



CHALMERS

Agile project management practises for digital production

Bachelor's thesis in Industrial management and production engineering

Fred Andersson
Elin Sandahl

**DEPARTMENT OF TECHNOLOGY MANAGEMENT AND ECONOMICS
DIVISION OF INNOVATION AND R&D MANAGEMENT**

CHALMERS UNIVERSITY OF TECHNOLOGY
Göteborg, 2021
www.chalmers.se
Report number E2020:122

Report number E2020:122

Agile project management practises for digital production

Fred Andersson
Elin Sandahl

Department of Technology management and economics
Division of Innovation and R&D management
CHALMERS UNIVERSITY OF TECHNOLOGY
GÖTEBORG, SWEDEN 2021

Agile project management practises for digital production
FRED ANDERSSON
ELIN SANDAHL

©FRED ANDERSSON, 2021
© ELIN SANDAHL, 2021

Report number: E2020:122
Department of technology management and economics
Chalmers University of Technology
SE-412 96 Göteborg
Sweden
Telephone: +46 31 772 10 00

Chalmers Reproservice
Göteborg, Sweden 2021

FRED ANDERSSON

ELIN SANDAHL

Department of Technology management and economics

Division of innovation and R&D management

Chalmers University of Technology

Abstract

Project management is constantly evolving to be able to adapt to the circumstances needed to complete the steps during a project. When there is a increased demand for flexibility and customer collaboration, new concepts are implemented. One example of this is the software development industry. In this industry it is common for customers to not have requirements set in stone at the beginning. Instead they have a general picture that can be built upon and completed in several iterations. From these conditions agile project management evolved as a symbiotic way of working with stakeholders. There are other industries that also have been affected by the increased speed and cooperation between companies and customers. One of these are digital visual production. This industry works both with technical and artistic aspects of producing digital photo-realistic images used in commercial and promotional purposes. Just like software development, digital visual production often differ in project length, how well defined the requirements are and the need to continually produce value for the customer. They are also both in need of being able to do rapid changes in some part of their produced software or visual material if it does not fulfill the intended goals. With these similarities in mind it could be a great opportunity to find out if the agile practises could be used in not only software development but also in digital visual production.

To answer if this is the case an interview study had been conducted at Rapid Images, a company working with producing digital imagery. There a team of people with different roles and expertise's have been interviewed to find out if the conditions are similar enough to apply agile practises in a new field of work.

Using the collected empirical data and theory of agile practises and principles results have been produced and conclusions drawn regarding the main pillars of agile practises. These are the following. Sprints can be used to divide the work in to realistic increments and continually produce. Daily stand up is a good concept if it is kept short and concise. Planning is important for monitoring progress and involve the team giving them ownership of the process. Retrospectives is a chance to reflect and improve processes. It is however important that action is taken on the suggestions during retrospectives. Cross functionality makes the team more flexible but stands in conflict with excellence in specific areas. Therefore it can be beneficial to first master some areas of work before working with a wide range of tasks.

Keywords: agile, project, digital visual production, sprint, stand-up, planning, retrospectives, cross-functional teams

Acknowledgements

We would like to give great thanks to the many people involved in this thesis. First to be mentioned is the team at Rapid Images that we worked with. Their responses were the foundation for our research. Their time and patience was greatly appreciated.

We would also like to thank our supervisor at Rapid Images, Pär Toresson. Both for his guidance in helping us to get an introduction to the interesting and unique area of digital production but also his open and welcoming approach.

Lastly we would like to give a big thank you to our supervisor at Chalmers, Kaj Suneson for his many readings of our report and the valuable feedback that helped us to complete this thesis.

Fred Andersson and Elin Sandahl

Gothenburg, Sweden

2021/01/21

Contents

| | |
|---|------------|
| Abstract | i |
| Acknowledgements | iii |
| 1 Introduction | 1 |
| 1.1 Background | 1 |
| 1.2 Aim | 2 |
| 1.3 Limitations | 2 |
| 1.4 Specification of issue under investigation | 2 |
| 2 Theory | 3 |
| 2.1 Agile methods | 3 |
| 2.1.1 The Agile values and principles | 3 |
| 2.2 Why Agile | 5 |
| 2.3 When does agile work | 5 |
| 2.4 Working Agile | 5 |
| 2.5 Agile practises | 6 |
| 2.5.1 Sprints | 6 |
| 2.5.2 Daily meetings | 7 |
| 2.5.3 Planning | 7 |
| 2.5.4 Cross-functional teams | 8 |
| 2.5.5 Retrospectives | 8 |
| 2.6 Building teams using agile practises and tools | 8 |
| 3 Method | 11 |
| 3.1 Interview study | 12 |
| 3.1.1 Interview description | 12 |
| 3.1.2 Selection | 12 |
| 3.1.3 Interview method | 13 |
| 3.1.4 Interviews | 13 |
| 3.2 Analysis | 14 |
| 3.3 Reliability and validity | 14 |
| 3.4 Discussion of ethical and sustainable aspects | 15 |
| 4 Rapid Images | 17 |
| 4.1 About Rapid Images | 17 |
| 4.1.1 The studied division | 17 |
| 4.1.2 Team layout | 18 |
| 4.1.3 Current practices | 19 |
| 5 Result | 21 |
| 5.1 Interviews | 21 |
| 5.1.1 Conditions affecting the process and organisation | 21 |
| 5.1.2 Sprints | 24 |
| 5.1.3 Cross-functionality | 25 |

| | | |
|----------|--|-----------|
| 5.1.4 | Communication and team meetings | 26 |
| 5.1.5 | Daily stand-ups | 27 |
| 5.1.6 | Retrospectives | 28 |
| 5.1.7 | Planning and visualization of progress | 30 |
| 6 | Analysis and discussion | 33 |
| 6.1 | Sprints | 33 |
| 6.1.1 | How Sprints can be used | 34 |
| 6.2 | Daily stand-up | 34 |
| 6.2.1 | How Daily stand-ups can be used | 35 |
| 6.3 | Planning | 35 |
| 6.3.1 | How planning can be used | 36 |
| 6.4 | Visual planning board | 36 |
| 6.4.1 | How to use planning | 37 |
| 6.5 | Retrospectives | 37 |
| 6.5.1 | How Retrospectives can be used | 38 |
| 6.6 | Cross-functional teams | 38 |
| 6.6.1 | How Cross functionality can be used | 39 |
| 7 | Conclusions | 41 |
| 7.1 | Sprints | 41 |
| 7.1.1 | A possible way to use sprints | 41 |
| 7.2 | Daily stand-ups | 41 |
| 7.2.1 | How daily stand-ups could be used | 41 |
| 7.3 | Planning | 41 |
| 7.3.1 | How planning could be used | 42 |
| 7.4 | Retrospectives | 42 |
| 7.4.1 | How retrospectives could be used | 42 |
| 7.5 | Cross functionality | 42 |
| 7.5.1 | How cross functionality could be used | 42 |
| 8 | Future work | 43 |
| | Appendix | i |
| A.1 | Original quotes and translations | i |
| A.2 | Interview Questions | xvi |

1

Introduction

In this chapter the background, aim, limitations and research questions for the thesis is presented.

1.1 Background

Project management is continually evolving to adapt to the new challenges that companies face. Previously projects have been predictable and variables changing at a less rapid rate. However, as the pace of adapting to changes the demand for more flexible project management has increased. One example of this change is the software development industry. They have applied an agile mindset and practises to work in close relations with stakeholders[19]. Agile practises and principles are well established and used within software development [17]. A major reason for its popularity is the possibility to adapt to new requirements, rapid changes and changed demands during the duration of a project[7, 12, 17].

Agile practises are suitable in environments with high uncertainty, when projects are difficult to plan as circumstances, obstacles and requirements might be hard to define or predict [19]. It encourages collaboration and cross training and requires team members with high motivation.

Other industries have tried to reap the benefits of the agile ideas. With the increased demand for quick adaptation companies with similar conditions to software development have started using agile practises and principles. One field with similar conditions is digital visual production.

Agile practises origin from software development. In 2001 experts in software development, using different project practises and principles met to discuss what characteristics successful software development projects had in common. This meeting resulted in "*Manifesto for Agile Software Development*" where four ground values for agile practises were established [12].

Today Agile practises have many different areas of use and the implementation is often tailored to the circumstances at the individual company. Agile practises are an iterative way of working containing several steps. The work is planned by being broken down into tasks, divided by importance and performed over a relatively short period of time, depending on the project. Usually this time is between two weeks and two months [17]. The work periods have various names such as sprints, iterations or increments. In this thesis they will be referred to as sprints. These steps are then repeated in several sprints until delivery of the project, or continuously as long as the project is updated.

With the technology available today in digital visual production, it is possible to create computer generated photo-realistic pictures in many different angles, colors and with realistic special effects. This new technology also opens up the possibility to meet a larger amount of requirements concerning for example light, look and details. To be able to supply the increased demand in quality, quantity and features agile practises could give an edge to solve these challenges.

The development of graphic material is a combination of a creative graphic process as well as technical development, where technically oriented requirements are precise and can be described on exact terms. However this need to be combined with requirements described by customers which needs to be interpreted by the developer. These circumstances creates a situation where a continuous dialog with the customer is necessary, as there is a need to be able to adjust to changed requirements due to

difficulty in interpretations. This has similarities with the challenges in software development. Agile practises might therefore be suitable for digital visual production.

Because of the resemblance between how software teams work in groups in close relations with the customer and how digital production is done in a similar fashion it would be of great interest to see if agile working practises translate to other areas. In this case visual digital production.

1.2 Aim

The purpose of this study is to evaluate suitable agile practises for digital visual production. The practises are to be reviewed based on their possible impact on the production.

1.3 Limitations

The study will only investigate potential benefits and disadvantages of agile practises and how they compare to the currently existing production in the studied division. It will not compare those to other production theories. The study will not discuss implementation and change.

1.4 Specification of issue under investigation

The study's goal is to evaluate suitable agile practices which can be suggested for implementation in the existing digital production. The practises will be analyzed depending on the situation at the division to investigate which practises would benefit the production. The questions to be answered are:

- What are the advantages and disadvantages of the agile practises; daily stand up, agile planning and visualization, sprints, retrospectives, cross functionality in digital production?
- How can the agile practises; daily stand up, agile planning and visualization, sprints, retrospectives, cross functionality be used in digital production?

2

Theory

In this chapter, the theories behind agile principles and values are presented. Then a description of why agile is used and what the difference between doing and being and agile is.

2.1 Agile methods

Agile project methods took shape in the software development industry and was defined in 2001 by the Agile Manifesto [12]. The manifesto was the result of leading software developers meeting with the goal to define what successful development projects had in common, although the manifesto is in no way a project instruction plan or a tool set, it does state four core values for Agile methods [19]. Since the manifesto was written in 2001 many different Agile method frameworks has been presented, where Scrum and Extreme Programming are two of the most popular ones [13, 22]. These sub methods have different approaches depending on what kind of challenges they were designed for, but each of them contain several agile practises [13].

2.1.1 The Agile values and principles

The four core values of agile methods are formulated as four values to prioritize over an opposed value [12] where they both are important but one always has the higher priority.

”Individuals and interactions over processes and tools” In any production the tools and processes are of course important to be able to do the work, but without motivated and competent individuals who knows how to create value through them, none would be made [22]. This value claims that progress is made through individuals interacting and working together [19].

”Working software over comprehensive documentation” Even though necessary documentation to run and maintain the software is needed, the main priority is to make working software as this is what is creating value for the customer [13].

”Customer collaboration over contract negotiation” As agile methods encourage having a close relationships with the customer, rather than a transactional relationship, to be able to understand and adapt to the customer requirements that might change during the process [19].

”Responding to change over following a plan” As the customer might change requirements and the conditions might change during the progress of the project, it’s important to respond and adapt to those rather than commit to a detailed plan [13].

The 12 Agile principles



Figure 2.1: the agile principles [12]

The agile principles are 12 statements made to support the 4 agile values [13]. There are some criticism against those principles since not all of them actually are principles [16]. As Meyer [16] suggests, some of them are rather practices than principles, some are platitudes, they have redundancy and some make claims, which makes it harder to use them as just principles. When looking at the principles listed in figure 2.1, most of them are organizationally orientated, and some of them are more technically oriented [16].

Organizational principles and values

The agile principles and values has a main focus on humans and interactions with a strong customer focus [16], expressed for example by the value "Individuals and interactions over processes and tools", as well as in several of the principles which focuses on the individuals and the team rather than the processes and tools.

Technically oriented principles

The agile values and principles has a high focus on result that brings value to the customer[13], such as the principle "Working software is the primary measure of progress" as well as what is implied by the values about "Working software over comprehensive documentation" and "Responding to change over following a plan". Working software is mentioned in the values as well as several times in the principles and could therefore been seen as a key priority to agile methods.

2.2 Why Agile

In many ways Agile methods are more of an ideology than a project management method [16]. Based on the 4 core values and the 12 principles defined from software industry many methods has then developed which are more or less defined as practises or principles to follow. In the software industry, as agile methods popularity basically exploded, studies has shown that the success rate for agile projects preformed higher in as well keeping budget targets, schedule and customer satisfaction [11, 13, 17].

2.3 When does agile work

Pinto [18, p.417] describes the keys to succeed with agile is to have a cross functional, empowered team whose members share accountability for the project. The leadership should focus on support rather than micromanagement or getting too involved in the team members work. Pinto further explains that a successful team has pay attention to technical excellence and reduce risk in the project continuously and rapidly to produce value. To make this possible the team needs to work with early feedback and be willing to adapt, be open and transparent, both towards each other as well as with the customer. Lastly the team needs to trust each other.

Rigby, Sutherland and Takeuchi [19] emphasizes the importance of understanding agile to be able to use it right, as it is often wrongly implemented. Like Pinto, they describe the team as cross-functional, self organising and self managing where they held accountable for their work.

Rigby, Sutherland and Takeuchi explains that, while proven to have great benefits, agile does not work everywhere. For agile to be suitable, there needs to be complex problem solving where the solutions initially are unknown and requirements are unclear or changing. A close customer collaboration is necessary to be able to get updates and feedback from them.

Both Rigby, Sutherland and Takeuchi [19] and Pinto [18, p418] mention that a project where tasks are predictable, the agile approach might lead to over planning and extra costs tied to those. Furthermore they explain that a project with large early mistakes can have a catastrophic impact as they are impossible or overly costly to change. If no mistakes are allowed the agile approach is not suitable. Small mistakes have to be accepted to be able to iterate and is a part of the development progress in the project [19].

The project also has to be able to continuously deliver and to develop in modules which are understandable and of value to the customer.

2.4 Working Agile

The set of values and principles of the agile manifesto lay the foundation of what it means to work agile. However, there seems to be a distinction between being agile and doing agile. Much like an onion there are several layers where the out most layer is visible but the center is the core values. The difference are described as follows. "Doing agile" activities are visible but less impactful while the "Being agile" is less visible with a big impact[3].

This can be illustrated using the agile onion.

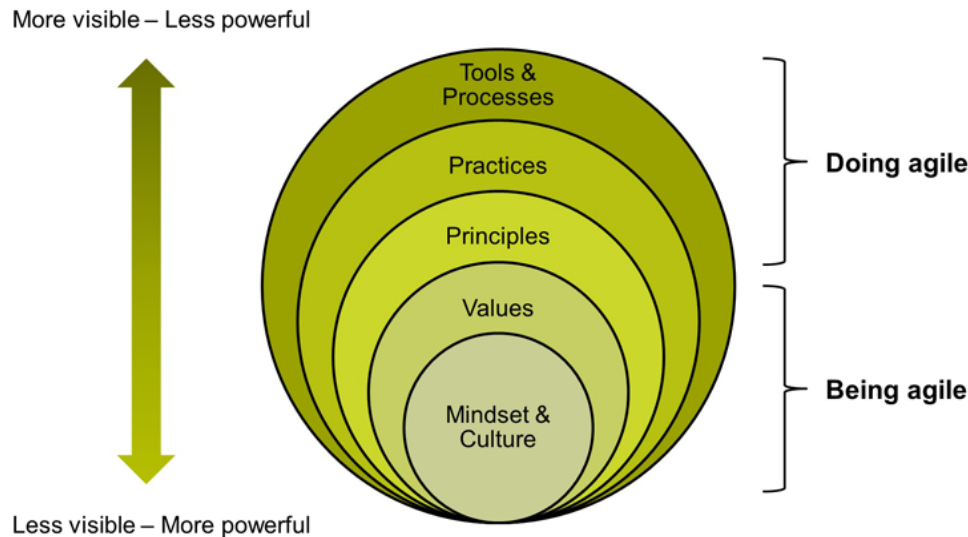


Figure 2.2: The agile onion [20]

Medinilla claims that companies must first understand core values, mindset and principles and then try to find the set of processes, tools, practices that they can adapt to[14]. However, according to Rowell "doing agile" is a good starting point to eventually become agile. As summarized. Doing agile + time = being agile[3].

The principles and values lay the foundation of the agile manifesto and have been discussed in previous chapters. In the following chapters the more practical aspects of agile work will be presented.

2.5 Agile practises

In this section some of the most common agile practises are presented. As many agile practises are tailored to different agile approaches as well as the team that uses them, in reality some of these practises might differ. Here, a generic version is described.

2.5.1 Sprints

A central principles of agile development is the iterative process[17]. The iteration is done during a set period of time which is called a sprint and lasts usually no longer than a month [16, p.89], but can differ between 1-4 weeks[17, p.372]. The goal during this time is to produce and deliver a part of the final product. The reason to use sprints to achieve this is to break down an uncertain project in smaller, and focus on more certain parts. In the beginning there is a lot of uncertainty and the most important thing is to frequently deliver something from the current task list[8].

A central rule during the sprint is the Closed-window rule[16, p.90]. This states that during a sprint the task list does not grow or change. No person can be above this rule. The reason for this is that team members can not focus and complete their tasks if new requirements are constantly being added. This ties in with that customers can not demand changes during the sprints. This can at a first glance look harsh but since the sprints could be as short as a week there are frequent opportunities to include new requests from anyone in the next sprint.

2.5.2 Daily meetings

A core in agile thinking is communication [12] between the team members. To keep the team up to date it is essential to communicate regularly, which is practiced by a short face to face meeting where the team members briefly update everyone with information about their current situation by answering three questions [16].

- What did you do yesterday?
- What will you do today?
- Do you have any obstacles?

This is known as a daily stand-up meeting, as it is held with the team standing up rather than sitting down in a meeting room. The stand-up is supposed to be short, commonly no more than 15 minutes where the topics are strictly kept for each member to answer the three questions[16]. If a discussion takes off, for example by someone having an issue that needs solving, it needs to be solved outside of the stand-up. Rather than a few having a long discussion on how to solve an issue, a time and place for those concerned can be decided to solve it.

Further, by each team member answering these questions they make a commitment to the team each day, as well as answering if they kept the commitment the promised yesterday in the same time as the team gets an idea if the commitment made by the team member is realistic [16]. For many, meetings can feel like a waste of time. They might be correct. The solution to this may not be fewer meetings but shorter meetings[14]. The reasoning behind having a meeting at the beginning of each workday is the principle that team member communication is the biggest reason for project success[16]. The goal of the meeting is not to solve problems or have deep discussions.

2.5.3 Planning

In projects, planning and estimating are central to succeed. It is however very difficult and plans are often wrong. In teams this can lead to two scenarios:

- 1: No planning at all
- 2: Dedicate so much effort into the plans that they are convinced it is correct

In the first case there is no information at all and in the second there is so much information that most of it likely is not accurate. There is also a fine line between what time can be saved while planning and the time spent planning. If planning is so hard and there is a low chance to do it accurately until very late in the project, is there any reason to do it?

According to Mike Cohn the main goal for planning is value. This is found by trying to find the optimal solution for the project in regards to the team, the resources and the schedule. These areas can not be answered at the same time but must be found incrementally[5]. The agile solution to this is the sprint planning. As many other agile practises, there are several versions of this practice [16, p.94], but commonly sprint planning contains the steps described in the next paragraph[6].

Tasks are assembled from customer requirements, commonly called user stories, with a prioritising of their importance to the project. The tasks are then processed one by one, where the team members all get to estimate how long time they think is needed to complete the task. If the estimates differ a lot the team members can motivate their estimates, if needed new estimates can be made again after the discussion, to find an estimate which the team agrees on. This continues until there is enough tasks to fill the sprint.

According to Cohn [6] agile planning creates more accurate plans as they are made by the people with the most knowledge about the tasks. However, as Meyer [16, p.95] points out, he makes no citations to this claim other than referring to customer feedback.

2.5.4 Cross-functional teams

The agile teams differ from traditional group structure. Instead of isolating groups by area of competence the agile teams focus on mixing teams with a wide variation of knowledge to complement each other. The team should be between 5-9 people that together can deliver a part or a whole working product in a couple of weeks[14]. Each team should also be self organizing with the authority and tools needed to deliver their part to the customer. They should also have the chance and the will to support each other about what they should do next. In agile this means they can pick from the task list what is the next needed step of the project[16].

2.5.5 Retrospectives

After each sprint a retrospective is held, and let the team members reflect on what worked well and less well during the sprint [18, p.]. The goal of the retrospective is to identify what the team can improve and adjust to the next sprint, and not to point blame to a certain person. This process should result in a loop that continuously helps the team to learn and improve[16]. The main way to do this is to share good practises and find ways to improve things going wrong. The team is responsible implement their plan using proposed actions adding documentation of what has changed. This is the central tool for continuous improvement[8]. The retrospectives are introspective and primarily for the team and the team leader. Timewise it is done in 45 minutes to 3 hours depending on the length of the sprint[16].

2.6 Building teams using agile practises and tools

One of the original founders of the agile manifesto is Alistair Cockburn[12]. He introduced three stages in agile organization maturity. The three stages are called Shu, Ha and Ri inspired from the Japaneses martial art levels from learning to mastery[9].

Shu is described as obeying where people only learn and apply tools and follow processes.

Ha is to see the core rules and learning to combine them.

Ri is going beyond established rules and decide and customize solutions to adapt to unique situations[16].

During the Shu stage people should learn the agile tools and processes and copy how they are used without changing them. The goal is to build a solid foundation. With this a deeper understanding of the tools and processes can be developed in the future. If there is too much variation and mixing of different tools, practises and mindset there is a high chance to go down the wrong path. The goal is instead to follow a single common route to achieve a communal standard practise with a practical and theoretical benefit[4].

During the Ha stage people should have learned the tools and processes by heart. This gives them the chance reflect on the purpose and meaning of what they have learned and come to realise the deeper understanding of why something is done rather than just repeating it. This gives a chance to reason about the reasons why the tools are used[4].

During the Ri stage people should go beyond imitating using the tools. From this stage they should rise above imitating and instead develop an original way to use them in reality. From adapting them in real practise they have the chance to draw conclusions and adapt the tools and practices to their unique setting[4].

To master being agile, teams and their team members benefit to a high extent from practising widely used and successful tools that have been well established as best practise. Some of these include keeping track of progress and impediments. This was originally done with post-its but some have turned to use digital tools to increase ability to overview and track progress. With more experience the team members get their chance to customize their practises to fit their unique working-conditions. [19]

The core of being agile is the mindset and culture. Alistair Cockburn, one of the founders of the Agile manifesto state that using agile tools is a good the foundation to start to build and become an agile team in mindset and culture[3]. To get a quick overview over what is considered agile, less agile, doing agile and being agile the Agile pyramid is presented in figure 2.3.

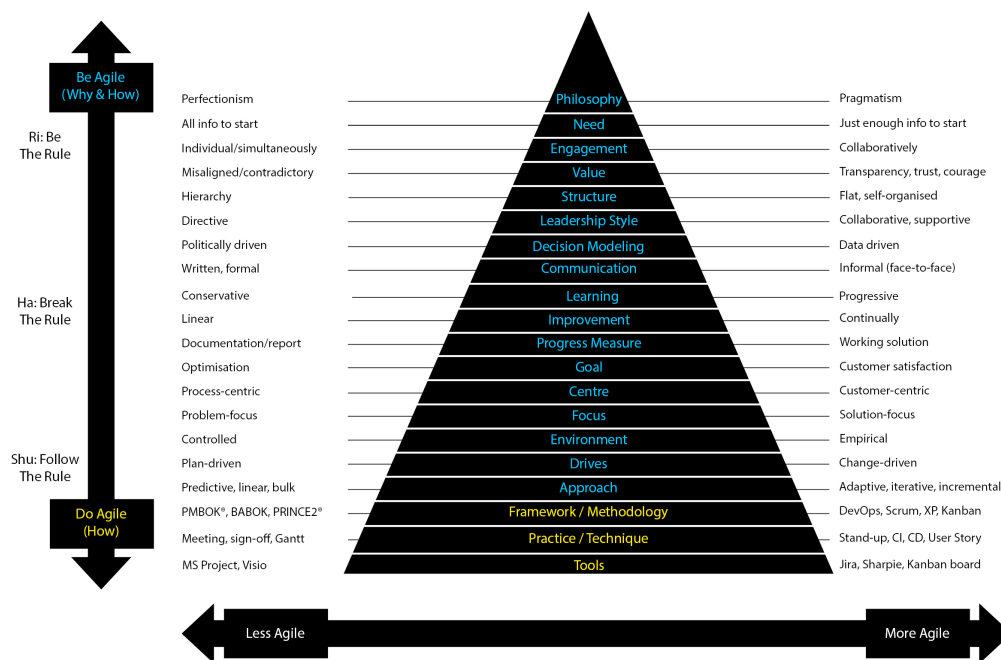


Figure 2.3: Agile-Pyramid-Diagram [9]

3

Method

In this chapter the method is presented. The beginning introduces the initial approach and motivation why deeper interviews performed at one company was chosen as a research method. The method-chapter then continues with a description of the interview study and an overview of the interview process. Ethical and sustainable aspects considered in the study are also presented.

To find out how agile practises could be used in digital visual production, one team at one company was studied. The result could become biased when only studying one company as only one case is studied. A risk is that the results might be unilateral as it provides a narrower perspective since it is not compared to other companies, teams or cases working under similar conditions. There is however also well-founded reasons to focus on only one company in this study. Visual digital production is a complex field with little available research in terms of agile methodology. Therefore comparing might not be applicable for this case. To understand the challenges and conditions in one company, a thorough understanding of the company is necessary. The reason for this is that it is a new evolving field of work that is not yet fully explored. To get a foundation to stand on for further research a good start is to begin with deeper focus on one company so this report can be used to compare companies in digital visual production in future research. The results will also be an input for future development of the company's practises.

Digital visual production seems to share several challenges with software development. Agile practises, which has proven beneficial in software development, could therefore be an approach to address those challenges within digital visual production. By defining possible advantages and disadvantages of the practices researched, a suiting application of each practise can be suggested.

As there is a great variety of agile practices, practices concerning customer relations were excluded to limit the scope to internal practices. Instead, internal conditions were focused on as a fundamental need to use agile principles. In the scope of the study five agile practices were selected to be evaluated. The practices were chosen from theory as they are the ones we interpreted as most commonly used as well as the most beneficial to an organisation new to agile practices. Firstly sprints was chosen, as iterative work is a core in agile methods. Further we also chose to look in to Daily stand-ups and Retrospectives in terms of recurring meetings as a means of communication. Agile planning was chosen as a means of organisation with a sub category of process visualising. Lastly cross-functionality was chosen as a practice connected to team dynamics and work flow.

For the study, pre-existing documentation would have been of interest to examine. However, the company have very little documentation. The work could be observed but that would require detailed knowledge from the observers which did not possess. Therefore the information needed to answer if agile practises would be a good idea to use relied on the habits and opinions of the team members. Because of this interviews were chosen to figure out how agile practises could affect the team's work.

The theory regarding where agile practises are suitable have several criteria that make companies more or less compatible. To be able to see if the company fit into these criteria, data from various areas are needed. The data need to be in depth and also properly explain the teams current situation, daily work, common problems and solutions to what they face. It also needs to reflect what their opinions are in regard to current practises and possible future agile practises. The data should aim to give a nuanced image with both advantages and drawbacks that could come with agile practises.

To answer the research questions a team of core team members were chosen for interviews. The goal was to collect information from the team members regarding their current practises. Interviews were chosen for several reasons. The aim was to gather qualitative data and being able to deduce characteristics of the working conditions from experiences and opinions of the team members. A survey to collect quantitative data could have given a more reliable result of the opinion of the team considering their work practices, but it would not answer the reasons behind their opinions. As this was the data we wanted to collect, we saw surveys as an insufficient way to collect answers. The survey would have either have to be very long with a lot of free text answers, with the risk of respondents not completing the survey or not giving full answers with limited possibility to ask follow up questions. One benefit of using a survey would however have been the possibility to have an completely anonymous method of data collection. The benefits of this was however seen as lesser than the importance of being able to collect qualitative data with the possibility to ask related questions.

3.1 Interview study

Qualitative research consists of words and descriptions with a variation of details and views[10, p.30]. All interviews has been conducted as to gather qualitative data. The interviews were held with seven team members who have been questioned regarding their roles, their work and their opinions regarding agile practises and conditions to implement agile practises.

The data in the study have been be collected through interviews with the team managers and selected team members. Interviews with team members within the same project group but with different responsibilities have been conducted. Using the data collected suitable agile practises and their advantages and disadvantages have been identified.

3.1.1 Interview description

The interview study is composed of seven interviews with the aim to collect data from team members about their current work processes and to identify problems. The goal of this is to get input to help evaluate the agile practises. The interviews have been conducted within one team at one company. Team members have different roles and responsibilities but work together towards the same customer on several projects.

To be able to answer the research questions regarding the advantages and disadvantages of agile practises the team along with their conditions have been compared and analysed to generic agile practises and their theoretical features. The interviews was conducted by asking questions related to the issues addressed by the five studied agile practices as well as general issues about the conditions of the work processes.

The reason a qualitative interview method was chosen is to let the team members explore and re-construct their experiences using open ended questions [21]. The aim with this approach is to get qualitative answers rather than quantitative answers. The reasoning behind this is to gain a deep understanding of the issue rather than to have as a goal to represent the entire population[10]. The empirical results from the team member interviews are the main source of data to be collected and used to answer the research questions.

3.1.2 Selection

Snowball sampling has been used to find people with different roles with a lot of experience to get a broad image of areas that the team members work with. The goal of this is to learn from experienced team members and in depth explore the teams opinions regarding the use of agile practises [10].

A snowball sample is when new respondents are selected by recommendation from previous respondents [23]. To chose the respondents a snowball sample was made by recommendation from the project

manager and the production manager. Other than the two managers, five other members were selected who were all senior team members with different areas of expertise which spread over the whole process chain. The motivation for this was that they were most the experienced within their areas of work and had a deep insight and understanding of processes and tasks. With that said the respondents have a variation of time working for the company and different levels of responsibility, which can give a different view on their work.

Interviews have been held with the following team members:

| | |
|--------------|---|
| Respondent 1 | Project Manager |
| Respondent 2 | Production Manager |
| Respondent 3 | Creative Director |
| Respondent 4 | Creative expert in interior, assisting the CD |
| Respondent 5 | Render Scenes and compositing |
| Respondent 6 | Look Developer |
| Respondent 7 | Expert in compositing |

Table 3.1

3.1.3 Interview method

The interviews have been held as semi-structured, which are conducted with a prepared set of questions, but with the possibility to rephrase, ask follow up questions or add new questions depending on what is brought up [10, p. 90]. A script of questions was used which has been asked to all respondents, which can be found in the appendix. Additional follow up questions that deviated from the prepared questionnaire, has been asked when needed. The questions are open ended and the respondents can follow up freely and expand on related topics. After the interview the respondents have had the opportunity to comment or make additions to what has been said during the interview.

The goal of this interview method was to get comparable results between respondents and to also understand the motivation for their experience. The method also been used to verify trends and opinions of team members[1].

3.1.4 Interviews

The aim of the interviews is to gain an understanding of the current working conditions at the company and the characteristics of the existing production and processes. To help answering the research questions the prepared questions were constructed to gain an understanding of the challenges that the team as an organisation and a group face in correlation to each task in their production. The questions were divided into process oriented questions, organisational questions regarding each of the five studied agile principles in relation to the working process as well as the organisation. There were also general questions concerning both the processes as well as the organisation.

In total there are 7 team members, of which two have managerial positions, who have been interviewed. The individual interviews scheduled duration was one hour. However, they took between 45 minutes and 2 hours, where the shortest interview was with one of the team members and the longest one with one of the managers. The interviews had the same base set of prepared questions with some additional questions for the project manager and production manager. As they were conducted as semi-structured interviews, some answers led to follow up questions and there was also some variety in the extent of the answers, which lead to the big difference in duration between the interviews. The respondents are what is described as, by the managers, the "core team" of the division. The respondents have all worked at the digital production company for several years and have a more senior position than the average team member. They have a good understanding of the division's work, tasks and know how

these have developed over time. Most of them have specialized knowledge about one or several of the steps in the process, which was the main reason to chose them as respondents for the interviews. All interviews were made with the respondents in person, except one which was made over telephone.

The interview-questions and language spoken during the interview was Swedish, since all respondents and conductors of the interview are native Swedish speakers it was determined that this would ease communication and understanding of both questions and answers. During the interview one of the conductors was mainly responsible to ask the questions and the other responsible to write down what was being said.

3.2 Analysis

The empirical data gained from the interview answers has been used to analyse the teams current practises and organisation in regard of the conditions of existing and new agile practises. If a condition, problem or challenge is a recurring mentioned topic from the team members, it is seen as more relevant. However all data significant to the result have been extracted.

The interviews were first shortly reviewed together by the interviewers as a short summary after each interview. The data from the interviews were then thoroughly examined individually by the interviewers. Answers from each interview relevant for one or several of the five agile practices or affecting the general conditions was extracted and categorised. The reason to examine the data individually was to be open for the interviewers individual interpretations of the data, to be able to compare those creating a two-step analysis, one individual and one collective. The individual extractions were then compared and analysed together to make an analysis of the result.

The extraction from the interviews have been analysed based on agile theory and compared to identify patterns and consistency between them to identify challenges and issues which could be handled with the generic agile practices studied.

The current characteristics of the production has been analysed to evaluate individual and team opinions and conditions. The conditions has been compared to generic explanations from theory to identify similar challenges where agile practises could be suitable.

3.3 Reliability and validity

The reliability and validity is affected by the methods chosen for the study. The reliability is the result of the data-collection and analysing in regard to variation. The validity is that what is actually being measured is the subject being researched[10]. To support the reliability, the aim is to be systematic during data collection and describe how the study has been done. This has been strengthened by presenting data to interviewees to make sure the are correctly interpreted.

Validity is achieved through connecting the investigated area with what is actually being researched. To strengthen the validity there has been seven interviews of team members with a high level of competence and experience.

The study is made in one team, where the team members work on the same projects and towards the same customer, hence therefore describing the same phenomena from their experiences, the seven interviews have given a nuanced picture.

It was chosen to to use a semi-structured interview format. The reasoning behind this is to have a cohesive response from the interview responses regarding questions to be able to compare them between interviewees. It is also beneficial in the sense of connecting to the collected empiricism that the questions are based upon. The format also give them the chance to share their experience from

adding follow up questions that arise during interviews[21].

3.4 Discussion of ethical and sustainable aspects

To do a thesis project there are several aspects to keep in mind. The goal is to produce results that benefit our researched area while without disregarding the integrity and autonomy of the people participating in the study[2].

There are four main ethical principles to consider when doing business research. If there is harm to the participants, receiving consent of the participants, invasion of their privacy and lastly of there is deception during the study[2]. These aspects will be a foundation to involve participants and give them an understanding of what the goals of the study are. The reason for this is to make sure that participants feel comfortable and that their boundaries are respected during the interview study. At the end of the interview they have also had a chance to add additional information to the asked questions or related things they regard as relevant. This will reduce the chance of misunderstandings and increase the collected data[2].

It was decided that we should not name the interviewees in the results. The reason for this was to protect the identities of possible critical opinions that could have negative repercussions for the team members. However since the team is so small there is a risk of identifying team members from their role. Because of this extra thought has been given to what is presented in rapport in order to protect the team members.

This ethical approach should not only be used during the interview study but for the whole duration of the thesis.

4

Rapid Images

In this chapter the company where the study is made is presented. This information was collected from the early interviews and is a part of the results. The aim of this chapter is to share insight in how both the company and team operates. This assists with a context to help understand the current situation and the results presented in later chapters.

4.1 About Rapid Images

Rapid Images is a tech company providing digital 3D solutions. They work with a variety of customers in different industries where they for example create both still and motion pictures for marketing purposes, augmented reality and digital twin. The interview study will be made within one team which works exclusively with one customer, providing pictures for marketing purposes. They create picture components which all have several different features. Different components are then combined into complete pictures leading to a great variety of combinations of components, creating a massive amount of total possible pictures.

4.1.1 The studied division

The team have developed their production from sequential production model where the completion of the previous step leads to proceed to the next step in the process, which can be seen in figure 4.1.

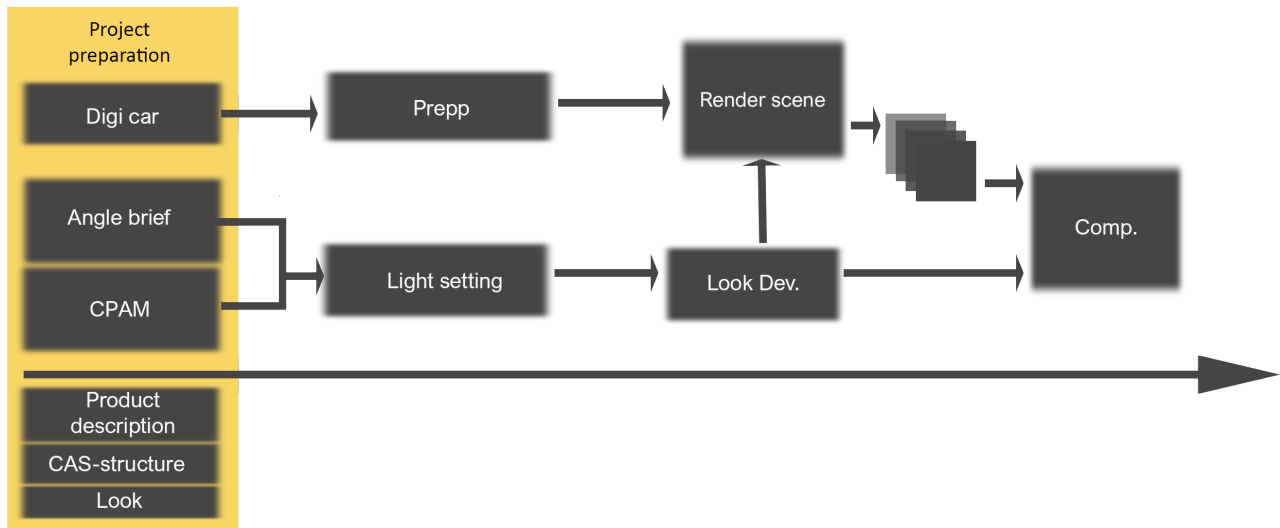


Figure 4.1: Process chart

At the start of a project the requirements for the pictures are specified in the project preparation phase, with example pictures and descriptions of the wanted over all look, lighting of the pictures as well as the combinations of the picture components. After new pictures are produced the customer is presented to produced pictures at a review meeting to approve or recommit them to be edited. This

is done for both the individual components of the picture as well as for the complete picture featuring a package of components.

The first process steps which involves development of the technical structure and translation of the customer requirements is usually time consuming, and can be viewed upon as a preparatory task done once during each project. The later process steps are part of a repeated process, where each step is repeated for each of the components as well as their different features.

A lot of work is usually put in before the first pictures are presented to the customer. The team studied produce pictures with a high number of components to be combined in multiple ways, which leads to very high a total number of possible combinations, leading to a large total amount of pictures. Therefore the pictures are rendered through a script and then the pictures are corrected through retouch. The goal is to produce pictures that look realistic and accurate both in detail and as a part of the surrounding environment depending on light and reflections. The customer also values keeping their original look as a part of their branding in final the pictures.

Recently execution and responsibility for some tasks have been divided differently between the customer and the division as the customer has had a reorganisations. This has brought new challenges in the teams processes. For example there has been changes in the software used to create the pictures as well as the source material from the customer. The need for customer collaboration and communication has increased.

These challenges have been an issue, and therefore alternative ways of working have been considered and a specific interest is to introduce agile practises to easier to adapt to uncertainty and changed requirements. Adaptions of some agile practises have already been implemented. But the division, their processes and culture can not be described as agile organisation.

There are commonly several projects in progress with various extent, as one project might involve creating new pictures for several new models while another task might involve an update of a previous project. As an addition to this the team also work on support errands from old projects. A large project can last several months while a support errands might only last a week or even a day. During a project, details of the pictures are continuously approved at customer review meetings, and at the end of the project the complete collection of pictures are approved.

4.1.2 Team layout

The division is today organised as one team divided in dynamic sub teams that works on different projects, and consists of about 15 people. Most team members have a main area of competence in one of the process steps, such as compilation or preparation, but are able to assist other processes. At each process step there is 1-2 who are specialised in that task, and primarily work on that process step. At the moment the team has 2 members that knows how to preform all the steps and could produce an entire project.

The team has some key roles of responsibility.

- Project Manager, who is responsible for the team as a whole, as well as the relationship with the customer
- Production Manager, responsible to lead the production and the technical data for the picture and components.
- Creative Director, responsible for the creative look of the pictures. The team has one person who formally has this role, but one other who has an informal creative responsibility for certain areas of expertise.

All team members have a responsibility to understand the customer requirements. Some team members also have an more or less expressed responsibility for certain processes or part of processes due to specialized skills or experience.

4.1.3 Current practices

Some practices inspired from agile practices, or very similar to these, have been tried by the team. They are adaptations of what are described as agile practices in chapter 2. Current practices and how they are used are presented below.

Daily stand-up meetings

The team have a morning meeting every day at 9.00 am with the whole team assembling at the project board. The project manager then asks the team if there is anyone who doesn't know what they are going to do if anyone has any obstacles or information which is important for the team. If anyone says yes to any of those two first questions, the issue is not solved in the meeting, but the persons needed to solve it are assigned to do so after the meeting. After the stand-up the team members can split into sub teams according to their current project. If this happens they can check in on the sub teams progress of their specific project. However if they want or need to do this is up to each sub team to decide. The meetings have previously been conducted as a generic daily stand-up.

Planning board

To monitor progress of ongoing projects a planning board created on a whiteboard, hanging on the wall next to the teams working-space has been used. The board lists all team members and has a box to fill in what project they are working on, as well as a column for each project where tasks are put up on post-it notes. If something is completed, it is supposed to be checked off on the post-it.

There are also plans which are created and managed by the production manager. These are made in an spreadsheet, to keep track of the projects. This file is used primarily by the production manager. A digital planning board in Microsoft Planner has also been created, but the use has not been implemented.

Retrospectives

Each Friday the team has recently started to have weekly team evaluation meeting in which the team look back and reflect on the previous week. This has been done by dividing into groups and putting happy or sad faces for things that have been worked well and less well, and discussing these. This feedback is supposed to be used to find improvements of the teams over all working conditions.

5

Result

In this chapter the result from the interviews and observations made in the interview study is presented.

5.1 Interviews

Many of the interviews has brought up the same issues as well as well functioning tasks and processes. There is however, some individual opinions, which is mainly based on the respondents experience due to their specific task, that are of significance for the result. Further, there are also opinions that contradict each other, and some where the team has different points of view. The result from interviews are divided into the different agile practises connected to them, where a set of themes under the following topics are presented.

5.1.1 Conditions affecting the process and organisation

From the interviews several topics which affect the general conditions of the work were identified. These conditions are a not directly affecting the agile practices in this study, but are a precursor condition for several of the studied practices. In the table below the conditions are listed.

| |
|---|
| It is important to pay attention and be coherent with the customer to understand requirements |
| The customer requirements are subject to change during the project |
| There is frequent collaboration and communication with the customer |
| Obstacles will occur but have different reasons and are difficult to foresee and avoid |

Table 5.1

The respondents describe that the team works in a creative process where the requirements are difficult to define in a precise way. The goal is commonly to develop a picture with an overall look and feeling, which has to be described by by subjective terms that has to be interpreted by firstly the creative director, and secondly by the entire team. The requirements are described in both exact technical terms, by examples, as well as imprecise, interpretive terms where communication and experience is necessary.

| | |
|----|---|
| R3 | <i>It can be sample images or something completely outside the industry, may be some fashion or color and shape or colour maps. It can be described with persons or anything. Who's supposed to buy and how/what to attract. They make briefs and sometimes you can fill in that you interpreted correctly.</i> |
|----|---|

R1 | *Sometimes we get something to replicate and then it is about re-creating. Especially when we can't use the same tool. It can be about Nuke or Photoshop. This can be a basis for light setting. It is very important that we get input for the project and start to do some basic lighting and try to pull it as far as possible before we move on. Otherwise, it will be a snowball effect where all the struggles increases exponentially. That's why we want to get done 90 percent in lighting The more we do in lighting, the less we need to do later.*

R1 | *When it comes to the creative, we have been chasing material. Then we had meetings between us and [concerned customer divisions]. How should they [the pictures] feel. Dark, bright, murky, fresh. There were briefs from different agencies and also this photo angle brief but now we get a more complete package that comes from design. Then we get the technical bit and what is included in a car we get in a system called CPAM where we work with the IT side that produces what is to be produced. At some point you add and remove things. Sometimes you add color.*

All respondents describes that errors are created in their own production as well as from the source material from the customer. This is commonly identified at a late stage of the process chain during compilation and sometimes even after delivery. This leads to work having to be corrected by backtracking to earlier process steps. A lot of work has already been made, but to fix the problem, it's common to have to completely restart the process to be able to render the scene with the correct data. The amount of work needed to correct this varies depending on what needs to be changed. The earlier in the process flow a task has to be redone the more complicated it is to change, as all steps after also has to be redone which increases work exponentially.

R2 | *When it becomes a problem, we often solve it with hard work and often nothing but solve it on the spot. There is no system but the problems are different all the time What they sent first may no longer apply and then we have to start over a little from the beginning. When we get updates we may get new colors or new chairs with colors and materials where we need to create the materials and shaders if we haven't had it before. It varies from project to project ... It may be that one week before we publish the pictures, they realize that we have to change how some stitches look because of a cost reduction so that a stitch looks different. Then we need to reverse the whole process. It is very difficult to predict*

R1 | *Incorrect input is a problem, can't say any percent. We get a digital car from [the customer] and it happens quite often that it is wrong. Depending on when it is discovered, it can become a problem. If it is late, the problem becomes bigger. Especially if some geometry is wrong and is included in many models*

R6 | *What often happens is that it is not good, what has been rendered, and there has been errors in the script and all layers are not included. In this step it takes some time too, so needed that I am in the process of what it should look like. So before you can say that the renderings are finished from the 3D, it can take a long time before you know that it will not change anymore. I think that step is very irritating because the project managers do not know how it works. They don't know what's going on in the script*

R4 | *It is a recurring problem that someone says that it is finished it turns out that it is not*

The respondents are open to changes and puts importance and value in adapting to changed customer requirements with short notice, as they want to create what the customer wants. However, late changes

on something a team member has completed and feel is good might be upsetting. Most respondents agree that it is a challenge to understand and adapt to customer requirements, as those are often subject to change as well as it being common that the result differs from the expectations due to technical conditions resulting in differences in the outcome.

R3 *Well you are always on your toes and that is a prerequisite. Sometimes it goes in line with project after project but you pay attention. If they inquire it is a tricky part. Depends on how the deal is agreed. There are fuzzy areas and you want to help and stretch extra to make them happy, but there are financial limits to what you can do. After all, it is not so popular to make changes to what has already been decided. Especially if something has been nailed by a person and then you have to change it*

R6 *Then I make sure I make the change that the customer wants ... I see a value in [doing] exactly what the customer wants ... Last week we were going to have a review with the customer and someone else at work had done a job that was completed and printed and the CD had not seen what it looked like...So I sat remote and was called to solve it. Then I'm ready to sit and work all night and do everything that usually takes 3-4 days, so I sat all night to be ready for meeting 10 in the morning. That's how far I am ready to go, to do such things, to make the customer happy, it was a bit like saving this or getting a dissatisfied customer.*

Much of rework and issues within the production depends on a lack of communication and understanding between the division and the customer.

R5 *It is probably communication and sometimes their boss has said something and then he changes his mind just like "clicks his fingers" and calls an hour later and has changed his mind Technical: every day there is a problem that needs to be solved, it might be the wrong material or the renderings take a long time to get out and sometimes we are locked in It is very important that we are clear with the communication, so we have to address it if it affects the group and is critical. It is super important and there may be a problem that someone sometimes misses it. You sit in your own bubble and work on your own task. It is more common than it should be. There we have Slack now which is really good as a communication tool. Then you can paste code or image and it is smooth.*

R2 *We do not understand their process and they do not understand ours. We have tried to see and understand each other's needs, but it is very difficult. It has been a big problem to understand each other.*

The respondents also explains that it is almost always possible to make the changes, but something that seems like a small change too the customer it might take a lot of time and therefore leads to a need to review the contract of the project. There is also a balance needed since a small barely visible change can take hundreds of hours to render.

R4 *So personally, I can change anything I have done but it is a matter of time and time is money. There may be a certain disconnect between what we say and expectations with us and the customer, it may not be as good communication and consensus as to what should always be delivered in the end.*

The problems occurring are hard to foresee, and is one reason for similar tasks varying in time consumption.

| | |
|----|---|
| R4 | <i>Yes I would probably say that, it feels like it is quite common, the task can have the same nature, this we have done 100 times, but it is difficult to predict what pitfalls are coming, which can depend on anything, that the project manager has not communicated a change that is not perceived, a lot [of communication is] orally, there is still no good, clear project plan or flow chart that shows where we are and how far we have come. So it is difficult to keep track of, it is assumed that the same thing takes the same time but turns out that something is missing and must be ordered from those who do the digicar and then something suddenly takes a day longer.</i> |
| R7 | <i>It could be if there are new parts in the rendering and that I don't know what it should look like. Then it may be that you think it should be something that has changed material and then you have worked on a material that should not be used. They may not know for themselves what material to use or they will change after a while. There can also be a problem with renderings of the digicar and things that get the wrong code or render wrongly</i> |
| R1 | <i>There is a bit of the product awareness that there are many who enter the industry who has an artistic vein and we need more technical structure. You should know what a car is, but you don't need to be interested cars [as in function and technology]. To address this we would need ways to find some way to automate so that we have control over the structure so you don't keep everything in mind We are a bit poor at quality control so if you say that one step is to take out it from Maya and then take it out in Nuke and Comp. It may be that we do not give people enough time. If you get wrong things in Comp, the problem grows and becomes bigger in the end. There is potential there</i> |
| R1 | <i>It is extremely important that the creative process can not be constantly changed. If we find something that changes, you can change it, if something needs to be changed, it can cost. That's why we need people from [the paying customer division] in these processes.</i> |

Respondents also say that a more automated workflow with clear communication between stages could erase repetitive tasks and speed up tasks, and that their process always has room as well as need for development.

| | |
|----|--|
| R3 | <i>You underestimate how often the technical fails. Both hardware and resources would need to be strengthened.</i> |
|----|--|

5.1.2 Sprints

These are the conditions discovered concerning sprints.

| |
|---|
| The team does not work in an iterative process |
| Reviews set deadlines for when a task needs to be completed |
| It is common to have to take shortcuts to produce a result to review meetings |

Table 5.2

Sprints are not used today and the team does not work on any defined intervals, as the time between

reviews varies. There are usually several process steps in progress simultaneously. Commonly targets are set up of when a task should be finished, but are usually compromised as issues occur.

| | |
|----|---|
| R2 | <i>Gates are set up but they are never held, it may be that the render farm crashed or that something else stops so that the plans cannot be kept. If the smallest thing goes wrong, it can stop the whole process.</i> |
|----|---|

This leads to delays where shortcuts are taken to deliver something for reviews, which are not always value adding for the process.

| | |
|----|---|
| R7 | <i>Now we spend more time getting pictures for review meetings. Then we chase build [a picture of] a car where we put the comp together for an assembled car and print for the review. When we do the whole, we do each part individually and then it gets better. They used to come out and look when we were basically ready while now it's review before we even [done]. Spend time on a demo where we can use some stuff but it will not be exactly the same as the finished product.</i> |
|----|---|

| | |
|----|--|
| R6 | <i>To have time to make review pictures when we have days to show [the pictures] and they look [review them]. Because it is complex scripts, but we have to make it to the review, we hurry past and do it manually. So we skip it and just get it fixed, but it would have been better to make the script completely complete from the beginning.</i> |
|----|--|

5.1.3 Cross-functionality

These are the conditions discovered concerning cross-functionality.

| |
|---|
| The tasks are complex and require experience and knowledge to complete |
| Excellence is needed to reach a higher quality and decrease time consumption |
| Cross functionality is needed to limit obstruction by team members with a specific competence being unavailable in a process step |
| Becoming independent and excellent in a process steps is time consuming and requires much training and experience |

Table 5.3

Respondents as well as the managers describes the general competence of team members as high, and that it has increased over the last year by members learning a wider area of process tasks.

| | |
|----|--|
| R1 | <i>It's a competent team and we have, in our teams, a very good product knowledge which is very broad but in the same time high expertise. More [team members] could learn things deeper...In the team, during the last year, every person has become broader in their knowledge where we previously were narrower</i> |
|----|--|

| | |
|----|--|
| R4 | <i>"We have broadened the area of competence in the latest, many who knows a lot more about different areas, previously it was I and someone more who has most knowledge about different interiors and what works and why, but that knowledge is much broader now"</i> |
|----|--|

The opinions about cross-functionality compared to excellence differs between the respondents. The project manager lifts the value in having a cross-functional team members that could take on any of

the process steps, provide support anywhere in a project when the workload increases in a specific process step and would be able to deliver an entire project by them self if needed. However many of the respondents lifts the value in having team members specialized in a specific process step as it increases quality and reduces the time consumption to complete the task, as well as the rework. Currently there is only two of the team members that have the competence to complete an entire project, while most others know some of the process steps but not all. A few, mainly the most junior staff, are only familiar with their specific process step. The work is divided so that more experienced team members do the more critical steps, while less experienced team members might change tasks more often as a way of training.

| | |
|----|---|
| R3 | <i>More experienced works in the look dev. phase, the persons we trust. Some resources who are moved around between teams might hop around. It's a introduction to becoming independent</i> |
| R1 | <i>My vision is that everyone would know everything. We have a few who can work already in the first step and take it on to the "Comp" stage and then deliver and work with support, that's what you could call the core team and they are super important and could deliver an entire project, while those who are super good at lighting can't do Comp, they know a little but they aren't experts. Those who are experts [in their area] who we praise, but they can not deliver an entire project...Would wish that people [team members] were broader, sometimes it [the process] can get held up if a competence is held only by 2 persons.</i> |
| R2 | <i>It's a huge learning curve. If you're experienced it takes 100 hours but if you're inexperienced it takes 500-1000 hours....Some are specialists in their area. We have one comp-specialist who is an expert and some generalists who can do everything. Some are experts in lightning. We're trying to work so that everyone has a broad knowledge.</i> |
| R3 | <i>"The right person on the right spot can make a massive difference. If the person assigning all parts aren't updated on their contents it could double the time of that process. It depends on that persons experience"</i> |

Another aspect three respondents bring up is the need of experience to be able to interpret the customer requirements. One of the respondents describes his ability to understand what the customer wants is a combination of experience of working with the customer and with the production for a long time. The time consumption of a task also varies a lot depending on the experience and level of competence of the person performing it.

| | |
|----|---|
| R4 | <i>"When we have done a whole project from scratch it is a lot more based on our own merits and what we know works. So its a lot of the own experience when we take it on and starts to put down what it is that's supposed to be produced"</i> |
|----|---|

5.1.4 Communication and team meetings

These are the conditions discovered concerning communication and meetings.

| |
|--|
| The team has an open communication climate where they can ask questions and support each other |
| Face to face communication is preferred, but also Slack is appreciated |

Table 5.4

The team's communication today is by the team members described as good, where almost all respondents lifted that communication within the team as something that works well.

R7 | *"We usually talk openly if a problem occurs or finds something that works...some has very good knowledge about certain areas and so you ask them about that..."*

All the respondents agree that face to face communication is the best way to interact with each other. They all also appreciate and use Slack, which is a messaging app, to communicate when a face to face communication is not an option and as a way to share information within the team outside of meetings.

R1 | *"A year and a half ago, when I first started, the office was really quiet and I was impressed by how disciplined and focused everyone worked, until I realised that nobody was communicating..."*

Discussions and communication climate between team members is perceived as open and supportive, where they feel that they can ask questions, if something is requested between team members they help and supply what is needed.

R7 | *"The collaboration between the process steps [works well]. If i see that something doesn't look right it's just to send it back to get it solved. You get what you ask for"*

R5 | *The group feels good at least now. We have good moral and they are very flexible and we have split up pretty good now.*

5.1.5 Daily stand-ups

These are the conditions discovered concerning daily stand-ups.

| |
|--|
| The meetings are highly unappreciated when taking too long |
| The meetings are not unappreciated when held short but are perceived as not necessary |
| Much of information shared on the meetings is often not relevant for most of the team |

Table 5.5

A morning meeting is held every day, which is described a daily routine. The routines of how the meeting is held has developed over time, to find a routine suitable for the team.

R1 | *We have gone from being the entire team to first the entire team and then break into sub-groups...If someone works on a [specific item] that group has their own check ins. For some it works really well while it doesn't for others. It shows in the progression and who knows whats going on.*

Three of the respondents agrees that the morning meeting used to often take too long as the team is big. This makes much of what is said irrelevant for many team members, as only a few works on the same project and discussions would drift away from topic into problems solving, which drags out the time of the meeting. The meetings used to take longer before but works better now, as they are kept shorter and have gotten better at keeping to the topic.

R5 | *I tried to develop it pretty much to keeping it short and if the [project manager] says that they're stuck that is what's important to bring up. If someone has a solution which helps everyone. It's possible to make it even more efficient, sometimes you drift away [in the discussion] on an issue and two has a conversation and everyone else just twiddle their thumbs. Then you have to say so. It usually works well.*

R4 | *For a while we had meetings every day with the entire team which was a bloody waste of time, before this [COVID-19] hit we run a short meeting with the entire team if you had any issues with something specific and then you solve it afterwards and split up in work groups depending on what project you worked in and had a more thorough meeting where you divide [tasks] and say what you work with during the day...It is difficult to run a good meeting, it's rare to feel that is was a good meeting, it's a lot irrelevant and people who drift of and talks about something that only affects them or irrelevant stuff that doesn't has to do with any project*

R6 | *We were 18 people so it took a good while. Now the project leader brings up if something has happened and asks if everyone knows what they're doing and instead it goes like if someone doesn't knows what they're doing it's brought up... Within the groups, it becomes easier to bring it up with the projects. It changes a lot but you get in touch with the CD or when the production manager thinks it's time..*

It is also mentioned that the meetings have ceased as team members has started working remote due to COVID-19. Some of the sub teams had check-in's on Slack as a replacement to the morning meetings.

R2 | *We haven't run any stand-ups and now we just do it in the project groups and talks in groups and Slack when we feel the need for it. There is "Slacks" [messages] every second minute or so"*

A reoccurring opinion is that smaller groups, preferably the sub teams, during morning meetings are more relevant as they only get information that concerns their own work and as well as having shorter meetings. Other respondents, who were not the ones most sceptic to the morning meetings, lifted that the morning meetings are a good forum to bring up issues early in the day to be able to get help to resolve them as well as the opportunity to see everyone in person. The meeting also provides a good forum to share news or general information and serves as a progress check for managers.

R7 | *Don't think stand-ups are bad but I think we could have solve it by talking. A good thing is to be able to bring up issues early in the day, so you don't keep it to yourself too long without getting anywhere*

R3 | *If I'm gonna be honest there is plenty who doesn't want to hear all of this and when it and when it is pretend and we don't want to pretend. You could take a heads up in smaller divisions of the team, that is more reasonable...It's however fun to see everyone's faces, we have gotten criticism that we keep to our self, especially before. like we were a company within the company, it has opened up more*

5.1.6 Retrospectives

These are the conditions discovered concerning retrospectives.

| |
|--|
| There is a request for clearer action and follow-up from the meetings |
| The time set for the meetings is not appreciated |
| It is appreciated to have a forum to lift issues and develop the team's work |

Table 5.6

Weekly evaluation meetings have been implemented recently and are held each Friday afternoon. They are evaluations meetings for the team to be able to reflect on the week that has passed and as a forum to express issues and areas of success.

- | | |
|----|---|
| R1 | <i>We started with retrospectives before Christmas and talks about such things [changes/improvements]. We make it simple. You come in to the room, and say how the week has been. put a happy and a sad face [on a topic on the whiteboard] and then everyone gets to talk about what they think. It's should be implementable. Then things like "the communications is good" comes up, and that we should talk to each other, and that goes for everyone</i> |
| R6 | <i>When it's made fast and and simple, it's good that it's fast. It's not about having a meeting for 3 hours, we do it in 10-15 minutes and someone gets assigned, it's like the stand-ups, if it's short and if it results in something that's great.</i> |

The end of the week is according to respondents, often stressful with a lot of work to finish before the weekend which result in members skipping the meetings. Instead they have the option to get a summary by email. Respondents express that the timing is not optimal on Fridays and that a evaluation instead could be after a whole completed project or just less often than every week.

- | | |
|----|---|
| R3 | <i>It feels like the timing isn't great, you accelerate things and want to prepare for the weekend to finish the week. It's stressful with [limited] time and then it gets slightly childish i feel. Maybe some who thinks that or if I say that to protect myself...Maybe you can review your own list of what had gone good. it doesn't feel like its gives anything</i> |
| R7 | <i>The benefit varies from week to week. Sometimes you just go there without getting anything from it but only because you don't get anything every time it might still be worth doing. If you have deadlines you might skip that week, then you are too busy and then you get a summary on email. But it's mostly good, nice to be able to say negative things to get rid of them so it becomes something positive</i> |

There are two respondents who perceives the retrospectives as silly, while still appreciating it from other points of view.

- | | |
|----|---|
| R4 | <i>Well, i don't know but a little bit silly in my opinion, the thought is good, but it ends up with bits and pieces, the things which are good and bad that you discuss in groups and put into two columns on the white board, it doesn't feel needed each Friday, that's pretty often, it's hard to see the fruit of it. But most dares to say what they think and feel which I thinks is nice.</i> |
|----|---|

Four respondents agree that it is difficult to see real action from the subjects discussed during the weekly evaluation meeting. Sometimes good questions arise and that can result in improvements, however many of the respondents feel that quite often does not result in any action.

- R5 | *We haven't taken any action on what we have come up with on those Fridays. We should do that, it becomes a matter of time....But I like to have them actually*
- R3 | *We fail at following up. Usually people are so sick of it so then you're happy to just let it go. Especially if the time is limited. It would have been good to collect [what is] good and bad, but rather as before and after meetings than several meetings within [the project].*

Retrospectives are somewhat appreciated by the respondents as a forum for the team members to express their experiences. However all respondents agree that what is discussed should have a clearer routines of following up to know that something comes that comes up during the meeting is addressed and not just is discussed and then dropped.

5.1.7 Planning and visualization of progress

These are the conditions discovered concerning planning and visualisation.

| |
|--|
| Planning is mainly made by managers |
| Team members would like to be more involved in the planning |
| Previous tries to use planning tools for visualisation has not worked but the team would like to have some kind of visual planning board |

Table 5.7

Most respondents say they are not involved in the planning of each project, as this is done by the managers with help from the creative director.

- R1 | *There is a rough planning that mainly I make where I look at project prioritization from the customer and then it is communicated to the production manager and sometimes [another manager]. The production manager handles most things. It can be so simple that I tell The production manager that we have a project that is 9000 hours and it should be ready before the holiday and then you (The production manager) need to talk about what resources are needed. If there are 4 cars then we need some sequence. I can say that the whole team is available or who can. It is a dialogue. He (The production manager) gets to talk about what he needs while I move around people and when and in what time person. My job is to make sure we have resources while The production manager says where the people are needed first on a project at large, me and the production manager sit together. It will be on an overall level and certainly not in detail. If we are going to do 8 exterior angles per car. Then we think how many people in how many weeks. What we didn't do as I tried was to is that the production manager uses Microsoft planner but then you need to be more detailed. We were not mature then and do not know if we are now. We do not run sprint planning, but rather a sprint planning free variant. We might be able to have it and I like the concept that. Now we have run weekly. We have our board with projects what is happening now and move them up and hopefully it will be clear otherwise they will be left hanging*
- R2 | *We try to estimate how long a project will take. It's hard to predict what's going on. We try to compare with old projects. There is not a project that worked like anything other A lot of spread sheets are made where we list and green mark when you have completed a task. We use planner, I try to use Microsoft planner and assign tasks what to do and distribute it. It is very difficult to get people to use it*

Some respondents mentions that it has occurred that they have been asked for opinions or had the plan presented before a project, but in general they have little or no say in the project planning process. Some of the respondents also say that they would like leaders not control the work but instead to focus more on supporting the work and the team members actually producing as they know their areas the best and it can be difficult to plan for someone with more expertise. Some feel that the planning sometimes are to controlled by the managers and could be improved by input from the team.

R3 | *What I think is maybe that it can lean towards being outside/ top controlled in the strategic where I think the emphasis should be on the producers who actually produce. They have the knowledge....It may then be below those who are in the project planning mode may not have the resource knowledge one might need that works closely with each other. We know each other's strengths. That optimization could be done better many times over.*

R6 | *I think that step is very irritating because the project managers do not know how it works. They don't know what's going on in the script*

Several ways to visualise the project progress has been tried., both on white boards and digitally. There is a consensus between all respondents that the white board is not used by them.

R6 | *To me it's, I don't even see it, it feels useless and I wouldn't go and have a look at it.*

Some look at it sometimes, more out of curiosity, while others does not even notice it. One respondent mentions that the board is usually not representative of what is actually happening.

R7 | *There's things written on it, maybe it's good for some but I don't look at it. It says I work in [a specific project] which I do today but I haven't for three weeks.*

R5 | *Once you actually stands there it might be good, can be nice to stand-up and see what a person is working on and grab a coffee, but it's convenient in planner, but having it analogously can be nice too. I don't use it myself, I only see it during the stand-ups*

Some respondents guess it might help managers to oversee what is going on, but team members do not interact with the board at all.

R3 | *I don't know, I don't put much energy there. It's probably to give project leaders an oversight, someone might think its good*

There is a wish from the two of the team members, and mangers in particular, to have a tool that visualizes the work flow, current status, progress and task assignments.

R4 | *I don't really look at it, there's someone who keeps track of it, and if it works for them that's great for them. It doesn't really work for me, I'd like a visual system, like the one with the notes, but where you can go in and see all projects and who works there and see progress and much more visibility, like see: 'that person has done this' and what problems and solutions have occurred, it needs to be seachable, and then maybe sole it [a similar problem] in another project...The board is a bit of who works where and is very general, but I understand that it's a full time job to keep track of for one person, but it would be good, to have a headline with lighting as well and then you can break down the tasks which should be completed for everything that needs to be done in lighting, and then you can see whats done and how the progress is going.*

Managers and one respondent also says that they have a tried making a digital project board in Microsoft Planner, but that it would only work if everyone is using it. This has not been the case.

6

Analysis and discussion

In this chapter the result from the interviews and observations are analysed and discussed on how the findings could affect the use of agile practises in regard of how the five studied agile practises can be used, and what the possible effects could be of each practice.

The result of the study has showed that digital production have some challenges tied specifically to the characteristics of the production which are connected to the creative process and the difficulty in describing requirements in a way that is possible to measure while other challenges are more general and occurs in other industries.

6.1 Sprints

The team do not use Sprints and have no defined time box or iteration they work in. However, the projects seems to have an iterative process as it is created partially and reviewed with possible changes in requirements. As Rigby, Sutherland and Takeuchi [19] claims, working agile is suitable when delivery can be divided into parts that are valuable for the customer. As the team today have reviews continuously during a project with the customer for acceptance of produced picture components, which is a part of the finished product and a process model which seems iterative, it could be possible to divide the projects into sprints where the reviews define the end of the sprint. To be able to work with sprints, the different parts of the project would have to be divided into tasks with an appropriate length and extent. There are however some challenges which needs resolving tied to planning and task dividing.

If the closed window rule is used, the team can focus on tasks in that specific sprint, while no changes to the requirements are done. This could help to keep focus on producing a result most important for the next review, instead of taking requests for changes in the middle of project tasks. Working within a set time frame with a clear and achievable goal might be beneficial for the team by focusing on completing smaller tasks which helps both team members and managers to better monitor the progress.

One benefit of using sprints would be that only the requests with the highest priorities, which are to be completed in the coming sprint, needs to be divided from user stories into tasks. This would fit well with the project challenges with changing or unclear requirements, as it can limit the work which has to be planned and performed with uncertain requirements.

A challenge is that customer reviews are more frequent towards the end of the project and the first review is set depending on when the first pictures can be delivered, which commonly is a longer time period than towards the end of the project. This could make it difficult to use sprints, especially towards the end of the project, as the reviews are not far enough apart.

It seems to be difficult for team members as well as managers to estimate how long a project and the different tasks can take as they often vary. This is due to issues regarding that process challenges are difficult to foresee as well as estimate the time required to resolve them. As similar tasks might differ a lot in time to complete, if many problems occur during one sprint the tasks might still not be finished until the review. In a sprint with little or no issues, there might instead be a starvation of work to be done. A way to avoid this is to instead of sprints work with a maximum number of tasks in progress,

using a kanban board. This calls for a very clear dividing of tasks and how they should be prioritised. Sprints, as well of maximum tasks in progress, would increase time of work planning and the need to define tasks from user stories. In sprints this would involve the entire team. The result shows this is a request from the team to be more involved in the planning. Therefore, sprints and sprint planning can also serve as empowerment as a way to feel ownership as well as responsibility over their processes as they can directly and consciously influence how their work is planned.

A reason to implement Sprints could be tracked back to the agile principle of creating value for the customer. Rather than having several projects in progress, which hopefully have had developments, it is unlikely that any customer would be happy to come to a review expecting a part of a project hearing "we have not got anything to show you but the progress is great".

6.1.1 How Sprints can be used

A suitable time frame have to be set in which the team has a defined set of tasks to complete. The time frame could preferably be defined by when customer review meetings are held, but as those are more frequent in the end phase of a project than in the beginnin. Because of this the sprint length has to be long enough to complete tasks in the start of the project, as well as short enough to not last over several review meetings towards the end of the project.

To use sprints the team would have to start using a planning tool to plan the sprints as well as having someone who is responsible for leading the sprint planning meetings. For the sprints to work, the team members would have to update the plan continuously during the sprint as the tasks are completed and new tasks started.

6.2 Daily stand-up

The division have developed from a generic to an augmented daily stand-up developed to better suit them, and serve as a kick off for the working day by providing a forum to raise issues or share information that concerns the team. We can see from the results that there are strong opinions about how these meetings are conducted and their benefit for the team. Meyer [16] reviews the stand-up as a good way to keep the team updated, as well as a way for team members to commit to the project on a daily basis by making a promise to the other team members when answering what they will do today, and prove that they kept yesterdays promise on what they said they would do compared to what they did. In the teams augmented version where not every team member gets to answer the three questions, this benefit is lost. Meeting and having a set forum to find support and share information which concerns the entire team would however serve as a benefit for the team as it eases communication by giving it a natural place.

When the stand-ups takes too long the discontent from team members is high, as the time feels wasted. As Meyer [16] suggests, it is important to keep the time limit, which from the result seems critical for the teams opinion on these meetings. A strict moderation of the meeting, is therefore necessary to keep the meetings on track.

A good experience from the morning meetings is that obstacles are made aware of earlier when having a forum to express them in. For example, someone on a different sub project might have a solution to a problem. If this is communicated the sub projects can apply previous solutions to issues rather than re-inventing the same or a worse solution. This might suggest that the meetings does increase the team communication as it lowers the barriers to ask questions. This helps to create an work environment with more open communication not only at stand-ups but also outside of meetings.

Stand-ups in the smaller sub teams seems more appreciated and is also seen as beneficial both by the team members, and by the project manager. In the sub teams the team members get updated only on the project that concerns them at the time. The project manager encourages the sub teams to have

those and, although without any actual research, feels that the sub teams which does this on a daily basis usually gets less problems and solve those quicker than those who do not have the meetings. According to research this seems to be a correct assumption as that increased communication and interaction helps the teams performance in a very positive way[3, 11].

The fact that the team works in divided sub teams on different sub projects lead to that they do not affect each others progress other than if resources are allocated somewhere else. This speaks against having a stand-up with the entire team as they do not directly depend on other sub teams. However reallocation, support and identification between sub teams is common which could be in support of keeping stand-ups with the full team to keep them synchronized.

Since the team consists of about twice as many as what is recommended for an agile team, a stand-up conducted with the traditional daily stand-up questions often takes a long time. Especially if a few team members give long answers or has an obstacle that leads to a discussion. This might increase the feeling of time wasting as what is brought up not necessary concerns the team as a whole, while still holding them up.

By assembling the whole team, stand-ups create a way to increase communication within the team which was brought up as something that had increased over the last year. There is however is not necessarily thanks to the stand-up meetings, as the communication has increased but it is not exclusively kept to stand-ups.

6.2.1 How Daily stand-ups can be used

The augmented stand-up seems accepted by the respondents, where a compromise between the lost information by not having everyone answer the three questions, is made up for by having shorter meetings and more relevant topics. In a traditional stand-up all team members answer what they are doing today, what they have done yesterday and if they have something obstructing their work. In a large group this might lead to long stand-ups where what is said is not relevant for most of the team members, but increase the team communication and understanding as well as the possibility to quicker solve issues. Therefore, time limiting and a strictly keeping to the topic to keep the meetings short is necessary to build an acceptance for these meetings among team members, as well as using the meeting to get as much value from it as possible. Each project plan and progress of tasks is a good support during these meetings. If something comes up that does not keep to topic or pushes the time limit, it should be up to the team manager to delegate which team members who are responsible to follow up after the meeting, rather than coming up with a solution during the meeting. The stand-up should be "meta" in the sense that team members lifts problems, but not a forum to solve them[15].

To gain the benefits possible from a traditional stand-up, the sub teams could have their own stand-ups, to keep the sub teams updated on their projects progress as well as gaining the benefits of answering the three questions.

6.3 Planning

The planning is today done as well as viewed upon as a managerial task where the team as a whole has little or no say in how the tasks are prioritized and how much time are devoted to each project. It is also the managers who write task lists for the project, and mainly them who are concerned about updating or checking them, as this is rarely done of the team members. There is however opinions in the team that managers lack the expertise and knowledge needed to accurately plan an entire project which encourages the reason for involving the team in the planning process.

The result has shown ambiguity about the planning. Tasks are described as similar to previous projects and therefore easily planned by managers, but there is experiences that similar tasks differ in time consumption. There is contradicting opinions that managers should manage project plans, with wishes

of higher involvement of the project planning from the team, as an opinion that managers lack the insight needed to plan each process accurately. There is also requests for detailed and updated plans, but a low will to actually update a plan by the team members, which has been proven by failed tries to use the white board as a planning board as well as Microsoft Planner.

Possible positive outcome of involving the team in the planning process is that the possibility to actually plan the project on a task level, as each team member who have expertise in the process step can more accurately separate the tasks and help determine the time than the managers, as well as the team feeling responsibility for the plan. Each team member also gets the opportunity to directly impact and feel responsibility for their work as they get a high level of self management. To succeed each team member would have to take responsibility to update the plan.

By involving the team in the planning process, the team as a whole might get a better understanding of why the project is planned in a certain way and gain understanding of others views. The team members have the opportunity to influence the planing based on their knowledge and experience which can help to create a more accurate and realistic plan. By having each project presented in separate tasks managers get a better overview[16].

However, as it is also mentioned that tasks have a high level of similarity. What creates the time difference is usually technical issues, mistakes made in tasks or difference in experience. Involving the team in the planning might be a waste of time as in many cases the plans can still be made without input from all team members. The involvement can lead to better planning, but there is a high risk of making the planning more complicated and time consuming than needed.

One risk of involving the team in the planning, is a lack of engagement. If many of the team members do not find value in being involved in the planning, there might not be a benefit from it. As seen from the result, several of the respondents dislike meetings which to them feels unnecessary. If they are to be involved, this will of course take time from other work tasks, and might increase a feeling of wasting time on non-value adding tasks, in the same way many have felt before about the Daily stand-up meetings. Many tasks seems to be similar to tasks done in previous projects, and should therefore be easy to estimate which doesn't require input from the entire team.

6.3.1 How planning can be used

If sprints are implemented, each sprint starts with a sprint planning meeting. During the meeting the team members working within a project chooses the user stories, or tasks, to finish during the coming sprint. They then separate each story into tasks that can be expressed in working hours. The third step is to estimate the time for each task, which can be done by each team member guessing how long they think the task will take to finish, and then discussing the guesses and agreeing on an estimated time. This method is especially suitable when the project is not similar to previous projects[16].

In projects very similar to previous projects, the task dividing and time estimation could be kept as a managerial task, and a planning meeting serve as a kick off for the sprint and as a referral that the team agrees on the estimated time plan. In this case the meeting could take up to 30 minutes, depending on the sprint length. This can advantageously be done in a digital application such as Microsoft Planner, which is an application already accessible to the division.

6.4 Visual planning board

As seen from the result the existing tries to implement a visual planning board has been unsuccessful. The team seems to view planning and organisation of projects as a managerial task as well as keeping a task board up to date something that can be done by managers. The result is ambiguous as there is also a dislike of a high level of monitoring and as managers asks team members of progress on their tasks in person which sometimes is received as stressing. Of course, it a task board was used by the

entire team, managers as well as the team could easier oversee the progress, which Meyer describes as a good way to keep track and motivate the team [16, p.127].

There seems to be a desire to use a task planning board to oversee progress mainly from the managers as they struggle to see the status of the ongoing projects. The team members does not feel this need, as they have a good overview of the project in which they're working and due to good knowledge and expertise are familiar with the process, without the need of a task board to continue their work. Update a task board, to them, feels like an unnecessary and extra task which only takes time and effort from the the progress of the project. This creates negative spiral where managers needs to ask team members about project progress which leads to them feeling stressed or monitored. The implementation and use of a task board could have a big positive impact on the teams as it could help the managers oversee the status of each project without the managers having to ask. A big cause of stress can then be reduced for the team members.

The use of a task board is primarily requested from managers, as it would increase their possibility to better monitor the project. Unless the team members finds benefit in using a task board, and finds the effort less than this benefit, the implementation might increase pressure from the managers as they not only has to still ask each team member of the progress, but also remind them to update the task board.

6.4.1 How to use planning

Having a detailed plan for the coming task of the project, creates the opportunity to visualise the progress by using a visual task board. If the plan is made in a digital application, such as Microsoft Planner, the a digital visual board is created while planning each sprint. By having a list with user stories that during the planning are divided into tasks which create a backlog for the project, each project just needs to add two more buckets for tasks in progress and tasks that are done.

When added to the backlog, each task needs to be given a time estimation. More information about priority and due date to finish the task can be added and are helpful but not necessary in this step. If this is not added all task can be seen as equally important.

Team members then use the backlog to start tasks by moving them from backlog to in progress, and assigning the task to them self. When a team member finishes a task, the task is moved to done. In a digital tool, there is also room to leave comments on the task about for example unforeseen issues, challenges or information that can be helpful for future work. That way the team and managers knows who is doing what and get an overview of the progress and the project plan also serves as documentation of the project [15].

6.5 Retrospectives

The weekly evaluation meetings used today are, according to the result, not highly appreciated, although some respondents sees value in having that kind of meeting to lift suggestions for improvements. Contradictory the result has also showed that there is a request of a forum to discuss development of both the process and for the team members individual competence in terms of creativity as well as technical competence.

Retrospectives might have a positive effect as a possibility to develop and evaluate the work both individually and as a team, as well as the processes. Like other meetings it's important to keep the meeting to a limited time and keep to the topic.

The weekly evaluation meetings provides a forum to raise questions and discuss challenges as well as make plans for continuous improvements. From the result there has been respondents who has lifted a need for this kind of forum, and sees it as a sign that managers value the opinions and well being of

the team.

The meetings conducted today is not appreciated as the team members struggle to see the value coming from them and doesn't want to discuss just for the sake of discussing. When having the meeting on a Friday afternoon, some feel stressed to finish their work, and attending the meeting increases the feeling of stress as well as discussing topics which does not lead to progress.

6.5.1 How Retrospectives can be used

When working in sprints, retrospectives has a natural place after each sprint to review what went well and what can be improved or changed to make the next sprint better. Like other meetings it is important to keep the Retrospectives within a strict time limit. A plan of how to follow up on what is said on the meetings needs to be specified.

The meetings could preferably focus on the latest sprint, and have the questions: What did we do in this sprint that we should keep doing? What didn't we do in this sprint that we should start doing? What did we do in this sprint that we shouldn't do again? The answers should be connected to the work but doesn't necessary have to be directly tied to the process steps or tasks. It is also important to try to answer the questions in a way that is constructive and possible for the team to do something about rather than pointing out mistakes.

The points brought up during the meeting should be decided to either lead to action, in what way and by who, or to not take action. These points can then with advantage be taken into consideration when planning next sprint or creating new tasks.

6.6 Cross-functional teams

The result shows that there is some cross-functionality of the team that has developed over time through experience. Becoming a fully cross-functional team member takes a long time of training and experience and seems to in many ways stand in direct conflict with the ability for excellence in a specific production step.

Cross functionality seems to be of great benefit for the team as a whole, but takes a lot of time to achieve as many of the tasks are complex and takes many months or even years of training to fully master. Therefore cross functionality is the practise which has to be used with a high precaution. While aiming to achieve team members to become more cross functional, it is important to not sacrifice excellence in a specific task, as Meyer emphasizes [16, p.102]. When the process steps are as complex as in this process, a to high focus on cross functionality challenges the quality and speed of the process steps. With this risk considered, the team might have great benefits from a higher level of cross functionality as more team members can support struggling process steps during an increased work load, understand problems and suggest solutions and have a better understanding of the entire process flow.

If team members have a high grade of cross-functionality they have a higher possibility to help and relive process steps with high work load independent of where in the process the work load is located at the moment. It could also help by having more team members being able to understand and come up with solutions of issues, as well as a more common understanding of the entire process that might increase the understanding of what is important in terms of quality, time management and communication between the process steps.

As cross-functionality seems to stand in conflict with excellence, the risk of prioritizing a cross-functional team might result in a loss of deep knowledge and learning of how to perform a specific process step. This might cause the steps to take longer time than they could if they were performed by team members who excel at the specific task.

There also seems to be an agreement that people with excellence in a specific task are able to keep a higher level of quality on their work, which decreases the level of rework that needs to be done.

6.6.1 How Cross functionality can be used

As there are risks connected to putting too much focus on achieving highly cross functional team members, before starting to train a team member cross functionally, they should be confident and comfortable within their specific area of expertise rather than having many team members who knows little about everything. This learning process will most likely be very individual for each team member and therefore needs to be adapted through a discussion between each team member and for example team management, but could also be discussed in other ways.

7

Conclusions

Agile practises seems to suit the teams characteristics and challenges. Adaptions due to the teams size and the working conditions where they are divided into sub teams have to be taken into consideration, therefore generic implementations of agile practises might not be applicable. Adaptions of agile practices suited to the team can have a positive effect on the process if implemented. There are however several challenges tied to the practises that needs to be taken into consideration to use them in a beneficial way. The practises are also connected in many ways, where the implementation of for example visualization is eased if also agile planning is used, and retrospectives gets a more natural place in the process if sprints are used. All tools can however be used individually but have a greater synergy if used together.

7.1 Sprints

Sprints can be used as a practice to increase goal completion to focus on completing tasks for review. This could help to keep an efficient amount of tasks in progress to work in a value adding way, rather than taking shortcuts to produce something to show for a review which leads to extra work further on. A possible disadvantage of sprints is the time needed to organise the sprints.

7.1.1 A possible way to use sprints

Sprints can be used task a way to plan the tasks in a sufficient time frame. As reviews are used to deliver a project partially, sprints could be based on when reviews occur. Sprints however, are highly dependent on how other practices are used, and in particular planning.

7.2 Daily stand-ups

Daily stand-ups in digital visual production can be used in an augmented version suited to the team size and adapted to having various sub projects running within the team. The stand-up needs to be kept short and keep to topic to not end up in discussions which should be kept outside the meeting. If used in an efficient manner the stands-ups might support team communication and lead to quicker troubleshooting and problem solving.

7.2.1 How daily stand-ups could be used

Daily stand-ups are a good practice to develop good communication, and can be held daily when used correctly; within clear time frames, and with a strict connection to the subject.

7.3 Planning

Agile planning can be used in digital visual production to make realistic plans as well as encouraging and engage the plan through the whole team. Involvement of the team members in the planning process might also increase the team members feeling of ownership, possibility to control and adapt their working conditions.

7.3.1 How planning could be used

If sprints are used, the planning is given a natural place at the beginning of each sprint where the team can distribute and prioritize the tasks based on the team's own experience. They can estimate the tasks and then prioritize them at the same time as the team has a great opportunity to influence their work and insight into how the planning has been done.

7.4 Retrospectives

Retrospectives can fill an important role to develop the work processes and to find both technical, social and organisational areas of improvement. In an iterative work flow retrospectives have a natural place after each sprint. There is however important that what is discussed during retrospectives are followed up on and responsibility for the activities are specified and assigned to a person or group.

7.4.1 How retrospectives could be used

With a clear and prepared agenda on how to address subjects, with a focus discussing subjects in terms of what can be changed for the better, or what should not be changed. Plan the retrospectives after each sprint sprints and create routines for follow-up where to know who is responsible for taking action and how it should be reported back.

7.5 Cross functionality

Cross functionality has an important role in digital visual production, as it increases the team flexibility, but stands in conflict with excellence. In digital visual production, cross functionality between team members is important to be able to assist in an increased work load, and to solve obstacles while excellence is necessary to increase result as well as lowering the time consumption to complete tasks. It might therefore be beneficial to focus on reaching excellence before becoming cross-functional.

7.5.1 How cross functionality could be used

It is important to find a balance between team members becoming experts in one area and building up a broad competence, but our conclusion is that the primary objective should be to first focus on becoming good in an area as a main competence, and then develop on a broad base with other tasks.

8

Future work

When working with agile practises other interesting areas regarding customer collaboration and interaction was found. Mainly regarding the level of involvement in each others processes and the tools used. The customer aspect was however not within the scope of this thesis. These areas would however be interesting to continue to investigate.

The conclusions open opportunities for future research. The main continuation of our research would be to implement the practises discussed in the conclusion. With this action there would be a practical application using the collected results from the interview study. With the deep interviews there seems to be clear conclusions on how the team should go about changing their practises to fit their situation. However applying the suggestions in practice would further solidify that the practises can be used with successful results.

With further research it would also be interesting to dive deeper into the agile way of working by going beyond practises. Since they are just one way of approaching being agile it would be interesting to start in the other end of the spectrum and instead start with trying to use the philosophy of agile.

During the interview study there was also a lot of mentions of how the team interacted with the customer. In the limitations it was stated that the research would only focus on internal activities. However since customer interaction is a central aspect of agile this could be extended to also include the customer.

Research about the use of agile practises could also be tested in different kind of areas that also are regarded as production. This could be tested in for example physical production chains that could have similar conditions to the digital visual production company in this thesis.

Bibliography

- [1] Bechhofer, F., L. Paterson, et al.
2000. *Principles of research design in the social sciences*. Psychology Press.
- [2] Bell, E., A. Bryman, and B. Harley
2018. *Business research methods*. Oxford university press.
- [3] Brinks, H. and P. Johnson
2019. The agile way of working within the manufacturing industry: An exploratory study investigating how to lead the adoption of the “agile way of working” within the manufacturing industry.
- [4] Cockburn, A.
2006. *Agile software development: the cooperative game*. Pearson Education.
- [5] Cohn, M.
2005. *Agile estimating and planning*. Pearson Education.
- [6] Cohn, M.
2006. Planning poker. *Chapter*, 6:56–59.
- [7] Davis, B. and D. Radford
2014. *Going beyond the waterfall: managing scope effectively across the project life cycle*. J. Ross Publishing.
- [8] Ellis, G.
2015. *Project management in product development: leadership skills and management techniques to deliver great products*. Butterworth-Heinemann.
- [9] Focus the Way Forward
2018. The agile maturity pyramid: What’s the difference between doing agile and being agile? <https://blogs.dxc.technology/2018/05/06/the-agile-maturity-pyramid-whats-the-difference-between-doing-agile-and-being-agile/>, Last accessed on 2018-11-30.
- [10] Höst, M., B. Regnell, and P. Runeson
2006. *Att genomföra examensarbete*. Studentlitteratur AB.
- [11] Lalsing, V., S. Kishnah, and S. Pudaruth
2012. People factors in agile software development and project management. *International Journal of Software Engineering & Applications*, 3(1):117.
- [12] Manifesto, A.
2001. Agile manifesto. available in <http://www.agilemanifesto.org>.
- [13] Measey, Peter, L. R. and M. Short
2015. Agile foundations: principles, practices and frameworks. BCS.
- [14] Medinilla, Á.
2012. *Agile management: Leadership in an agile environment*. Springer Science & Business Media.
- [15] Medinilla, Á.
2014. *Agile Kaizen*. Springer.

- [16] Meyer, B.
2014. Agile principles. In *Agile!*, Pp. 49–78. Springer.
- [17] Pinto, J. K.
2013. *Project management: achieving competitive advantage*. Pearson Upper Saddle River, NJ.
- [18] Pinto, J. K.
2016. *Project management: achieving competitive advantage*. Pearson Upper Saddle River, NJ.
- [19] Rigby, D. K., J. Sutherland, and H. Takeuchi
2016. Embracing agile. *Harvard Business Review*, 94(5):40–50.
- [20] Rowell, A.
2019. Agile leadership – the missing piece.
- [21] Seidman, I.
2006. *Interviewing as qualitative research: A guide for researchers in education and the social sciences*. Teachers college press.
- [22] Shaydulin, R. and J. Sybrandt
2017. To agile, or not to agile: A comparison of software development methodologies. *arXiv preprint arXiv:1704.07469*.
- [23] Ungvarsky, J.
2020. Snowball sampling. *Salem Press Encyclopedia*.

Appendix

A.1 Original quotes and translations

Conditions affecting the process and organisation

| Resp- ondent | Translation | Original answer |
|-----------------|--|---|
| R3 | It can be sample images or something completely outside the industry, may be some fashion or color and shape or colour maps. It can be described with persons or anything. Who's supposed to buy and how/what to attract. They make briefs and sometimes you can fill in that you interpreted correctly. | Det kan vara exempelbilder eller något helt utanför bilbranschen, kan vara något mode eller färg och form eller färgkartor. Det kan beskrivas med personer eller vad som helst. Vem som ska köpa och hur/vad man ska attrahera. De gör briefar och ibland kan man fylla i så man tolkat rätt. |
| R1 | Sometimes we get something to replicate and then it is about re-creating. Especially when we can't use the same tool. It can be about Nuke or Photoshop. This can be a basis for light setting. It is very important that we get input for the project and start to do some basic lighting and try to pull it as far as possible before we move on. Otherwise, it will be a snowball effect where all the struggles increases exponentially. That's why we want to get done 90 percent in lighting The more we do in lighting, the less we need to do later. | Ibland får vi något vi ska replikera och då handlar det om att återskapa. Speciellt när vi inte kan använda samma verktyg. Det kan handla om Nuke eller photoshop. Detta kan vara en grund för light setting. Det handlar mycket om att vi får indata till projektet och börjar att sätta igång med att göra en grundljussättning och försöker dra den så långt som möjligt innan vi går vidare. Det blir annars en snöbollseffekt där allt krångel ökar exponentiellt. Därför vill vi komma 90 procent i ljussättningen....Ju mer vi gör i ljussättningen desto mindre behöver vi göra sen |
| R1 | When it comes to the creative, we have been chasing material. Then we had meetings between us and [concerned customer divisions]. How should they [the pictures] feel. Dark, bright, murky, fresh. There were briefs from different agencies and also this photo angle brief but now we get a more complete package that comes from design. Then we get the technical bit and what is included in a car we get in a system called CPAM where we work with the IT side that produces what is to be produced. At some point you add and remove things. Sometimes you add color | När det gäller det kreativa har vi jagat material. Då hade vi möten tidigare mellan Design och MarCom. Hur ska de kännas. Mörka, ljusa, murriga, fräscha. Det kom briefar från olika byråer och även den här foto/vinkel briefen men nu får vi ett mer färdigt paket som kommer från design. Sen så får vi den tekniska biten och vad som ingår i en bil får vi i ett system som heter CPAM där vi jobbar med IT sidan som tar fram vad som ska produceras ut. Vid ett visst tillfälle så lägger man till och tar bort saker. Ibland lägger man till färg |

| | | |
|----|---|---|
| R2 | <p>When it becomes a problem, we often solve it with hard work and often nothing but solve it on the spot. There is no system but the problems are different all the time What they sent first may no longer apply and then we have to start over a little from the beginning.</p> <p>When we get updates we may get new colors or new chairs with colors and materials where we need to create the materials and shaders if we haven't had it before. It varies from project to project ... It may be that one week before we publish the pictures, they realize that we have to change how some stitches look because of a cost reduction so that a stitch looks different. Then we need to reverse the whole process. It is very difficult to predict</p> | <p>När det blir problem löser vi det ofta med hårt slit och ofta inget annat än att lösa det på plats. Det finns inget system utan problemen är olika hela tiden....Det de skickade först kanske inte gäller längre och då får vi börja om lite från början.</p> <p>När vi får uppdateringar kanske vi får nya färger eller nya stolar med färger och material där vi behöver skapa materialen och shaders om vi inte har det sen tidigare. Det varierar från projekt till projekt...Kan vara så att en vecka innan vi publicerar bilderna så inser dem att vi måste ändra hur några sömmar ser ut på grund av en kostnadsbesparing så att en söm ser annorlunda ut. Då behöver vi backa hela processen. Det är väldigt svårt att förutse</p> |
| R1 | <p>Incorrect input is a problem, can't say any percent. We get a digital car from [the customer] and it happens quite often that it is wrong. Depending on when it is discovered, it can become a problem. If it is late, the problem becomes bigger. Especially if some geometry is wrong and is included in many models</p> | <p>Felaktig indata är ett problem, kan inte säga procent.</p> <p>Vi får ju en digital bil från Volvo och det händer ganska ofta att den är fel. Beroende när det uppdagas kan det bli ett problem. Om det är sent blir problemet större. Speciellt om en geometri är fel och är med i många modeller.</p> |
| R6 | <p>What often happens is that it is not good, what has been rendered, and there has been errors in the script and all layers are not included. In this step it takes some time too, so needed that I am in the process of what it should look like. So before you can say that the renderings are finished from the 3D, it can take a long time before you know that it will not change anymore.</p> <p>102</p> <p>I think that step is very irritating because the project managers do not know how it works. They don't know what's going on in the script</p> | <p>Det som ofta blir är att det inte är okej alltså det som är utrenderat och det blivit fel i scripten och alla lager är inte med. I detta steget krävs det en del tid, så det behövs att jag är med i processen hur det ska se ut också. Så innan man kan säga att renderingarna är färdiga från 3dn så kan det gå långt tid innan man vet att det inte kommer att ändras mer.</p> <p>Det där steget tror jag är väldigt enerverande för att projektledarna inte vet hur det fungerar. De vet inte vad som pågår i scripten</p> |
| R4 | <p>It is a recurring problem that someone says that it is finished it turns out that it is not</p> | <p>Det är ett återkommande problem att man säger att det är klart men att det visar sig att det inte är det</p> |

| | | |
|----|--|--|
| R3 | <p>Well you are always on your toes and that is a prerequisite. Sometimes it goes in line with project after project but you pay attention. If they inquire it is a tricky part. Depends on how the deal is agreed. There are fuzzy areas and you want to help and stretch extra to make them happy, but there are financial limits to what you can do. After all, it is not so popular to make changes to what has already been decided. Especially if something has been nailed by a person and then you have to change it</p> | <p>Jo men det är man alltid på tårna om och det är en förutsättning. Ibland går det i linje projekt efter projekt men man är uppmärksam. Om det hör av sig är det en klurig bit. Beror på hur affären skakats i hand. Det finns luddiga områden och man vill ju hjälpa till och sträcker sig extra för att de ska bli nöjda men det finns ju ekonomiska gränser med vad man kan göra. Det är ju inte så populärt att komma in med ändringar i vad som redan bestämts. Speciellt om något blivit nailat av en person och sen måste man ändra det.</p> |
| R6 | <p>Then I make sure I make the change that the customer wants ... I see a value in [doing] exactly what the customer wants ... Last week we were going to have a review with the customer and someone else at work had done a job that was completed and printed and the CD had not seen what it looked like...So I sat remote and was called to solve it. Then I'm ready to sit and work all night and do everything that usually takes 3-4 days, so I sat all night to be ready for meeting 10 in the morning. That's how far I am ready to go, to do such things, to make the customer happy, it was a bit like saving this or getting a dissatisfied customer.</p> | <p>Då ser jag till så att jag gör ändringen som kunden vill...Jag ser ett värde med just det här som kunden vill ha...Förra veckan skulle vi ha review med kund och en annan på jobbet hade gjort ett jobb som var klart och utskrivet och CDn hade inte sett hur det såg ut. Så då satt jag remote och blev ringd för att lösa det. Då är jag beredd att sitta och jobba hela natten och göra allt som vanligtvis ta 3-4 dagar så satt hela natten för att vara klar till mötet 10 på morgonen. Så långt är jag redo att gå för att göra en sån sak för att göra kunden nöjd, det var lite så att rädda detta eller att få en missnöjd kund</p> |
| R5 | <p>It is probably communication and sometimes their boss has said something and then he changes his mind just like "clicks his fingers" and calls an hour later and has changed his mind Technical: every day there is a problem that needs to be solved, it might be the wrong material or the renderings take a long time to get out and sometimes we are locked in It is very important that we are clear with the communication, so we have to address it if it affects the group and is critical. It is super important and there may be a problem that someone sometimes misses it. You sit in your own bubble and work on your own task. It is</p> | <p>Det är väl kommunikation och ibland att deras chef sagt något och så ändrar han sig så där "knäpper med fingrarna" och ringer en timma senare och har ändrat sig....Tekniska: varje dag är det något problem som ska lösas, kan vara att ha fel material eller att renderingarna tar lång tid på sig att komma ut och ibland är vi låsta....Det är väldigt viktigt att vi är tydliga med kommunikationen, så måste vi ta upp det om det påverkar gruppen och är kritiskt. Det är superviktigt och där kan det vara ett problem att någon missar det ibland. Man sitter i sin egen bubbla och jobbar på sitt. Det är mer vanligt</p> |

| | | |
|----|---|--|
| | more common than it should be. There we have Slack now which is really good as a communication tool. Then you can paste code or image and it is smooth. | än vad det borde vara. Där har vi ju slack nu som är jävligt bra som kommunikationsverktyg. Då kan man pasta in kod eller bild och det är smidigt. |
| R2 | We do not understand their process and they do not understand ours. We have tried to see and understand each other's needs, but it is very difficult. It has been a big problem to understand each other | Vi förstår inte deras process och de förstår inte vår. Vi har försökt ses och förstå varandras behov, men det är jättesvårt. Det har ju varit ett stort problem att förstå varandra. |
| R4 | So personally, I can change anything I have done but it is a matter of time and time is money. There may be a certain disconnect between what we say and expectations with us and the customer, it may not be as good communication and consensus as to what should always be delivered in the end | Så rent personligt, jag kan ändra på vad som helst som jag har gjort men det är en fråga om tid och tid är pengar. Det kan vara en viss disconnect mellan vad vi säger och förväntningar hos oss och kunden, det kanske inte är så bra kommunikation och samsyn om vad som ska levereras alltid i slutet. |
| R4 | Yes I would probably say that, it feels like it is quite common, the task can have the same nature, this we have done 100 times, but it is difficult to predict what pitfalls are coming, which can depend on anything, that the project manager has not communicated a change that is not perceived, a lot [of communication is] orally, there is still no good, clear project plan or flow chart that shows where we are and how far we have come. So it is difficult to keep track of, it is assumed that the same thing takes the same time but turns out that something is missing and must be ordered from those who do the digicar and then something suddenly takes a day longer. | Ja det skulle jag nog säga, att det känns som att det är ganska vanligt, uppgiften kan ha samma natur, detta har vi gjort 100 gr, men det är svårt att förutse vad för fallgropar som kommer, som kan bero på vad som helst, att inte projekt ledaren har kommunicerat en ändring som inte uppfattats, mycket muntligt, fortfarande ingen bra överskådlig projektplan/flödeschema som visar vart vi är och ska hur långt vi har kommit. Så är svårt att hålla koll på, man räknar att samma grej tar samma tid men visar sig att något saknas och måste beställas från de som gör digicaren och att något plötsligt tar en dag längre. |
| R7 | It could be if there are new parts in the rendering and that I don't know what it should look like. Then it may be that you think it should be something that has changed material and then you have worked on a material that should not be used. They may not know for themselves what material to use or they will change after a while. There can also be a problem | Det kan vara om det är nya delar i renderingen och jag inte vet hur det ska se ut. Då kan det vara att man tror att det ska va något att den bytt material och då har man arbetat på ett material som inte ska användas. De kanske inte vet själva vilket material de ska använda eller att de byter efter ett tag. Kan även vara problem med |

| | | |
|----|--|--|
| | with renderings of the digicar and things that get the wrong code or render wrongly | renderingar av digicaren och saker som får fel kod eller renderas ut fel. |
| R5 | Had we done as we would have liked with all the cars and the 10 years of experience, it would have been so much faster Well, it is mainly Volvo who decides how we should do. And that we (rapid and volvo) use different tools. | Hade vi gjort som vi hade velat med alla de bilar och de 10 åren av erfarenhet att det gått så mycket snabbare....Det är väl huvudsakligen volvo som bestämmer hur vi ska göra. Och att vi (rapid och volvo) använder olika verktyg. |
| R1 | <p>There is a bit of the product awareness that there are many who enter the industry who has an artistic vein and we need more technical structure. You should know what a car is, but you don't need to be interested cars [as in function and technology].</p> <p>To address this we would need ways to find some way to automate so that we have control over the structure so you don't keep everything in mind We are a bit poor at quality control so if you say that one step is to take out it from Maya and then take it out in Nuke and Comp. It may be that we do not give people enough time.</p> <p>192</p> <p>If you get wrong things in Comp, the problem grows and becomes bigger in the end. There is potential there</p> | <p>Det är lite med produkt kännedom som det är väldigt många som ger sig in i branschen ger sig in detta har en artistisk ådra och vi behöver mer teknisk struktur. Man ska veta var en bil är men behöver inte vara intresserad av vad en bil är.</p> <p>För att ta till sig detta skulle vi behöva sätt att hitta något sätt att automatisera så att vi har koll på strukturen så man inte behålla allt i huvudet....Vi är lite dåliga på kvalitetskontroll så om man säger att ett steg är att plocka ut det från Maya och sedan plocka ut i Nuke och Comp. Det kan vara att vi inte ger folk tillräckligt med tid.</p> <p>Får man in felaktiga saker i Comp så växer problemet och blir större i slutändan. Där finns det potential.</p> |
| R1 | It is extremely important that the creative process can not be constantly changed. If we find something that changes, you can change it, if something needs to be changed, it can cost. That's why we need people from [the paying customer division] in these processes. | Det är EXTREMT viktigt att den kreativa processen inte ständigt får ändras. Om vi skulle hitta något som ändras kan man ju ändra det. Om något skall ändras så kan det kosta. Därför behöver vi folk från MarCom i dessa processerna. |
| R3 | You underestimate how often the technical fails. Both hardware and resources would need to be strengthened. | Man underskattar hur ofta det tekniska inte fungerar. Man skulle behöva styrka upp både hårdvara och resurser. |

| | | |
|----|--|---|
| R2 | Gates are set up but they are never held, it may be that the render farm crashed or that something else stops so that the plans cannot be kept. If the smallest thing goes wrong, it can stop the whole process. | Det sätts upp stolpar men de hålls aldrig, det kan vara att renderfarmen kraschat eller att något annat stannar så att planerna inte kan hållas. Om minsta sak går fel kan det stoppa upp hela processen. |
| R7 | Now we spend more time getting pictures for review meetings. Then we chase build [a picture of] a car where we put the comp together for an assembled car and print for the review. When we do the whole, we do each part individually and then it gets better. They used to come out and look when we were basically ready while now it's review before we even [done]. Spend time on a demo where we can use some stuff but it will not be exactly the same as the finished product. | Nu lägger vi mer tid för att få bilder på reviewmöten. Då bygger vi ut en bil jäktat då vi satt ihop compen en ihopsatt bil och skriver ut inför reviewen. När vi gör hela gör vi varje del för sig och då blir det bättre. De brukade tidigare komma ut och titta när vi var i princip klara medans nu är det review innan vi ens. Lägger tid på en demo där vi kan använda vissa grejer men det blir inte exakt samma sak som den färdiga produkten |
| R6 | To have time to make review pictures when we have days to show [the pictures] and they look [review them]. Because it is complex scripts, but we have to make it to the review, we hurry past and do it manually. So we skip it and just get it fixed, but it would have been better to make the script completely complete from the beginning. | För att vi ska hinna göra review bilder när vi har dagar som vi ska visa och de ska se. På grund av att det är komplexa script men att vi måste hinna till review så skyndar vi förbi och gör det manuellt. Så skippar vi det och bara får fixa det men det hade varit bättre är göra scripten helt komplett från början |

Cross functionality

| | | |
|----|---|--|
| R1 | It's a competent team and we have, in our teams, a very good product knowledge which is very broad but in the same time high expertise. More [team members] could learn things deeper...In the team, during the last year, every person has become broader in their knowledge where we previously were narrower | Det är ett kompetent team och vi har i våra team en väldigt god produktkunnsedom som är väldigt bred men samtidigt bra spetskompetens. Även fler skulle kunna lära sig saker djupare. Sånt som sker senaste 1.5 året är att kommunikationen i teamet är bättre...Teamet senaste året har varje person blivit bredare i sin kunskap där vi tidigare var smalare |
| R4 | We have broadened the area of competence in the latest, many who | Vi har breddat kompetensområdet på det senaste, många som kan mycket mer om |

| | | |
|----|---|--|
| | knows a lot more about different areas, previously it was I and someone more who has most knowledge about different interiors and what works and why, but that knowledge is much broader now | olika saker, förr var det jag och nån till som hade mest kunskap om olika interiörer och vad som funkar vad och varför, men den kunskapen är mkt bredare nu |
| R3 | More experienced works in the look dev. phase, the persons we trust. Some resources who are moved around between teams might hop around. It's a introduction to becoming independent | Mer erfarna jobbar i look dev fasen, de personer man litar på. Vissa resurser som flyttas mellan team kanske hoppar runt. Det är en inkörsväg innan man blir självgående |
| R1 | My vision is that everyone would know everything. We have a few who can work already in the first step and take it on to the "Comp" stage and then deliver and work with support, that's what you could call the core team and they are super important and could deliver an entire project, while those who are super good at lighting can't do Comp, they know a little but they aren't experts. Those who are experts [in their area] who we praise, but they can not deliver an entire project...Would wish that people [team members] were broader, sometimes it [the process] can get held up if a competence is held only by 2 persons | Min vision är ju att alla skulle kunna allt. Vi har några som kan jobba redan i första steget och ta det vidare i Comp delen, leverera och jobba med support. Det kan man kalla core team och är jätteviktiga och skulle kunna leverera ett helt projekt, medans de som är jätteduktiga på ljussättning kan inte Comp. De kan ju lite men är inte experter. De som är specialister som vi höjer till skyarna men de kan ju inte leverera ett helt projekt....Skulle även önska att folk var bredare, ibland kan det vara stopp om kompetens bara finns hos 2 personer. |
| R2 | It's a huge learning curve. If you're experienced it takes 100 hours but if you're inexperienced it takes 500-1000 hours....Some are specialists in their area. We have one comp-specialist who is an expert and some generalists who can do everything. Some are experts in lightning. We're trying to work so that everyone has a broad knowledge. | Det är en stor inlärningsströskel. Är man erfaren tar det 100 timmar men är man oerfaren tar det 500-1000 timmar...Vissa är ju specialister in sitt gebit. Vi har en comp-specialist som är expert och några generalister som kan göra allt. Några är experter på ljussättning. Vi försöker jobba så att alla har bred kunskap |
| R3 | The right person on the right spot can make a massive difference. If the person assigning all parts aren't updated on their contents it could double the time of that process. It depends on that persons experience" | Rätt person på rätt plats kan göra otroligt stor skillnad. Om personen assignar alla delar inte har koll på alla delar så kan det dubbla upp tiden på den processen. Beror på personens erfarenhet |

| | | |
|----|---|---|
| R4 | When we have done a whole project from scratch it is a lot more based on our own merits and what we know works. So its a lot of the own experience when we take it on and starts to put down what it is that's supposed to be produced" | När vi har gjort ett helt projekt från scratch är det så mycket mer baserat på egna meriter och vad vi vet funkar. Så det är mycket av egna erfarenheten där vi tar vid och börjar spalta upp vad det är som ska komma ut |
|----|---|---|

Communication and team meetings

| | | |
|----|---|--|
| R1 | A year and a half ago, when I first started, the office was really quiet and I was impressed by how disciplined and focused everyone worked, until I realised that nobody was communicating.... | För ett och ett halvt år sedan, när jag först började, var kontoret riktigt tyst och jag blev imponerad av hur disciplinerade och fokuserade alla fungerade tills jag insåg att ingen kommunicerade |
| R7 | The collaboration between the process steps [works well]. If i see that something doesn't look right it's just to send it back to get it solved. You get what you ask for | Samarbetet mellan de olika stegen [fungerar bra]. Om jag ser att något inte ser rätt ut så är det bara att skicka tillbaka så löser det sig. Man får det som man frågar efter |
| R5 | The group feels good at least now. We have good moral and they are very flexible and we have split up pretty good now | Gruppen känns bra iallafall nu. Vi har bra moral och de är väldigt anpassningsbara och vi har delat upp oss ganska bra nu. |

Daily stand-ups

| | | |
|----|--|---|
| R1 | We have gone from being the entire team to first the entire team and then break into subgroups...If someone works on a [specific item] that group has their own check ins. For some it works really well while it doesn't for others. It shows in the progression and who knows whats going on | Vi har gått från att vara hela teamet till först hela team och sen bryta ut i undergrupper... Om någon jobbar med [en viss del] så har små grupperingarna ta sina avstämningar. För vissa fungerar det jättebra och vissa tror att de gör det medans andra inte gör det. Det märks i progressionen och vilka som har koll |
| R5 | I tried to develop it pretty much to keeping it short and if the [project manager] says that they're stuck that is | Jag försökte utveckla det ganska mycket att hålla det kort och om [projektledaren] säger att de sitter fast |

| | | |
|----|--|--|
| | <p>what's important to bring up. If someone has a solution which helps everyone. It's possible to make it even more efficient, sometimes you drift away [in the discussion] on an issue and two has a conversation and everyone else just twiddle their thumbs. Then you have to say so. It usually works well.</p> | <p>är bland det viktigaste att ta upp. Då om någon har en lösning som hjälper alla. Man kan göra det ännu effektivare. Ibland svävar man iväg på ett problem och två står och pratar och de andra rullar tummarna. Då får man säga till. Det brukar fungera bra.</p> |
| R4 | <p>For a while we had meetings every day with the entire team which was a bloody waste of time, before this [COVID-19] hit we run a short meeting with the entire team if you had any issues with something specific and then you solve it afterwards and split up in work groups depending on what project you worked in and had a more thorough meeting where you divide [tasks] and say what you work with during the day...It is difficult to run a good meeting, it's rare to feel that is was a good meeting, it's a lot irrelevant and people who drift of and talks about something that only affects them or irrelevant stuff that doesn't has to do with any project</p> | <p>Ett tag körde vi stand ups möten varje dag med hela teamet vilket var ett jäkla waste of time, innan detta slog till körde vi ett kort möte med teamet om man hade problem med nått specifikt och sen tar vi det efteråt och splitta upp i arbetsgrupper beroende på vilket projekt man jobbade i och hade ett mer ingående möte där man delar upp (HC) säger vad man jobbar med under dagen. det är svårt att hålla ett bra möte, sällan man känner att det var ett bra möte. Det är mycket orelevant och alltid en eller ett par som svävar ut och pratar om nåt som inte bara beror dem eller orelevanta saker som inte har med något projekt att göra</p> |
| R6 | <p>We were 18 people so it took a good while. Now the project leader brings up if something has happened and asks if everyone knows what they're doing and instead it goes like if someone doesn't knows what they're doing it's brought up</p> | <p>Vi var 18 stycken så det tog en himla tid. Nu tar projektledaren upp något som hänt och frågar om alla vet vad dem ska göra och istället blir det så att om någon inte vet vad den ska göra tas de upp. Inom grupperna så blir det enklare att man tar upp det med projekten. Det skiftar väldigt men man tar kontakt med CDn eller när produktionsledaren tycker att det är dags.</p> |
| R2 | <p>We haven't run any stand-ups and now we just do it in the project groups and talks in groups and Slack when we feel the need for it. There is "Slacks" [messages] every second minute or so</p> | <p>Nu har vi inte kört några standups och nu kör vi bara i projektgrupper och vi pratar i grupper och via slack när vi känner att det finns behov av det. Det slackas någon gång varannan minut</p> |
| R7 | <p>Don't think stand ups are bad but I think we could have solve it by talking. A good thing is to be able to bring up issues early in the day, so you don't keep it to yourself too long without getting anywhere</p> | <p>Tror inte att standups är dåligt men tror vi hade kunnat lösa det genom att prata. En bra sak är dock att kunna ta upp problem tidigt på dagen så man inte håller på för länge själv utan att komma någonstans.</p> |

| | | |
|----|--|--|
| R3 | <p>If I'm gonna be honest there is plenty who doesn't want to hear all of this and when it and when it is pretend and we don't want to pretend. You could take a heads up in smaller divisions of the team, that is more reasonable...It's however fun to see everyone's faces, we have gotten criticism that we keep to our self, especially before. like we were a company within the company, it has opened up more</p> | <p>Ska jag va helt ärlig är det många som inte vill höra allt det här och när det är låtsas så vill vi inte låtsas för detta så. Man skulle kunna ta en heads upp med mindre delar i teamet är det rimligare... Det är dock kul att se allas ansikten och vi har fått kritik att vi håller oss för oss själva. Speciellt innan var vi ett företag inom företaget. Det har öppnats upp mer.</p> |
|----|--|--|

Retrospectives

| | | |
|----|---|--|
| R1 | <p>We started with retrospectives before Christmas and talks about such things [changes/improvements]. We make it simple. You come in to the room, and say how the week has been. put a happy and a sad face [on a topic on the whiteboard] and then everyone gets to talk about what they think. It's should be implementable. Then things like "the communications is good" comes up, and that we should talk to each other, and that goes for everyone</p> | <p>Vi började med retrospektiver innan jul och pratar om sånna saker. Vi gör det enkelt. Man kommer in i rummet och säger hur veckan har varit. Sätter en glad gubbe och en ledsen och så delar man upp gruppen och att alla får prata vad de tycker. Det ska vara implementeringsbart. Då kommer det saker som att kommunikationen varit bra och att vi ska prata. Då säger vi att detta gäller för alla.</p> |
| R6 | <p>When it's made fast and and simple, it's good that it's fast. It's not about having a meeting for 3 hours, we do it in 10-15 minutes and someone gets assigned, it's like the stand-ups, if it's short and if it results in something that's great.</p> | <p>När man gör det snabbt och enkelt. så är det bra att det går snabbt. Handlar inte om att man sitter i möte 3 timmar. Vi gör det på 10-15 min och någon får det tillskrivet. Samma som stand up. Om det är kort och ger något är det väldigt bra</p> |
| R3 | <p>It feels like the timing isn't great, you accelerate things and want to prepare for the weekend to finish the week. It's stressful with [limited] time and then it gets slightly childish i feel. Maybe some who thinks that or if I say that to protect myself...Maybe you can review your</p> | <p>Det känns som att timingen inte är så bra. Man accelererar saker och vill preppa inför helgen så avslutar man veckan. Då är det stressat med tid och då blir det lite dagis över det får jag känslan över det. Kanske många som tycker det eller om jag säger det för att skydda mig själv. Man kanske kan se över en egen lista över saker som gått bra.</p> |

| | | |
|----|--|--|
| | own list of what had gone good. it doesn't feel like its gives anything | Det känns inte som att det ger någonting |
| R7 | The benefit varies from week to week. Sometimes you just go there without getting anything from it but only because you don't get anything every time it might still be worth doing. If you have deadlines you might skip that week, then you are too busy and then you get a summary on email. But it's mostly good, nice to be able to say negative things to get rid of them so it becomes something positive | Nytan varierar från vecka till vecka. Ibland är det ju bara att man går dit utan att få ut något. Bara för att man inte får ut något varje gång kan det ändå vara värt att göra. Har man deadlines kanske man skippar att gå upp på det. Då har man fullt upp och då brukar det bli en sammanfattning man får på mejl. Till större del är det bra. Skönt att få säga negativa saker också som man blir av med så att det blir något positivt |
| R4 | Well, i don't know but a little bit silly in my opinion, the thought is good, but it ends up with bits and pieces, the things which are good and bad that you discuss in groups and put into two columns on the white board, it doesn't feel needed each Friday, that's pretty often, it's hard to see the fruit of it. But most dares to say what they think and feel which I thinks is nice | Näee ja vet inte, lite småfjantigt kan jag tycka, tanken är ju god, men det blir ju sådär bits and pieces, tre saker som är bra och dåliga som man diskuterar i grupp och sätter man upp två spalter på tavlan, känns inte som man behöver ha det varje fredag, det är ganska ofta, det är svårt att se vad frukten av det. De flesta vågar säga vad de tänker och tycker vilket jag tycker är skönt. |
| R5 | We haven't taken any action on what we have come up with on those Fridays. We should do that, it becomes a matter of time....But I like to have them actually | Vi har inte tagit någon action på det vi kommit fram till på de fredagarna. Det borde vi göra. Blir en fråga om tid. Men jag gillar att ha dem ändå faktiskt. |
| R3 | We fail at following up. Usually people are so sick of it so then you're happy to just let it go. Especially if the time is limited. It would have been good to collect [what is] good and bad, but rather as before and after meetings than several meetings within [the project]. | Vi brister i uppföljning. Ofta är folk så trötta på det så är man glad att släppa det. Speciellt om det är tight med tid. Det hade varit bra att samla upp bra och dålig. Hellre före och efter-möten än massa mitt i |

Planning and visualization of progress

| | | |
|----|--|--|
| R1 | There is a rough planning that mainly I make where I look at | Det görs en grovplanering som i huvudsak jag håller i. Där jag tittar på projektprioritering |
|----|--|--|

| | | |
|----|--|---|
| | <p>project prioritization from the customer and then it is communicated to the production manager and sometimes [another manager]. The production manager handles most things. It can be so simple that I tell The production manager that we have a project that is 9000 hours and it should be ready before the holiday and then you (The production manager) need to talk about what resources are needed. If there are 4 cars then we need some sequence. I can say that the whole team is available or who can. It is a dialogue. He (The production manager) gets to talk about what he needs while I move around people and when and in what time person. My job is to make sure we have resources while The production manager says where the people are needed first on a project at large, me and the production manager sit together. It will be on an overall level and certainly not in detail. If we are going to do 8 exterior angles per car. Then we think how many people in how many weeks. What we didn't do as I tried was to is that the production manager uses Microsoft planner but then you need to be more detailed. We were not mature then and do not know if we are now. We do not run sprint planning, but rather a sprint planning free variant. We might be able to have it and I like the concept that. Now we have run weekly. We have our board with projects what is happening now and move them up and hopefully it will be clear otherwise they will be left hanging</p> | <p>från kund och sen kommuniceras den till produktionsledaren (Henrik) och ibland Pelle. Henrik sköter det mesta. Det kan va så enkelt att jag säger till Henrik att vi har ett projekt som är 9000 timmar och det ska va klart innan semestern och då behöver du (Henrik) tala om vilka resurser som behövs. Om det är 4 bilar så behöver vi någon sekvens. Jag kan säga att hela teamet är tillgängligt eller vilka som kan. Det är ju en dialog. Han (Henrik) får tala om vad han behöver medans jag flyttar runt personer och när samt i vilken tidsperson. Mitt jobb blir att se till att vi har resurser medans Henrik säger var personerna behövs....först på ett projekt i stort sitter jag och Henrik tillsammans. Det blir på en övergripande nivå och absolut inte på detalj. Om vi ska göra 8 exteriörvinklar per bil. Då tänker vi hur många personer i hur många veckor. Det vi inte gör som jag försökte var att. Henrik använder ju microsoft planner. Då behöver man vara mer detaljerad. Vi var inte mogna då och vet inte om vi är det nu. Vi kör ju ingen sprintplanering utan mer en sprintplaneringsfri variant. Vi kanske skulle kunna ha det och jag gillar konceptet att. Nu har vi kört veckovis. Vi har vår tavla med projekt vad som händer nu och flyttar upp dem och förhoppningsvis blir det klara annars får de hänga kvar.</p> |
| R2 | <p>We try to estimate how long a project will take. It's hard to predict what's going on. We try to compare with old projects. There is not a</p> | <p>Då försöker vi uppskatta hur långt tid ett projekt kommer ta. Det är svårt att förutse vad som händer. Vi försöker jämföra med gamla projekt. Det finns inte ett projekt som fungerat</p> |

| | | |
|----|--|---|
| | <p>project that worked like anything other A lot of spread sheets are made where we list and green mark when you have completed a task. We use planner, I try to use Microsoft planner and assign tasks what to do and distribute it. It is very difficult to get people to use it</p> | <p>som något annat....Det görs en massa exceler där vi listar upp och grönmarkerar när man är klar med en uppgift. Vi använder planner, jag försöker använda microsoft planner och tilldela uppgifter vad som ska göra och dela ut det. Det är väldigt svårt att få folk att använda det.</p> |
| R3 | <p>What I think is maybe that it can lean towards being outside/ top controlled in the strategic where I think the emphasis should be on the producers who actually produce. They have the knowledge....It may then be below those who are in the project planning mode may not have the resource knowledge one might need that works closely with each other. We know each other's strengths. That optimization could be done better many times over.</p> | <p>Det tycker jag kanske är att det kan luta mot att vara utanför/toppstyrt i det strategiska där jag tycker tyngdpunkten bör ligga mot producenterna som egentligen producerar. De har kunskapen...Det kanske då är under dem som sitter i projektplanerande läget kanske inte har den resurskunskapen man skulle kunna behöva som jobbar tätt in på varandra. Vi känner varandras styrkor. Den optimeringen skulle kunna göras på bättre sätt många gånger.</p> |
| R6 | <p>I think that step is very irritating because the project managers do not know how it works. They don't know what's going on in the script</p> | <p>Det där steget tror jag är väldigt enerverande för att projektledarna inte vet hur det fungerar. De vet inte vad som pågår i scripten</p> |
| R6 | <p>To me it's, I don't even see it, it feels useless and I wouldn't go and have a look at it.</p> | <p>För mig är den, jag ser den inte ens. Den känns värdelös och jag skulle inte gå och titta på den.</p> |
| R7 | <p>There's things written on it, maybe it's good for some but I don't look at it. It says I work in [a specific project] which I do today but I haven't for three weeks</p> | <p>Det står saker på den, kanske bra för vissa men jag kollar inte på den. Står att jag jobbar på [ett projekt] och det gör jag idag men har inte gjort det på 3 veckor</p> |
| R5 | <p>Once you actually stands there it might be good, can be nice to stand up and see what a person is working on and grab a coffee, but it's convenient in planner, but having it analogously can be nice too. I don't use it myself, I only see it during the stand-ups</p> | <p>När man väl står det kan den vara bra. Kan vara skönt att resa sig och se vad personen jobbar med och ta en kaffe. Men man har ju det smidigt i planner. Men det kan vara skönt att ha det analogt också. Använder inte den själv. Ser bara på daily standups</p> |
| R3 | <p>I don't know, I don't put much energy there. It's probably to give</p> | <p>Jag vet inte. Läger inte så mycket energi där.</p> |

| | | |
|----|--|--|
| | project leaders an oversight, someone might think its good | Det är väl kanske för att få översikt för projektledare. Någon kanske tycket det är käckt. |
| R4 | <p>I don't really look at it, there's someone who keeps track of it, and if it works for them that's great for them. It doesn't really work for me, I'd like a visual system, like the one with the notes, but where you can go in and see all projects and who works there and see progress and much more visibility, like see: 'that person has done this' and what problems and solutions have occurred, it needs to be seachable, and then maybe solve it [a similar problem] in another project...The board is a bit of who works where and is very general, but I understand that it's a full time job to keep track of for one person, but it would be good, to have a headline with lighting as well and then you can break down the tasks which should be completed for everything that needs to be done in lighting, and then you can see what's done and how the progress is going.</p> | <p>Jag kollar inte så mycket på den, det är någon som har koll på den, om det funkar för den så är det väl bra för den/den, funkar inte så bra för mig, jag vill ha ett system som visar allt visuellt, så som med lapparna, men som man kan gå in i och se alla proj och vilka som jobbar där och se progress och se mycket mer visuellt, se den personen har gjort det vilka problem och lösningar som uppstått, behöver vara sökbar, och kanske lösa det i något annat projekt. tavlan är lite vilka som jobbar var och väldigt allmän. men förstår ju att det är ett heltidsjobb att rodda med för en person, men det vore bra att ha en headline med ljus också kan man gå ner och gräva i deluppgifterna som ska göras för allt som ska göras i ljus, också kan man gå mer och se vad som är gjort och hur man ligger till</p> |

A.2 Interview Questions

Introduktion:

- Kan du beskriva dina arbetsområden/uppgifter?
- Vilka processteg måste vara avklarade för att kunna påbörja kommande?
- Vad behöver du vara klar med för att du ska lämna vidare?
- Vad fungerar bra?
- Vad fungerar mindre bra?
- Finns det problem som ofta uppstår i arbetet?
- Hur långt tid tar dina arbetsuppgifter?
- Hur långt tid tar det från att du får en uppgift tills att du kan lämna vidare den?
- Har ni några tydliga roller eller ansvar i teamet?
- Hur får du reda på vad kunden efterfrågar?
- Hur anpassar du ditt arbete till nya eller ändrade krav?
- Är det vanligt att liknande uppgifter tar olika lång tid?
- Vad beror det isåfall på?
- Finns det skillnader i kvalitet på materialet som ni arbetar med?
- Hur skulle arbetet fungera i en utopisk värld?

Organisation

- Hur ofta har ni möten?
- Har du någon avstämning på utfört arbete?
- Har du möjlighet att utvärdera ditt arbete?
- Hur går dessa till?
- Vad har ni för kommunikationskanaler i teamet?
- Hur dokumenterar du ditt arbete?
- Hjälps ni åt i teamet? Isåfall hur gör ni det?

Övrigt

- Hur får du reda på kunden efterfrågar?
- Vad tycker du om daily stand-ups?
- Vad tycker du om projekt-tavlan?
- Vad tycker du om retrospectives?

Frågeformulär Team leaders

Verifiera/gå igenom process

- Kan du beskriva de olika processtegen?
- Finns det processteg som är oberoende av andra?
- Vad finns det för styrkor i flödet just nu, vad funkar bra?
- Vilka ändringar har ni gjort?
- Vad fungerar mindre bra?
- Finns det processer där det ofta uppstår problem/förseningar alt. att de går betydligt fortare än väntat?
- Hur lång tid tar det från påbörjad produktion tills första leverans till kunden och vad består denna då av?

Tid för look själva?

Tid för look gemensamt?

Hur avgör man hur långt tid det tar?

- När får man ut något som är relevant för kunden?
- Hur fungerar relationen med kunden?
- Vem äger olika processer och har ansvar för att de blir utförda?
- Har ni några tydliga rollfördelningar?

Processer där fel ofta uppstår

- Vad är era vanligast fel eller problem?
- Hur löser ni dem idag?
- Hur skulle det ha fungerat i en utopisk värld?
- Har ni gjort några andra förändringar av ert arbetssätt nyligen?
- Beror det på erfarenhet och vana eller att gamla fungerade bättre?

Fel som ofta uppstår mellan processer

- Finns det processer som tar väldigt olika lång tid?
- Hur gör ni idag för att jämnar ut detta?
- Finns det stora skillnader i "kvalitet" som påverkar kommande processer?

Om agilt

- Hur ofta har ni möten? - stand ups, vanliga möten.
- Har ni avstämning på vad som gjorts?

- Hur går dessa till?
 - Vad har ni för andra kommunikationskanaler, ex om alla i teamet behöver veta något eller om en person har frågor till någon annan?
 - På vilka intervall arbetar ni?
 - Hur dokumenterar ni?
-
- Hur tar ni reda på vad det är kunden efterfrågar?
 - Vem är idag ansvarig för att tolka vad kunden vill ha?
 - Hur anpassar ni er till nya eller ändrade krav?
 - Hur arbetar ni i lag, är det mest individuellt arbete och i vilken utsträckning hjälper lagmedlemmar varandra med arbetet?
 - Finns det utrymme att hjälpa varandra och hoppa in, något som bara en kan?



CHALMERS