales and dimensions our functional roles operate in.]

Section 4 [In our team we have visibility on how our work affects the outcome.]

Section 4 [In our team we promote a constant pace that can be sustained.]

Section 5 [In our team we seek to understand how others think.]

Section 5 [In our team we actively share experiences that have common reference points.]

Section 5 [In our team we are aware of cultural differences between team members.]

Section 5 [In our team we follow a common Definition of Done.]

"Our team is .... (Please tick all boxes that are describe your team)"

(international / working fully remote / working partially remote / working on-site)

My functional role in our project is

(Scrum Master / Product Owner / Architect / Designer / Developer / Project Lead)

I have been part of my project team since

(1-3 months / 4-6 months / 7-12 months / more than 12 months)

If you have the possibility to participate to a short interview on this subject, please add your name below (the data will be excluded from the research data) or give me a ping in Slack (@Melanie)

Any last thoughts, you would like to share?

Appendix 3: Outline of the interviews "The value of Retrospectives for Scrum Teams"

THANK YOU FOR JOINING THIS INTERVIEW!

Request for permission

Confidentiality

Purpose of the research

Expected outputs of the study

Access to the findings

Your right not to answer

Practicalities of the interview

Questions linked to "shared ways of working"

How did your team define shared ways of working?

How does your team use this definition in your day-to-day work?

Question linked to "facilitating retrospectives"

How does your team agree on the theme for the retrospective?

Question linked to "continuous improvement"

Can you share examples how continuous improvement is practised in your team?

Questions linked to "inspect and adapt"

How do you as a team get to the root of issues that you identified?

How are actions followed up by your team?

Questions to "shared frame of reference"

How do you as a team validate ongoing development from different functional perspectives?

Questions to "team spirit"

How does your team align on expectations towards each other?

How do you hold each other accountable to these expectations?

Appendix 4: List of interviewees

Number of interviewees	Functional role	Experience level as described by interviewee
Interviewee 1	Scrum Master	Intermediate
Interviewee 2	Scrum Master	Intermediate
Interviewee 3	Developer	Senior
Interviewee 4	Scrum Master	Junior
Interviewee 5	Scrum Master	Senior

Appendix 5: Data processing plan

Data was collected through a survey and through interviews. The tool, selected to facilitate the survey, was Google Forms hosted in the network of Solita OY and is saved to the own drive of the author within the network. The survey was set to be answered without the collection of email address. Response editing was turned off. Answering to the survey required users to sign in to Solita Oy network. Each participant was able to submit only one answer. Personal data that was collected through the survey are functional role and duration in current role. No personal identification of respondents is possible based on this information only. Furthermore, had respondents the opportunity to leave their name in an open text field in order to indicate their willingness to participate in to an interview. It is for this reason, that the survey data will be deleted after the research work has been accepted by HAMK. The author set a reminder for 20.6.2023 to follow up on this action. The survey was shared through Solita OYs Slack application in several channels. The discussion that emerged there is subject to Solitas Slack retention plan and not in the responsibility of the author for deletion.

Further data was acquired through semi-structured interviews. The interviews were facilitated through Microsoft Teams, requiring participants to sign-on to Solita OY network. The interviews were recorded. The author requested permission for the recording, before the same was started. The recordings are saved in the Solita Oy OneDrive and are accessible by the author and the interview participant in question. All interviews were 1:1. The author has informed the participants about the nature and purpose of the research and ensured that interviewees are aware of their right not to answer to any question. Permission for the utilization of quotes has been requested by the author separately in case such a situation arose. It has been agreed with the interviewees that the recordings are stored in the authors OneDrive within Solita Oy network for the duration of the research. Once the work has been completed and is accepted by HAMK, the recordings will be deleted. The author has set a reminder for the 20.6. 2023 to follow-up on this action.