Motivating Drivers to Use Coaching Services

Using Service Design and Gamification to Increase User Motivation

Emma Sundberg & Linnea Utterheim

Tutor: Tim Overkamp
Examiner: Stefan Holmlid
Copyright

The publishers will keep this document online on the Internet – or its possible replacement – for a period of 25 years starting from the date of publication barring exceptional circumstances.

The online availability of the document implies permanent permission for anyone to read, to download, or to print out single copies for his/her own use and to use it unchanged for non-commercial research and educational purpose. Subsequent transfers of copyright cannot revoke this permission. All other uses of the document are conditional upon the consent of the copyright owner. The publishers have taken technical and administrative measures to assure authenticity, security and accessibility.

According to intellectual property law, the authors have the right to be mentioned when their work is accessed as described above and to be protected against infringement.

For additional information about the Linköping University Electronic Press and its procedures for publication and for assurance of document integrity, please refer to its www home page: http://www.ep.liu.se/.

© Emma Sundberg & Linnea Utterheim
Abstract

How can coaching services encourage user engagement? The objective of this thesis has been to conduct research with a service design approach of what changes can be made to a service to further engage and motivate users. The already existing service provided by Scania called Driver Coaching is used as a case study. The thesis contributes to research by exploring how coaching services can implement gamification aspects in its customer journey.

Using said case study as an example, user studies were conducted and resulted in an extensive list of insights and user needs. A gamification framework called Octalysis was used to locate what aspects of the service that could be changed in order to increase user motivation. The user needs and the lacking core drives in the current Octalysis were connected during the ideation phase. Connecting the gamification theory with the service design case study, a design proposal took form. In this case study, the design proposal is a modular concept with five different components that can be implemented in the service on their own or all together. Even though this design proposal is specific to the case study, the process of using the gamification theory and methods could be applied to other cases.

Keywords: service design, design for motivation, gamification, coaching
Acknowledgments

The authors would first and foremost like to thank our tutors at Scania, Sofia Kjellqvist and Jonatan Lidström for their support. Without you, writing this thesis at Scania would not have been possible. At Scania, we were welcomed in the very best way by the Driver Services tribe at Connected Services and Solutions. Thank you for answering our endless questions, making us feel part of the team and providing your opinions on our concepts!

Through Scania, we got the opportunity to make user studies. We are very thankful to the drivers and coaches that let us ride along in their trucks, answered our questions, participated in interviews and workshops and shared with us their troubles, hopes, and opinions that this report is based on. Thank you!

Our most sincere thank you to our tutor at Linköping University, Tim Overkamp, for your cheerful and extensive feedback. We are very grateful for all the time you have spent on the phone with us and for answering all the novel-length emails we have sent you with your equally long emails!

We would also like to thank our examiner at Linköping University, Stefan Holmlid, for your excitement about our project and the valuable input you have given us!

Last, but not least, we want to thank our friends and opponents, Hanna Lindkvist and Regina Paet for their valuable feedback on our report. Thank you for telling us what we need to hear in your kind but spot-on comments!

Södertälje in May 2019

Emma Sundberg & Linnea Utterheim
# Table of Contents

1 Introduction.................................................................................................................1  
1.1 Background..............................................................................................................1  
1.2 Aim and Objective ...................................................................................................2  
1.3 Research Questions .................................................................................................3  
1.4 Delimitations ...........................................................................................................3  
1.5 Report Outline .........................................................................................................3  

2 Theory ............................................................................................................................4  
2.1 Design for Motivation..............................................................................................4  
2.2 Intrinsic and Extrinsic Motivation ..........................................................................4  
2.3 Gamification ............................................................................................................5  
2.4 Game Design Elements .........................................................................................5  
2.5 Core Drives and Octalysis .....................................................................................6  
2.6 Service Design for Motivation ..............................................................................8  

3 Method ...........................................................................................................................10  
3.1 Overall Process ......................................................................................................10  
3.2 Pre-study ................................................................................................................11  
3.3 Data Collection ......................................................................................................12  
3.4 Data Analysis ........................................................................................................14  
3.5 Ideation ..................................................................................................................17  

4 Results ..........................................................................................................................19  
4.1 Personas ..................................................................................................................19  
4.2 Scenarios & Storyboards As-Is ............................................................................20  
4.3 Insights ...................................................................................................................22  
4.4 Ideas from the Users ..............................................................................................24  
4.5 User Needs .............................................................................................................24  
4.6 Octalysis As-Is ......................................................................................................26  
4.7 Early Concepts .......................................................................................................28  
4.8 Design Proposal .....................................................................................................30  
4.9 Scenarios & Storyboards To-Be ..........................................................................33  
4.10 Octalysis To-Be ....................................................................................................37  

5 Discussion .....................................................................................................................42  
5.1 Method Discussion ..................................................................................................42  
5.2 Results Discussion ..................................................................................................44  

6 Conclusions ....................................................................................................................49  
6.1 Consequences for the User ....................................................................................51  
6.2 Future Studies .........................................................................................................51  

References .......................................................................................................................52  
Appendix A – Observation form ....................................................................................55  
Appendix B – Interview questions ................................................................................56
Figures

Figure 1 – An interpretation of the Driver Coaching service by Rosenqvist & Wikström (2018). Used with the authors’ permission. ................................................................. 2
Figure 2 – The relationship between dynamics, mechanics, and components, an interpretation of the article by Hunter and Werbach (2015). ................................................................. 5
Figure 3 – The Octalysis gamification framework (Chou, 2019a). Used with the author Yu-Kai Chou’s permission. ........................................................................................................... 7
Figure 4 – The iconicity-time graph adapted by Diana et al. (2009), mapping differences in service design tools. ........................................................................................................ 8
Figure 5 – Overall process of the thesis on a case study level, as well as the corresponding research process. ........................................................................................................ 10
Figure 6 – The process of generative design research as described by Sanders and Stappers (2012). ......................................................................................................................... 10
Figure 7 – The personas created with the drivers and coach at the workshop. .......................... 14
Figure 8 – Mind map with insights and themes from the observations. .................................................................................................................. 15
Figure 9 – Screenshot of the online tool where an Octalysis can be created (Chou, 2019b). Used with the author Yu-Kai Chou’s permission. ........................................................................ 16
Figure 10 – Illustration of insights and conclusions from previous phases being distilled in the ideation phase. ....................................................................................................... 17
Figure 11 – The stages of the ideation phase illustrated, moving from idea generation to design proposal. ............................................................................................................. 17
Figure 12 – All the ideas generated posted on a wall for the joint brainstorming session. ....... 18
Figure 13 – The digitalized and translated version of the persona Magnus. Avatar designed by Freepik (2017)............................................................................................................. 19
Figure 14 – The digitalized and translated version of the persona Patrick. Avatar designed by Freepik (2017)............................................................................................................. 20
Figure 15 – Storyboard 1: Magnus in the current service. .......................................................... 21
Figure 16 – Storyboard 2: Patrick in the current service. .......................................................... 22
Figure 17 – The Octalysis made for Driver Coaching. ................................................................ 26
Figure 18 – A sketch of one new aspect to bring to the restructure called "Sliders" and a sketch of the customer journey of the restructured service. .............................................. 28
Figure 19 – A sketch of a customer journey with a focus on collecting points. ..................... 28
Figure 20 – A sketch of a customer journey with ways to give the driver "a pat on the back" and a sketch for merchandise as a reward. ........................................................................... 28
Figure 21 – A sketch of a customer journey with ways to "raise the roof" for already motivated drivers. ................................................................................................................ 29
Figure 22 – A sketch of a customer journey where setting goals and making progress are in focus. ......................................................................................................................... 29
Figure 23 – A sketch of a customer journey with cooperation between drivers................... 29
Figure 24 – A visualisation of the Sliders tool ........................................................................ 31
Figure 25 – A visualization of the A-driver merchandise. ....................................................... 31
Figure 26 – A visualization of milestones, in this case setting the milestone of receiving a stronger A grade ........................................................................................................ 32
Figure 27 – A visualization of automatic appreciation. ............................................................. 32
Figure 28 – A visualization of the email when a user reaches Expert Fleet. ......................... 33
Figure 29 – Storyboard 3: Magnus in the new service. ............................................................ 35
Figure 30 – Storyboard 4: Patrick in the new service..........................................................37
Figure 31 – The Octalysis for the To-Be service, in comparison to the As-Is service. ...............38
Figure 32 – Illustration of the left brain – right brain difference in ratings between the As-Is and To-Be Octalysis.........................................................................................................................40
Figure 33 – Illustration of the white hat – black hat difference in ratings between the As-Is and To-Be Octalysis............................................................................................................................40

Tables

Table 1 – Meaning units, condensed meaning units, and codes. An example by Graneheim and Lundman (2004). ........................................................................................................................................13
Table 2 – An example of the content analysis performed by the researchers..........................15
Table 3 – User needs that were identified in the analysis. ......................................................24
Table 4 – Difference in ratings between the different groupings of the As-Is and the To-Be Octalysis. ................................................................................................................................................41
Definitions

- As-Is – A visualization that presents the current state.
- Gamification – The use of game design elements in non-game contexts.
- Octalysis – A gamification framework developed by Chou (2019a).
- Pain point – The customers’ perceived problem with a service or product.
- To-Be – A visualization that presents a possible future state.
- Transport company – A company that operates like a hauler.
Introduction

This chapter aims to give the reader an understanding of why the thesis is conducted and what it strives to achieve. The chapter gives a short introduction to the background, aim, objective, research questions, delimitations, and outline of the report.

Services have grown to be a big part of our lives and our economy. Motivating users to participate in these services is a challenge companies need to face, either with the sole purpose of making money or with a higher purpose where users engaging in a service is of benefit to the users or the world around them. An example of the latter is Scania’s Driver Coaching service. In a world where transportation of products is a necessity for us to keep the living standards we have grown used to, transporting goods in an environmentally friendly way is of great importance. Scania’s Driver Coaching service lowers the environmental impact of transportation, but for it to work the drivers need to be motivated to participate in the service. The case study of Scania’s Driver Coaching service is in focus in this thesis, where Scania is a cooperation partner.

1.1 Background

On Scania’s website, it is explained that Driver Coaching is a service that helps drivers maintain a good level of driving in several different aspects (Scania, 2018). They accomplish this, according to their website, by tracking the drivers while they drive, and then they receive feedback in the form of a report and phone calls by a coach. The coach suggests ideas for how they can improve their driving (Scania, 2018).

This thesis builds on two earlier master theses analyzing the Driver Coaching service, one thesis conducted in 2017 and another in 2018. In the master thesis analyzing the service, by Rosenqvist & Wikström (2018), the service was observed and studied from the coaches’ point of view. In Figure 1 below, an interpretation by Rosenqvist & Wikström (2018) of the Driver Coaching service is illustrated. The red exclamation point illustrates the possibility of an unexpected ending of the coaching session. This happens when the coach is unable to reach the driver, and therefore must move on to another driver. What happens is that the driver does not answer the coach’s call. The red exclamation point is the starting point of this thesis.
Rosenqvist & Wikström (2018) also concluded a list of pain points in the service. One of them is ‘Time is spent on preparing reports and calls that are neither read nor answered’. This is the main pain point that, together with Scania’s experience of the service, lead to the hypothesis that the drivers are not motivated to participate in the service. Since a major obstacle for the service to work effectively is unmotivated drivers, looking at theories that could potentially help motivate drivers to take part in the service is of the highest significance for this thesis.

Gamification is a concept known to raise motivation and user engagement (Hunter and Werbach, 2013; Chou, 2015). This thesis proceeds with the hypothesis that Scania’s Driver Coaching could benefit from implementing game design elements.

1.2 Aim and Objective
There are two parallel aims of this thesis. The first aim is to create an alternative service design that motivates users to a higher extent and the second aim is to investigate how game design elements can be implemented in a service to raise motivation. The first aim will be fulfilled by conducting a case study of Scania’s Driver Coaching service and the second aim will be fulfilled by literature studies, finding methods and applying them on the case study.

The thesis objective is to conduct research with a service design approach of what changes can be made to a service to further engage and motivate users. The thesis contributes to research by exploring how coaching services can implement gamification aspects in its customer journey. The outcome of the thesis is a visualized service design proposal where concepts are presented. The goal with the design proposal is to help resolve pain points detected in the coaching service and contribute to motivating the users.
1.3 Research Questions
RQ1 – What motivates users to take part in a coaching service?
This question will be answered by observing, interviewing and conducting a workshop with truck drivers using the Driver Coaching service provided by Scania.

RQ2 – How can the Octalysis framework be used to find areas of improvement in a coaching service?
This question will be answered by connecting the theory around the Octalysis framework and the case study of the Driver Coaching service.

RQ3 – Which game design elements can be implemented in a coaching service?
To answer this question, a concept generation and evaluation will take place. The Driver Coaching service will serve as an example.

1.4 Delimitations
One of the delimitations is that the Driver Coaching service will mainly be examined from the drivers’ point of view. This is because the Driver Coaching service has already been examined by Rosenqvist & Wikström (2018) from the coaches’ point of view. Another delimitation is that all data collection will be conducted in Sweden. Drivers who are currently being coached and operate in Sweden will be the primary users studied in this thesis.

The thesis will limit the actors considered in the service system to coaches and drivers. The interaction and relationship between coaches and drivers are what is in focus within the service system. There are known pain points regarding the grading system within the service, however, changing the grading system is out of scope and will not be dealt with in this thesis. The presented design proposal will assume a fully functional grading system.

The target reader of this thesis is a fellow thesis worker within a similar field, for example within the field motivational design or service design. Some previous knowledge of these fields will be expected of the reader. The terminology used will be meditated on and explained where the authors deem it necessary for context.

1.5 Report Outline
To make the structure of this report clear, and to make the reading easier, here is an overview of the chapters and their content summarized. The report is divided into six chapters:

1. Introduction – Explains why the thesis is conducted and what it strives to achieve.
2. Theory – Describes the scientific concepts and theories that the thesis is based on.
3. Method – Describes the methods used during the thesis work and explains the process.
4. Results – Presents and shows the results of the thesis work.
5. Discussion – Analyzes, reflects on and discusses the method used and given results.
6. Conclusions – The research questions are answered in this chapter, conclusions are presented and motivated, and finally, suggestions for future studies are made.
2 Theory

This chapter describes the scientific concepts and theories that the thesis is based on. Firstly, the broad subject of design for motivation is explored, with intrinsic and extrinsic motivation in focus. After that, gamification principles such as dynamics, mechanics, and components are explained. The theoretical framework Octalysis is then introduced as a way of connecting the motivational theory to the gamification theory. Finally, the theory narrows down to what the authors call service design for motivation, which aims to connect service design methodology to gamification principles.

2.1 Design for Motivation

Bisset & Lockton (2010) explains that while designing for motivation, the balance between restricting the user and allowing for autonomy is important. Too much restriction or too much autonomy leads to a decrease in motivation in the user. Bisset & Lockton (2010) also writes about the pinball effect, where the user is directed towards the desired behavior, this could be restricting the ways a nurse could assemble medical supplies to assure the correct way is the only way it can be done, making it safer and faster for the nurse and the patient. They state that it is not always necessary for the user to be educated about why they cannot or have to do a certain thing, sometimes it is enough just to design in a way that guides the user to the correct behavior. Another example from Bisset & Lockton (2010) is disabling the fast-forward button on a movie while the trailers are playing, this ensures they cannot be skipped. These very different examples give different responses from the user and affect the users feeling of autonomy in different ways, to different degrees (Bisset and Lockton, 2010).

When reading about motivation there is also the classic motivational theory that becomes relevant for discussing the design for motivation. There is Maslow’s famous hierarchy of needs, were the bottom needs have to be fulfilled for a person to be able to focus on the higher needs (McLeod, 2018). According to McLeod (2018), the needs from bottom to top are physiological, safety, love and belonging, esteem, and self-actualization.

2.2 Intrinsic and Extrinsic Motivation

Krippendorff (2004) writes about intrinsic motivation, which is described as the motivation that comes from within, the motivation for someone to do something just because they want to, it is about engaging because it is fun and enjoyable such as skiing or painting. Extrinsic motivation, on the other hand, is the motivation to do something because it will result in a reward, or to avoid punishment (Krippendorff, 2004). Some activities that are seemingly pointless still has a strong appeal to a lot of people, states Krippendorff (2004), examples of these are skiing and painting. This is because of how strong intrinsic motivation is in these activities (Krippendorff, 2004).

In the book For the win by Hunter & Werbach (2013), the authors warn about how gamification with extend motivation rewards in mind could result in less instinct motivation over time since the extrinsic motivation overtakes the intrinsic motivation. This is what happens if children are constantly rewarded for reading books and after some time, they start expecting the reward and their motivation to read simply for the sake of reading is gone (Hunter and Werbach, 2013).
2.3 Gamification
Gamification is a concept with several definitions. In this thesis the following definition is used: *Gamification is the use of game design elements in non-game contexts*. This definition is the most commonly used according to Murray et al. (2018).

According to Chou (2015), implementing gamification can be a great motivator for many people. When studying someone involved in a game, that someone might be so engaged in excelling at a game that they are willing to wake up at inconvenient times to do tedious tasks that will get them to the next level. This high level of motivation is not necessarily as common in other aspects of that same person’s life. Even though exercising, studying and cleaning could be compared to these tedious but rewarding tasks they are not as utterly engaging as a game could be (Chou, 2015).

In some gamified systems, it is obvious that it is a game, while in some gamified systems the user feels motivated but does not make the connection to games. This is called explicit and implicit gamification. An example of implicit gamification could be a progress bar to show how far a user is in, for an example, completing a profile on a social network platform (Chou, 2015).

2.4 Game Design Elements
Hunter & Werbach (2013) describe in their book how game design elements can be divided into dynamics, mechanics, and components. Dynamics are the big picture aspects like emotions and progression. Mechanics are things that engage the user like challenges and feedback. Lastly, components are surface level things like badges and leaderboards. Hunter & Werbach (2013) emphasize that it is important to have high-level goals with the gamification before getting into the details with specific components. The relationship between these game design elements can be seen in Figure 2 below.

![Figure 2 – The relationship between dynamics, mechanics, and components, an interpretation of the article by Hunter and Werbach (2015).](image-url)
The five dynamics Hunter and Werbach (2015, page 78) write about are:

- **Constraints** – You cannot always win.
- **Emotions** – Games are powerful and engaging because it engages emotions.
- **Narratives** – A good gamified experience is coherent, everything makes sense on its own terms, there is logic.
- **Progression** – How the game changes, how the player evolves.
- **Relationships** – Games are social, communities are appealing to players.

Mechanics are according to Hunter and Werbach (2015) things that engage the user to take part. The ten mechanics mentioned by Hunter and Werbach (2015, page 79) are:

- **Challenges** – Tasks that require a certain amount of effort to solve.
- **Chance** – The game should not be frustrating but still have an element of chance. In poker, for example, the cards are shuffled.
- **Competition** – Somebody wins, and somebody loses.
- **Cooperation** – People working together within the game. Competition and cooperation are not mutually exclusive, good games can contain both.
- **Feedback** – The users receive information from the game on how they are doing.
- **Resource acquisition** – Exchanging items could be a part of the game itself.
- **Rewards** – The users should get a benefit from completing an action.
- **Transactions** – Marketplace in game.
- **Turns** – Taking turns means that not everyone needs to take part all the time.
- **Win-states** – Winning the whole game. Not so common since most games want you to keep playing.

The focus of this thesis is on the higher levels of dynamics and mechanics. There seems to be a consensus that the mere act of implementing components without thought, such as simply calling a task a quest or giving points that are of no use, does not raise motivation (Hunter & Werbach 2013; Yu-Kai Chou 2015). The full list of components will therefore not be presented.

### 2.5 Core Drives and Octalysis

According to Chou (2015), there are eight core drives of gamification that contribute to motivation. The core drives and what they mean summarized according to Chou (2019a) are:

1. **Epic Meaning & Calling**
   The user’s belief that they are doing something greater than themselves.

2. **Development & Accomplishment**
   The internal drive of making progress, developing skills and overcoming challenges.

3. **Empowerment of Creativity & Feedback**
   The users engage in a creative process where they continuously receive feedback.

4. **Ownership & Possession**
   The drive where users are motivated because they feel like they own something.

5. **Social Influence & Relatedness**
   The social elements that drive users, like acceptance, companionship, or competition.

6. **Scarcity & Impatience**
   The drive of the users wanting something simply because they cannot have it.

7. **Unpredictability & Curiosity**
   The users wanting to find out what will happen next.
8. Loss & Avoidance
The users being motivated because otherwise, something negative will happen.

Chou (2015) visualizes these drives in an octagonal shape that he calls the Octalysis. An overview of the Octalysis gamification framework can be seen in Figure 3 below. Each side corresponds to a core drive and the size of that side depends on how strong of a presence that core drive has in that system or game.

Figure 3 – The Octalysis gamification framework (Chou, 2019a). Used with the author Yu-Kai Chou’s permission.

Further evaluation of a service or game can be made by analyzing if the system is lacking in core drives on a specific side. Left and right correspond to the left and right halves of the brain. Chou (2015) notes that it is not meant to be viewed as something anatomically correct but rather a description of a more creative way to think compared to a more analytical way. Chou (2015) makes a connection between the left core drive and extrinsic motivation, the same logic applies to the right brain core drives and intrinsic motivation.

The Octalysis, according to Chou (2015), can also be divided into top and bottom halves which corresponds to something Chou (2015) calls white hat and black hat core drives. The white hat gamification core drives are more positive than the black hat gamification core drives. Addictive games such as gambling often use strong black hat motivating core drives (Chou, 2015). According to Chou (2015), an Octalysis can be created for any product or service. This is done by rating each of the eight core drives on a scale from zero to ten. The ratings should be given according to a scale where zero means that the core drive does not exist as a
motivator within the experience, and ten means that it is impossible to improve the core drive further (Chou, 2015).

In his book, Chou gives examples of how to raise or implement a side of the Octalysis by implementing game techniques known to affect that core drive (Chou, 2015). For example, to raise Development & Accomplishment, techniques such as progress bars or achievements symbols can be implemented (Chou, 2015).

2.6 Service Design for Motivation

According to Moritz (2005), a service is performed, and not produced like a product. A product is also tangible, while a service is intangible in comparison (Moritz, 2005). This needs to be considered when developing a service. Polaine et al. (2013) write about the terms co-production and co-creation. According to Polaine et al. (2013) service design is about designing with people and not for them.

Diana et al. (2009) state that identifying and using the parameters time and iconicity allows for visualizing and comprehending the design of a service. Following the theory of Diana et al. (2009), better comprehension and visualization of a service is possible if tools from multiple quadrants of the iconicity-time graph shown in Figure 4 below are chosen and used.

![Figure 4 – The iconicity-time graph adapted by Diana et al. (2009), mapping differences in service design tools.](image)

An example of each of the quadrants of the iconicity-time graph are:

- **Maps** – Service Blueprint, which describes the nature and characteristics of the service interaction, by documenting all touchpoints and back-stage processes (Tassi, 2009a).
- **Flows** – Customer Journey, describes the journey of the user by representing different touchpoints step by step (Tassi, 2009b).
• Images – Mood board, a composition of pictures that set an atmosphere (Tassi, 2009c).
• Narratives – Storyboard, which shows the manifestation of every touchpoint through a series of drawings/pictures, put together in a narrative sequence (Tassi, 2009d).

The end goal of service design is the user’s experience (van Boeijen et al., 2014). In the case study that is Scania’s Driver Coaching service, the users of the service are using it as a part of their workday. According to Groeneveld (2018), it is important to feel appreciated at work in order to become motivated to perform. Contributing to something that benefits the public and meeting those who benefit from this has a positive effect on motivation (Bellé, 2013).

There have been previous studies on how gamification could affect driving. In a service developed in Australia, young drivers used a gamified mobile application to practice their driving (Fitz-Walter et al., 2017). An interesting part of the journal article for this study is that in the experiment some of the participants cheated. This happened in one case because the participant wanted to see if it was possible, but several participants reported either cheating or considering to cheat simply to acquire better results (Fitz-Walter et al., 2017). Another study made on drivers motivation for eco-driving found that having a personal goal was beneficial for motivating the drivers (Stillwater and Kurani, 2013). Regarding eco-driving, there is also an interesting article called The Design of Eco-Feedback Technology, where the authors discuss how long a service made for teaching the user about an eco-friendly habit is useful. They wonder whether or not a service becomes less important as it fulfills its purpose (Froehlich et al., 2010).
3 Method

This chapter describes the approach and process used to conduct the thesis work. What phases the work has been divided into, what methods have been used, and in which order.

3.1 Overall Process

The overall process that this thesis has followed can be seen in Figure 5 below.

![Diagram of process](image)

**Figure 5 – Overall process of the thesis on a case study level, as well as the corresponding research process.**

The process has been divided into five different phases. All the five phases are further explained in the sections below, detailing how the thesis work has been executed. In summary, the pre-study and data collection phases were used to gather information about the current service, investigating what previous work had been done and what information was available about the users of the service. During the data collection phase, three different user studies were conducted as well. The aggregated collected data were then analyzed and used as a starting point for the ideation phase. Finally, the ideas and concepts developed in the ideation phase were evaluated and boiled down to a final design proposal that was visualized to further explain how the service can be modified to increase user motivation.

Sanders and Stappers (2012) write in their book *Convivial Toolbox* about the process of generative design. In Figure 6 below, the process is shown, the brief of the project takes the project into the cycle. After iterations, the results come from the conceptualization phase. Examples of the phases are Gathering field notes, photos and transcripts. Communication in the form of reports, workshop, presentations, and personas. Conceptualization in the shape of stories, concepts and decisions and Analysis by themes, patterns and selected quotes (Sanders and Stappers, 2012).

![Diagram of generative design process](image)

**Figure 6 – The process of generative design research as described by Sanders and Stappers (2012).**
3.2 Pre-study
During the pre-study, information and data from previous master theses, employees at Scania, and literature were gathered. The literature provided the foundation of chapter 2 Theory. Scania also provided an extensive library of user experience material, reports, and earlier documentation of the service. This informed the authors of what previous work had been done, which will be briefly summarized in the following paragraphs.

Scania has developed a toolkit that comes with the Driver Coaching service, which includes an app for the drivers called Fleet Application (FA), a coaching tool called CT for the coaches, and a portal called FMP for the transport companies. All the actors have their corresponding tool to keep up the service and perform better. All Scania trucks are nowadays connected and send a lot of data on how the truck is performing back to Scania. This data is being used by Scania for determining how the driver of the truck is performing, and they visualize this by having a grading system. Scania’s grading system is a scale, E to A where E is the lowest grade and A is the best. The drivers are graded on the following six aspects:

- Speeding
- Idling
- Coasting
- Hill driving
- Cruise control
- Anticipation

However, if cruise control is activated for most of the drive, the grade for hill driving is removed since the cruise control automatically handles the hill driving if it is on. In that case, the driver gets a grade on the remaining five aspects. Central to all this is the “fuel consumption curve”, this is a curve that shows the fuel consumption. This naturally goes up during the colder months. Scania does not want the drivers to focus too much on the fuel curve since this can be misleading since it is connected to so many variables such as season, load and type of road driven. There is a competition at Scania that drivers can try out to compete in. This is called the Driver Competition and the winning prize is a truck.

The drivers’ needs previously discovered from the 2017 study by Hantosi Albertsson (no date) are:

- Getting to be a knowledge resource in their social circle.
- Learning their new vehicle upon delivery.
- Feeling appreciated.
- Getting well-timed positive feedback.
- Understanding the financial value they can contribute.
- Getting to shine in front of their colleagues.
- Clear(er) goals to work towards.
- Getting to shine in their own social network.

An in-house initiative at Scania called The Game was also investigated. The Game’s vision is that the drivers are the transport business’ most valuable asset, today and tomorrow. Their mission is to assure that drivers feel and are perceived as increasingly more valuable to both transport suppliers and buyers. They do this by providing sustainable digital services that through gamification principles engage drivers, so they continuously self-improve.
3.3 Data Collection
To ensure that the needs of the current users of the Driver Coaching service were considered when the development of the service was taking place, several kinds of data collection from users was conducted. The three different user studies utilized were: observations, interviews and a workshop, conducted in that order. In total, the user studies included 13 drivers, of which two also worked as coaches. This meant that the coaches’ perspective was still represented. The drivers had 9 to 40 years of driving experience and had been coached for one to five years.

3.3.1 Observations
The first user study conducted was observations of truck drivers. During one full workday, from 9 am to 7 pm, a total of four drivers were observed while they were driving the distance Södertälje to Jönköping. The authors of the report sat next to the drivers in the truck for four to five hours at a time. An observation form was prepared beforehand which made it possible to also conduct semi-structured interviews with the drivers during the observation. The observation form can be seen in Appendix A – Observation form. The data collected was later used to make a more structured and extensive question form for the telephone interviews, and to gain a general understanding of what a workday is like as a truck driver.

According to Millen (2000), it is valuable to have more than one researcher in the field at the same time. There is a chance that having more than one researcher may disrupt the usual flow of the setting, but the benefits outweigh this chance according to Millen (2000). Having several researchers in the field at the same time means that they can split up and observe different groups, as well as observing the same events but providing multiple views of it. This can provide a deeper understanding of the situation according to Millen (2000).

Another aspect to have in mind during the field research according to Millen (2000), is which type of informants are selected and used. Liminal informants are fringe members of a group that can move about more freely in the group. Corporate informants, on the other hand, are employed by the researcher’s own organization and carry lots of field experience and knowledge about how work is really being carried out (Millen, 2000).

One way to maximize the learnings from a field study is to utilize participant observation, which is when the researcher participates in the activity of interest (Millen, 2000). This technique allows for a richer understanding since it comes from personal experience, and could according to Millen (2000) be the best way to understand the issues in the activities.

3.3.2 Interviews
The second user study conducted was phone interviews with drivers. Eight drivers were interviewed in total. The drivers’ numbers were given from their coach and a text was sent to each driver asking for a suitable time for an interview. At the decided time the drivers were called, and a series of questions were asked. The interview questions can be seen in Appendix B – Interview questions. The interviews were recorded with permission from the participants and later transcribed by the authors. The interviews started off from the pre-decided questions but when the drivers said something interesting this was followed up on.

The data obtained from interviews is of a qualitative nature, which means the data need to be interpreted and cannot be compiled straight away as clear numbers. A method that can be
used to analyze this type of data is qualitative content analysis (Graneheim and Lundman, 2004). However, an important aspect to keep in mind according to Graneheim & Lundman (2004) is that a text always involves multiple meanings and can be interpreted in different ways. Therefore, establishing trustworthiness in one’s findings when using qualitative content analysis is key (Graneheim and Lundman, 2004).

Qualitative content analysis consists of taking a meaning unit from the protocol of the study, then condensing this unit to its shortest form, and then coding the different units so that a theme emerges. An example of qualitative content analysis by Graneheim & Lundman (2004) can be seen in Table 1 below.

Table 1 – Meaning units, condensed meaning units, and codes. An example by Graneheim and Lundman (2004).

<table>
<thead>
<tr>
<th>Meaning unit</th>
<th>Condensed meaning unit</th>
<th>Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>there is a curious feeling in the head in some way, empty in some way</td>
<td>curious feeling of emptiness in the head</td>
<td>emptiness in the head</td>
</tr>
<tr>
<td>it is more unpredictable so to say, you can never be sure about anything</td>
<td>An unpredictable and unsure situation</td>
<td>uncertainty</td>
</tr>
</tbody>
</table>

3.3.3 Workshop
The last part of the data collection was a workshop meeting with two drivers and one coach. The coach reached out to the transport companies that had drivers currently being coached and helped set up the logistics of arranging the meeting. The workshop meeting was scheduled for one hour in the late afternoon, and included a warm-up exercise, creating personas, and a semi-structured group interview. The workshop was held at a location the drivers were used to. According to Sanders and Stappers (2016), it is beneficial to conduct the workshop in a place the participants are familiar to, to come to them instead of the other way around.

The warm-up exercise was to make a mood board illustrating the important things in the life of a truck driver. Sanders & Stappers (2012) explain in their book Convivial Toolbox that during a workshop it is a good idea to have time for introduction and a warm-up exercise such as making a collage. The participants got to choose pictures from a big selection that the authors had prepared beforehand. The available pictures were chosen from things that the observations and interviews hinted about being important for drivers. Some pictures of games were chosen to see if some opinions on gamification were discovered. A few pictures were chosen simply to have a variation of pictures and to try to accommodate the fact that there could be motivators that had yet to be discovered. These were pictures of such things as animals, children, trucks, hotels, beaches, and people doing activities outdoors.

Outlines for two personas were prepared before the workshop. The outlines included a cartoon picture of a man, a name and headers that said “Goals”, “Frustrations” and “Needs”. During the workshop session, an example persona not related to driving was shown to give the participants an idea of what a persona could look like, and then they made the driver personas together. The participants gave suggestions and the authors/workshop facilitators wrote them down on the personas. The resulting personas can be seen in Figure 7 below.
The personas were later translated and digitalized and can be seen in chapter 4.1 Personas. The participants of the workshop found it easy to create the persona of the motivated driver. They came up with suggestions for the different selected categories quickly and seemed to relate to and understand the motivated driver’s persona. The unmotivated driver’s persona, however, took them considerably longer to come up with traits, the driver did seem to have fun making the unmotivated driver and joked about what kind of person he was. It seemed clear that they had all met drivers like this while working. While coming up with traits for the unmotivated driver, the participants told stories about how they perceive the macho culture among truck drivers affect how motivated they are to become better drivers.

During the group interview, the participants got to discuss the following prompts inspired by the game dynamics from Hunter & Werbach (2015) listed in chapter 2.4 Game Design Elements:

1. How could Driver Coaching be changed to motivate the unmotivated driver?
2. How can the motivated driver be kept continuously motivated?
3. How could the drivers feel like they keep improving their driving and that they do not plateau in their improvement?
4. How could Driver Coaching contribute to a sense of community? For example, between drivers, the transport company or the coach?
5. How could Driver Coaching evoke emotions?
6. How could Driver Coaching be designed to feel continuous?
7. What limitations could Driver Coaching have?

The participants discussed each prompt and the workshop facilitators wrote down their ideas and thoughts on post-it notes.

3.4 Data Analysis

The information obtained from the user studies were analyzed in several different ways. The observations were analyzed by creating a mind map with insights and themes. The mind map can be seen in Figure 8 below. The insights are listed further on in chapter 4.3 Insights.
Qualitative content analysis as described by Graneheim & Lundman (2004) was used to analyze the telephone interviews. First, all the interviews were transcribed by listening to the recordings and writing down the driver's answers word by word. By doing that, the researchers had solid quotes from the users to go on. From all the transcribed pages, meaningful quotes were marked and used as the meaning units in the content analysis. Secondly, the quotes were then condensed, forming the condensed units described by Graneheim & Lundman (2004). Lastly, themes were detected in the condensed units and user needs were interpreted by the researchers. A segment of the qualitative content analysis done by the researchers can be seen in Table 2 below.

Table 2 – An example of the content analysis performed by the researchers.

<table>
<thead>
<tr>
<th>Quote</th>
<th>Condensed meaning</th>
<th>Theme</th>
<th>Need</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ja, så man ser bränsle - dag för dag och sådant där, jag brukar titta på den och se vad man kan förbättra sig.</td>
<td>I look for how I can improve fuel consumption.</td>
<td>Fuel consumption</td>
<td>To see improvement</td>
</tr>
<tr>
<td>Ja, någonting sådant här typ fasiken det här har ni gjort bra, jag säger inte att det behöver vara pengar, det kan var något annat.</td>
<td>The encouragement does not have to be money.</td>
<td>Encouragement</td>
<td>To feel like one is doing a good job</td>
</tr>
</tbody>
</table>
Finally, to make an analysis of the entire *Driver Coaching* service, the Octalysis framework was used. After reading the book by Chou (2015) and looking at examples of different Octalysis ratings, the authors discussed each core drive and what aspects of it was present in the *Driver Coaching* service and gave it a rating according to the Octalysis framework. The rating of each core drive was therefore set by a combination of knowledge about the Octalysis, understanding of the service, reasoning, and intuition. An online tool was used for doing this, which can be reached through Chou’s website (Chou, 2019b). A screenshot of the online tool is presented in Figure 9 below. The resulting Octalysis score can be seen in chapter 4.6 Octalysis.

![Screenshot of the online tool where an Octalysis can be created](Chou, 2019b). Used with the author Yu-Kai Chou’s permission.
3.5 Ideation

The approach for the ideation phase can be seen in Figure 10 below. The ideation phase then proceeded following an iterative concept development process, which is illustrated in Figure 11 below. The authors would like to note that the illustration is a simplification of the process but serves as a tool to explain how the ideation phase proceeded in order to achieve the final design proposal.

First, individual brainstorming sessions were performed with the needs obtained from the user studies and the weaker sides of the Octalysis in mind, using the suggested ways to implement the core drives, ideation about how that could look in this specific case study took place. Secondly, a method called Worst Possible Idea was used. According to Dam and Siang (2018), Worst Possible Idea is a highly effective method that you can use to get the creative juices flowing by flipping the brainstorm on its head. From the list of needs, the top six needs were chosen and written on top of the worksheet. One person then came up with a bad solution to this idea and described why it was a bad idea. The next person's job was to make the idea even worse and, as the case for the first iteration, explain why it was a bad idea. The paper then came back to the first person that used the bad ideas for inspiration and came up with a good idea to meet the need. The third step in the ideation was more individual brainstorming and then a joint session where all the ideas were put up on a wall and analyzed. A picture from this joint session can be seen in Figure 12 below. During the joint session, the goal was to find similarities and combine different ideas to concepts.
The joint brainstorming session resulted in the creation of six different concepts. These early concepts are presented in chapter 4.7 Early Concepts. To evaluate the concepts and judge their potential for being successfully implemented in a coaching service, the expertise of employees at Scania that work with the Driver Coaching service was utilized during an evaluation workshop. The authors prepared a presentation of the concepts before the workshop. During the workshop, the agenda was to go through the concepts and show how they connected to the insights and user needs that had been detected, as well as evaluating the concepts to be able to judge which ones to move forward with.
4 Results

This chapter presents and shows the results of the thesis work. Firstly, the results derived from the conducted user studies concerning the users and the coaching service As-Is is presented. The user studies resulted in personas, insights, ideas from the users, and user needs. The findings concerning the coaching service As-Is is visualized with scenarios, storyboards, and Octalysis As-Is. Secondly, early concepts in the ideation phase are presented to demonstrate the service development process. Third and lastly, the service To-Be is presented in the form of a design proposal, that is further visualized using the same methods as for the As-Is service, that is scenarios, storyboards, and Octalysis To-Be.

4.1 Personas

![Magnus Avatar](image)

Goals
- Being appreciated and respected in the workplace
- Having vacation days and free time
- Spending time with his family

Frustrations
- Waiting times in between driving
- The traffic situation in general
- Things not being ready at the start of the workday
- Customers being rude when picking up and collecting goods
- Colleagues that go home early when there is still work left to finish

Needs
- Having aiding items at work
- To get a good night’s sleep
- Having nice co-workers
- Getting a pat on the back for doing a good job

Figure 13 – The digitalized and translated version of the persona Magnus. Avatar designed by Freepik (2017).

Magnus, the persona of the motivated driver, can be seen in Figure 13 above. Magnus is a person with a keen interest in trucks and a personality that is, according to the participants in the workshop, suitable for a driver. He is calm and chooses to “clench his fist quietly” and swallow his pride if someone makes a mistake, he does not see a reason to shout and be rude. He is also polite and likes to chat with the employees of the company where he does his loading and unloading, this makes for a better relationship between the companies and a smoother loading and unloading process.
The persona of the unmotivated driver, Patrick, can be seen in Figure 14 above. Patrick is dissatisfied with a lot of things and everything seems wrong to him. He directs his anger at other drivers, both other truck drivers but also at the traffic in general. There are always issues for him while loading or unloading and he feels like the transport company makes decisions without including him, which he does not like. The participants at the workshop seemed to think that these problems might be because of the sort of person Patrick is, but that he does not seem to realize that. Patrick wants to look macho and like he knows everything in front of his colleagues and his goal is to get his paycheck, not improve his driving.

4.2 Scenarios & Storyboards As-Is
In order to understand how the current service interacts with the driver personas, scenarios and storyboards have been created.

Scenario 1: Magnus in the current service
Magnus is driving along the highway when his coach calls. Magnus is happy to talk to the coach as a friend, but he suspects that he will not have anything new to say.
- “Hi Magnus! How are you?”
- “I am good thanks, how are you?”
The coach and Magnus small talk for a few minutes and then the coach say:
- “Well, about your grades. They are all A’s, good job, Magnus. Keep it up!”
After the call, Magnus feels good but wonders why he has the Driver Coaching service. Sure, he is not the one paying for it and the coach is a nice guy, but it seems unnecessary to have someone call and tell you your grades are good once a month.
**Storyboard 1: Magnus in the current service**

Figure 15 below describes how the persona Magnus experiences the current service.

1. Magnus looks at his report and sees that he is getting good grades. He knows this is good because it means that he is performing well, but he wonders why Scania bothers with the grades. It is the fuel consumption that counts!

2. The coach calls, the conversation is pleasant, some small talk and then the coach says that Magnus is doing a great job and hangs up.

3. Magnus continues his day as he usually does.

4. A month later, coach calls again, the grades are up to an A and the coach has nothing more to say, there is some small talk.

5. Magnus keeps doing his usual routine and sees in the report that the grades are the same as always.

6. Magnus likes the coach, but does not see the point of getting coached, he cannot raise his grades anymore.

**Figure 15 – Storyboard 1: Magnus in the current service.**

**Scenario 2: Patrick in the current service**

Patrick is driving along the highway when the coach’s call interrupts his radio talk show. Annoyed he answers the phone. It is that coach guy from the driver training that wants him to improve his driving. Patrick believes that he already knows how to drive well, he just has a hard driving style and Scania’s grading system is not made for that, that does not mean he is not a good driver. He also drives distances and loads that simply cannot earn good grades. Besides, why do grades matter? It is the fuel consumption that matters, not the silly grades! None of his colleges care, they are all though guys that drive hard but well, just like him! Such a stupid system! He tells the coach this, who starts to explain the system. Patrick does not want to hear it though; he is already a good driver, and no one should tell him he is not doing a good job. Patrick decides that he does not want to be part of *Driver Coaching* and blocks the coach’s number.
4.3 Insights
The data collection phase resulted in a lot of insights taken from the observations and the workshop. The insights are interpreted from both coaches and drivers’ viewpoint, but mainly from the drivers’ perspective. During the data analysis, themes emerged that the insights have been divided into. There are four different themes, which are: understanding, improvement, appreciation, and social relations.

Understanding
There are drivers/coaches that:

- Do not trust the grading system.
- Do not understand the grading system.
- Believe they are good at driving but because of their “hard driving style”, get bad grades.
- Perceive the grades as unfair.
- Believe that it is harder to get good grades in certain types of journeys or while driving a heavy load.
- Find it discouraging that on some routes it is very difficult or even impossible to get an A.
- Feel that coaching is not necessary, that they would drive equally good without a coach, this is especially true for the drivers with good grades.
- Believe economy is the biggest motivator for driving good, followed by the environment and safety.
- Wants more information than is currently offered, for example, a fuel consumption curve.
- Wants more information and communication from Scania.
**Improvement**

There are drivers/coaches that:

- Do not try to get good grades.
- Feel pride in getting good grades.
- “Hunt” for good grades.
- Get good grades without trying to get good grades.
- Do not like competitions and rankings at the transport company.
- Think competitions and rankings at the transport company is fine, or even an interesting way to learn from one another.
- Want to improve simply to make their boss happy.
- Believe that it takes time to see improvement with **Driver Coaching**, at least a year.
- Believes that when the coach is in the truck with the driver and live coaching the driver learns a lot.
- Feel like they have reached “the roof”, they have good grades and have nothing more to improve on.

**Appreciation**

There are drivers/coaches that:

- Have gotten less motivated than initially after getting a bonus for driving good and then having had that bonus taken away.
- Believe that to get “a pat on the back” is highly motivating.
- Really like Scania-merchandise (such as Scania t-shirts) and wear almost exclusively Scania-merchandise while at work.
- Want specially made merchandise for those performing well in **Driver Coaching**.
- Want to get a reward when they perform well, it can be small, but they want to be noticed.

**Social relations**

There are drivers/coaches that:

- Have a feeling of constant supervision from Scania and their bosses.
- Perceive the supervision as something mostly negative but with some positive aspects such as added safety.
- Keep track of their colleges´ location and speed by using the Scania Fleet App.
- Believe that having a good connection to the coach is highly important.
- Feel motivated by comparing themselves to their colleagues.
- Feel motivated by comparing themselves to their colleagues.
- Feel high value in feeling connected to their coworkers, to feel like “one in the team”.
- Feel like the calls are very empty in content when the drivers have good grades, there is very little for the coach to say more than “keep it up!”.
- Experience a macho culture where wanting to improve is not something to strive for.
- Want to impress their colleagues, for an example with grades or their good driving style.
4.4 Ideas from the Users
During the workshop, the drivers and coach came up with some ideas. One example is using Scania merchandise to reward drivers by printing one t-shirt a month with the text like “Best Driver Coaching Driver of the month April 2019” and giving that to the driver that performed the best that month.

Another prominent idea was to bring back the graph that shows fuel consumption. This graph was available to them before. All participants of the workshop said that they miss that graph and they were using it a lot while it was available to them. One of the participants even collects the data on his own to keep track of how he is doing since he does not find that the grades are enough for him.

4.5 User Needs
The qualitative content analysis of the telephone interviews resulted in a list of user needs. The identified needs are listed in Table 3 below, with the frequency signifying the number of times they were identified in the analysis.

Table 3 – User needs that were identified in the analysis.

<table>
<thead>
<tr>
<th>Number</th>
<th>Need</th>
<th>Frequency</th>
<th>Theme</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>To see improvement</td>
<td>9</td>
<td>Improvement</td>
</tr>
<tr>
<td>2</td>
<td>To feel like one is doing a good job</td>
<td>6</td>
<td>Appreciation</td>
</tr>
<tr>
<td>3</td>
<td>To get good grades</td>
<td>5</td>
<td>Improvement</td>
</tr>
<tr>
<td>4</td>
<td>To enjoy the conversation with the coach</td>
<td>5</td>
<td>Social relations</td>
</tr>
<tr>
<td>5</td>
<td>To have an accurate grading system</td>
<td>4</td>
<td>Improvement</td>
</tr>
<tr>
<td>6</td>
<td>Getting coached on one’s own terms</td>
<td>4</td>
<td>Social relations</td>
</tr>
<tr>
<td>7</td>
<td>Knowing how one’s driving style affects fuel consumption</td>
<td>3</td>
<td>Understanding</td>
</tr>
<tr>
<td>8</td>
<td>To compete</td>
<td>2</td>
<td>Social relations</td>
</tr>
<tr>
<td>9</td>
<td>To improve fuel efficiency</td>
<td>2</td>
<td>Improvement</td>
</tr>
<tr>
<td>10</td>
<td>To relate to the coach/To have a coach that knows trucks</td>
<td>2</td>
<td>Social relations</td>
</tr>
<tr>
<td>11</td>
<td>Receiving feedback from the coach</td>
<td>2</td>
<td>Improvement</td>
</tr>
<tr>
<td>12</td>
<td>Getting to drive in a way that is safe</td>
<td>2</td>
<td>Security</td>
</tr>
<tr>
<td>13</td>
<td><em>Driver Coaching</em> following the regulations of the transport company</td>
<td>1</td>
<td>Security</td>
</tr>
<tr>
<td>14</td>
<td>Equal treatment at the transport company</td>
<td>1</td>
<td>Social relations</td>
</tr>
<tr>
<td>15</td>
<td>To feel excited about the grades</td>
<td>1</td>
<td>Appreciation</td>
</tr>
<tr>
<td>16</td>
<td>Feeling like the coach is professional</td>
<td>1</td>
<td>Social relations</td>
</tr>
<tr>
<td>17</td>
<td>Feeling secure</td>
<td>1</td>
<td>Security</td>
</tr>
<tr>
<td>18</td>
<td>Getting to compare grades</td>
<td>1</td>
<td>Social relations</td>
</tr>
<tr>
<td></td>
<td>Need</td>
<td>Frequency</td>
<td>Category</td>
</tr>
<tr>
<td>---</td>
<td>----------------------------------------------------------------------</td>
<td>-----------</td>
<td>------------------------</td>
</tr>
<tr>
<td>19</td>
<td>Having consistency in the coaching</td>
<td>1</td>
<td>Social relations</td>
</tr>
<tr>
<td>20</td>
<td>Not to feel stressed while driving</td>
<td>1</td>
<td>Security</td>
</tr>
<tr>
<td>21</td>
<td>To agree with the way the driving is measured</td>
<td>1</td>
<td>Understanding</td>
</tr>
<tr>
<td>22</td>
<td>To be able to answer or call back at times suiting the driver</td>
<td>1</td>
<td>Social relations</td>
</tr>
<tr>
<td>23</td>
<td>To be able to ask questions</td>
<td>1</td>
<td>Social relations</td>
</tr>
<tr>
<td>24</td>
<td>To be able to improve</td>
<td>1</td>
<td>Improvement</td>
</tr>
<tr>
<td>25</td>
<td>To be encouraged to get better</td>
<td>1</td>
<td>Appreciation</td>
</tr>
<tr>
<td>26</td>
<td>To get value out of the coaching session</td>
<td>1</td>
<td>Improvement</td>
</tr>
<tr>
<td>27</td>
<td>To have a good driving style</td>
<td>1</td>
<td>Improvement</td>
</tr>
<tr>
<td>28</td>
<td>To have enough information</td>
<td>1</td>
<td>Understanding</td>
</tr>
<tr>
<td>29</td>
<td>To see results</td>
<td>1</td>
<td>Improvement</td>
</tr>
<tr>
<td>30</td>
<td>To trust the grading system</td>
<td>1</td>
<td>Understanding</td>
</tr>
</tbody>
</table>

Studying the top 12 needs, the needs that emerged from the analysis two or more times:

1. *To see improvement*, an extrinsic need that a lot of the drivers do not feel is met.
2. *To feel like one is doing a good job*, an intrinsic need that the drivers often feel is met but not noticed.
3. *To get good grades*, an extrinsic need that is met for some drivers.
4. *To enjoy the conversation with the coach*, an intrinsic need that all the drivers felt were already met.
5. *To have an accurate grading system*, a need that will not be analyzed in this thesis since a delimitation has been made were the thesis assumes a well-functioning grading system.
6. *Getting coached on one’s own terms*, an intrinsic need that the drivers partly felt were met. Those who had good grades did not experience this as met since the coach could not give feedback for further improvement.
7. *Knowing how one’s driving style affects fuel consumption*, an intrinsic motivation that was not met, a lot of the drivers did not see the connection at all and some of the drivers knew there was a clear connection but did not know how the grades affected the fuel consumption.
8. *To compete*, an intrinsic need that only some drivers experienced, that was partly fulfilled by smaller competitions among the employees at the transport company.
9. *To improve fuel efficiency*, an extrinsic motivation that was partly met, most of the drivers had improved but wanted to improve even more.
10. *To relate to the coach/To have a coach that knows trucks*, an intrinsic need that all participants perceived as met.
11. *Receiving feedback from the coach*, an intrinsic need that several of the drivers experienced but there was also serval that did not, especially those with good grades.
12. *Getting to drive in a way that is safe*, an intrinsic need that depends heavily on the culture at the transport company in question. Most drivers experienced this need as met.
As seen in the top 12 needs, there are several of the needs that are already being met. Some, however, are not being met at all. Those of the needs number 13 to 30 that the authors deem absent from the As-Is service (all of which are intrinsic) are: To feel excited about the grades, to agree with the way the driving is measured, and to have enough information.

4.6 Octalysis As-Is

In Figure 17 below, the Octalysis made for the current service is shown. The authors discussed each core drive and what aspects of it were present in the service. If there was only one element of the core drive present, it got a “1” rating. For the core drive to receive a higher rating, the authors needed to judge that more elements of that core drive were present. The rating was set using knowledge about the service that the authors had gained, and through comparison with examples from Chou’s book (Chou, 2015). The reasoning for the rating of each core drive is explained below.

Epic meaning and calling

The Driver Coaching service does have an epic meaning, saving fuel is strongly connected to both the environment and saving money, both very important issues. Although, far from all drivers feel this epic calling to change their behavior to save money for the transport company and save the environment.
Development and accomplishment
The service clearly has the grades to show development, but some drivers that consistently get the highest grades do not really feel accomplished, because they do not continue their development.

Empowerment of creativity and feedback
The service gives feedback in the form of the reports and the calls from the coach, but the driver does not get to be creative. The drivers need to follow the driving style that Scania promotes, and not come up with their own driving style.

Ownership and possession
The drivers do get a personalized grade and coach call. They also have a connection to the coach and would likely not want to lose that. There is also the connection to their cars. If they drive the same car every workday, they want to take care of it by driving good. But a lot of drivers need to share the car with other drivers, so they do not get to have the whole ownership of the car.

Social influence and relatedness
The coach is there as a mentor, but otherwise, the service is providing very little social influence on the drivers.

Scarcity and impatience
The service itself is quite premium, every transport company does not have it so there is scarcity there. Regarding the grades, it is hard to get an A, and that provides a not too easy challenge for the driver. The grading system can be viewed as dangling as it is very clear that A is the top grade and that is should be attainable to every driver if they work for it. There is also the element of impatience in not knowing your grade until after the drive, and the final grade after a month.

Unpredictability and curiosity
There is some element of unpredictability and curiosity in the facts that a coach will call at an unknown time and give feedback that can be either good or bad. The user studies showed that some drivers are very curious about how their fuel usage is changing. The grades are meant to be predictable, but can at times be unpredictable for the driver, because the driver does not have the full information about how the grades are set. Therefore, there is a fair bit of unpredictability in the service for the user, but not necessarily in a positive way.

Loss and avoidance
The fear of getting a bad grade makes the drivers avoid doing certain things. If they have invested their energy in receiving an A, they will want to avoid losing that grade and therefore that effort.

Summary
There is a need for improving the white hat section to balance out the Octalysis. The balance between the left side and the right side is already quite balanced, the left side could be raised slightly more than the right side to allow for more intrinsic motivation since it is now rather even, but most of the drivers’ needs are for intrinsic motivation.
4.7 Early Concepts

The six concepts presented at the evaluation workshop were as follows.

1. **Restructure**: A redesign of the report and/or Fleet Application. Containing new or different information, with an emphasis on elements that would motivate the drivers, as illustrated in Figure 18 below.

![Figure 18](image1.png)

*Figure 18 – A sketch of one new aspect to bring to the restructure called "Sliders" and a sketch of the customer journey of the restructured service.*

2. **Collecting points**: A game-like concept where quests, guilds, boosters, and points are used to motivate drivers. The concept is illustrated in Figure 19 below.

![Figure 19](image2.png)

*Figure 19 – A sketch of a customer journey with a focus on collecting points.*

3. **A pat on the shoulder**: A new way of encouragement where the drivers get praise for improving by receiving automatic appreciation in the form of emails and merchandise. The concept is illustrated in Figure 20 below.

![Figure 20](image3.png)

*Figure 20 – A sketch of a customer journey with ways to give the driver "a pat on the back" and a sketch for merchandise as a reward.*
4. **Raising the roof:** A concept to make sure already motivated drivers have something to work towards. The concept is illustrated in Figure 21 below.

![Figure 21](image)

*Figure 21 – A sketch of a customer journey with ways to “raise the roof” for already motivated drivers.*

5. **Setting goals:** A concept where the drivers see progress more clearly and feel a stronger sense of achievement by setting goals and getting badges. The concept is illustrated in Figure 22 below.

![Figure 22](image)

*Figure 22 – A sketch of a customer journey where setting goals and making progress are in focus.*

6. **Cooperation:** A concept with focus on the driver-to-driver connection, strengthening and building the relationship. The concept is illustrated in Figure 23 below.

![Figure 23](image)

*Figure 23 – A sketch of a customer journey with cooperation between drivers.*
A decision was made not to go forward with concept number six *Cooperation*. Although very important, it is was deemed outside the scope of the project and the driver-to-driver relationship was already well established. Because of the similarities with the in-house project *The Game*, concept number two *Collecting points* was not selected as one of the concepts to move forward with. There were aspects in each concept that the workshop participants liked during the evaluation workshop. The following were the most appreciated aspects: concepts with merchandise, *Sliders*, *Expert fleet*, encouraging *automatic appreciation*, and *milestones*. These aspects originally belonged to different concepts, but as the design proposal was developed it became clear that they could all work together or as separate concepts.

### 4.8 Design Proposal

The design proposal is a bigger concept made up of five components. Each component has a purpose and the components could be implemented separately, but they also work together to enhance Scania’s *Driver Coaching* service. The idea is to motivate all types of drivers, with different levels of motivation and different grades to take part in *Driver Coaching*.

The drivers that already have good grades and do not know how to improve further should, by implementing these components, get new goals to work toward and feel motivated to be a part of *Driver Coaching*. It is still beneficial for them to stay in the *Driver Coaching* service since this leads to them keeping the fuel consumption down.

For the drivers just starting out at lower grades that do not receive the added motivation of getting good grades, improvement should feel achievable. The attitude of other drivers is also highly important and making it visible that older and better drivers than they are participating should also raise motivation. Each of the five components of the design proposal is described and visualized in the following paragraphs for a better understanding of the To-Be service.

**Sliders**

*Sliders* is a tool for the drivers to better understand the connection between the grades and their fuel consumption. The grades are based on data collected from the trucks, a certain value on a certain type of drive corresponds to a certain grade. The idea with *Sliders* is to use this data to show the drivers that if they focus on getting their grades up their fuel consumption curve will get better as a result. Dragging the *Sliders* will result in a change in the fuel consumption curve. A visualization of the *Sliders* tool is shown in Figure 24 below.
A-driver merchandise

The merchandise part of the concept is based around how the drivers seem to enjoy wearing Scania merchandise and how several drivers have expressed how they would like to get “a pat on the back” when they put in the effort to maintain good grades since they now feel like they have “reached the roof” and cannot improve any further and do not have anything to work towards. The idea is that there are four different kinds of special A-driver merchandise series, visualized in Figure 25 below. For example, a belt, a t-shirt, a baseball hat, a sweatshirt and a mug. Each of these is only attainable by maintaining a certain grade for a certain amount of time. Each of the five grades corresponds to one of the five kinds of merchandise. The reason for it being five pieces of merchandise is that all drivers are not graded on hill driving and the idea is that everyone should be able to collect the whole set. Hopefully, this could also motivate other drivers to engage in Driver Coaching as they see their colleagues having A-driver merchandise.

Figure 24 – A visualisation of the Sliders tool.

Figure 25 – A visualization of the A-driver merchandise.
Milestones
The idea in this concept is to ensure the driver feels appreciated when making an effort. This is done by adding milestones to the coaching, the milestone is an achievable goal that the driver could reach before the next coaching session.

For example, getting halfway towards a better grade which is more achievable than improving by an entire grade. Hopefully, this makes it easier for the driver with low grades to see results at the same time as it could be something for the drivers with all A’s to work towards. This is visualized in Figure 26 below.

Automatic appreciation
By occasionally sending encouraging feedback to the drivers the idea is to show them that their hard work has not gone unnoticed and that they are appreciated. The appreciation emails should not come too often, they should feel like a special treat the drivers get when they have improved a lot or maintained good grades for a long time. An example is shown in Figure 27 below.

Expert Fleet
Another aspect added to keep the well-performing drivers motivated is the Expert Fleet. A program for the very best drivers in the Driver Coaching service, with extra benefits such as automatic entry to the Driver Competition, arranged by Scania, where they get to compete for a brand-new truck. This concept allows for the well-performing drivers to shine in front of their colleagues, and hopefully, the excitement around an Expert Fleet can get more of the currently unmotivated drivers to feel more of a purpose with performing well in the service. Scania could also take advantage of having an available user group for surveys and such in the future.
To be a part of the Expert fleet a driver should have to work hard, and not feel like they have “reached the roof” and cannot improve anymore. A visualization of Expert Fleet is shown in Figure 28 below.

Figure 28 – A visualization of the email when a user reaches Expert Fleet.

4.9 Scenarios & Storyboards To-Be
In order to better understand how the To-Be service is meant to affect the drivers and change their workday in comparison to the As-Is service, scenarios and storyboards for the To-Be service have been created.

Scenario 3: Magnus in the new service
It is lunchtime and Magnus is on his phone, he is using the Scania Fleet Application and is playing around with the Sliders. He compares the values he has now with the ones he had when he was starting out with Driver Coaching, and with the average driver. His current fuel consumption curve comes out the lowest. He feels a great sense of pride. A notification appears on his screen. It is an email from Scania. The email states that they have observed how much of an effort Magnus has been making and that they and the environment appreciate it. Magnus smiles to himself after reading the letter. It is nice to know that his hard efforts are paying off and has not gone unnoticed.

Lunch ends and Magnus puts on his “A-driver – Cruise control” baseball hat. It is the second piece of Scania A-driver merchandise he has collected, and he is working on his current milestone which is to get the Idling t-shirt.

As Magnus starts driving again his coach calls. After the usual greetings and small talk, the coach and Magnus evaluate last month’s milestones and sets new ones together. He is doing good at keeping his idling-grade up and is only one month away from collecting his next piece of merchandise. He is also focusing on the speeding-grade, the goal is to get his grade up to a strong A as opposed to his now weak A. Magnus is challenged by the new goals and motivated to reach them.
A few years pass, Magnus is working hard on collecting the *A-driver merchandise* and is reaching his goals. When he has maintained all A´s for a certain amount of time he finds out during a call with the coach that he is now such a good driver that he now has the option to join the Expert Driver Fleet. For as long as he can maintain that position, he will get to compete in Scania´s *Driver Competition* and test out new products and answer surveys. Magnus feels a great sense of pride yet again, he is happy to be part of the *Driver Coaching service*.

**Storyboard 3: Magnus in the new service**
Figure 29 below is a storyboard for how the persona Magnus could experience the new service.
Magnus uses sliders and gets an understanding of the grading system. He sees what a big difference his good driving style makes, he feels motivated by this.

The coach calls, the conversation is pleasant and about setting milestones and some small talk. Magnus already has mostly A’s, but they set a goal for him to keep the streak in the category “Cruise Control”.

Magnus is motivated to drive well.

The coach calls, the conversation is pleasant and about setting milestones and some small talk, then about how Magnus has reached his milestone.

Magnus gets a package in the mail, it is a baseball cap with the text “A-driver-Cruise Control” and a note about how since he has maintained his good grades, he has collected the first merchandise-reward. Magnus is proud!

One year goes by. Magnus get coached regularly.

Magnus gets an email from Scania. “Hi, we see that you have been maintaining really good grades for a long time, we and the environment appreciate that! Keep up the good work!” Magnus is happy his efforts are appreciated.

Several years pass. Magnus get coached regularly and collects A-driver merchandise occasionally. He always have a challenging but achievable goal in mind!

Magnus gets a package in the mail, it is a t-shirt with the text “A-driver Idling” and a note about how since he has maintained his good grades, he has collected the final merchandise-reward and is now a member of Scania’s “Expert Fleet”. This includes special benefits such as getting a place in the Driver Competition. To keep his place Magnus must maintain his good grades. Magnus is motivated to keep getting good grades and to improve even more!

Figure 29 – Storyboard 3: Magnus in the new service.
Scenario 4: Patrick in the new service

Patrick is on his phone during his lunch break, in the Scania Fleet Application he plays around with the Sliders, he realizes the connection between the grades and his fuel consumption. Better grades do lead to lower fuel consumption! His colleague Magnus sits down at the lunch table. Magnus has a Scania t-shirt Patrick has not seen before, it says “A-driver Idling”, Magnus proudly tells Patrick that it’s a collectible series available for those in Driver Coaching with good grades. Patrick wants one of those! And, if his colleague cares enough to collect the reward, maybe he should too?

With his newfound motivation to perform well and his understanding of how the grades correspond to his fuel consumption, he asks his boss to be a part of the Driver Coaching Service.

A week later the coach calls Patrick and explains more about how the grading system takes into consideration what types of roads he drives on. Together the coach and Patrick set achievable goals, the first goal is to reduce his idling with a few minutes, this would correspond to an improvement that would land him in the upper part of the E-scale.

During the following months, Patrick works hard on achieving his goals, and he does reach them! He uses the Sliders to see how his improvement corresponds to his fuel consumption, and it is a lot lower now!

After a few more months of regular improvement, Patrick receives an email from Scania. It says that they see his improvement and that they and the environment are grateful. Patrick feels happy someone is noticing his hard work. He also starts talking about his improvement among his colleagues, motivating them as Magnus and his t-shirt had motivated him. One day Patrick hopes to be good enough to start collecting the special A-driver merchandise too!

Storyboard 4: Patrick in the new service

Figure 30 below is a storyboard for how the persona Patrick could experience the new service.
Figure 30 – Storyboard 4: Patrick in the new service.

4.10 Octalysis To-Be
If the entire design proposal is implemented, the authors judge that the Octalysis would look like the light blue octagon in Figure 31 below. The ratings for this Octalysis were set in the same way as described for the As-Is Octalysis in chapter 4.6. The reasoning for the rating of each core drive is described under the figure.
Figure 31 – The Octalysis for the To-Be service, in comparison to the As-Is service.

**Epic meaning and calling**

The *Sliders* help the driver feel more meaning with the coaching, that there is a clear image of how the driving style affects fuel consumption. There is also the aspect of getting into the *Expert Fleet*, which should increase the calling the driver feels to use the service.

**Development and accomplishment**

The *Sliders* help the drivers feel accomplished since they should gain an understanding of how the grades correlate to the accomplishment of lowering fuel consumption. Furthermore, the sense of accomplishment and development should also be raised by having *milestones*. By getting an email where Scania has noticed the drivers’ development and accomplishments, receiving the special merchandise, and later becoming a part of the *Expert Fleet*, the score for Development & Accomplishment should have gone up by several points.

**Empowerment of creativity and feedback**

The drivers can get instant feedback by dragging the bars in the *Sliders* tool. Milestone unlock is implemented in that you unlock the Merchandise and later *Expert Fleet* if you perform well. Since joining the *Expert Fleet* is an option the driver gets it can be viewed as “plant picking” which raise the sense of empowerment.
Ownership and possession
The merchandise is working as a set of collectibles. Since the Sliders gives the users a tool to monitor their score and how a better score would correlate to a better fuel consumption this could also contribute to raising the score.

Social influence and relatedness
The merchandise could be viewed as a real-life brag button. Seeing other drivers with the merchandise could also be viewed as a social prod. The Expert Fleet could work as a community and both Expert Fleet and the merchandise could work against the macho culture and show how other drivers care about improving.

Scarcity and impatience
Expert Fleet is a form of dangling, as well as seeing colleagues with the merchandise. It was a low two rating before and a bit higher two rating now, but not enough improvement for it to reach a three rating.

Unpredictability and curiosity
The sudden reward of receiving an email of appreciation adds an element of unpredictability. Distributing merchandise could help increase the curiosity for the coaching service within the user segment.

Loss and avoidance
The drivers can drop down in level and be removed from the Expert Fleet, which increases the element of loss within the service. The sunk cost prison can be seen in the fact that if the drivers have worked hard to have a good grade average they do not want to make a bad drive because that would lose them their grade and therefore their chance of receiving the merchandise or to become a part of/stay in the Expert Fleet.

Figure 32 and Figure 33 below illustrates the differences between the As-Is service and the To-Be service regarding left and right core drives, respectively white hat and black hat core drives.
Figure 32 – Illustration of the left brain – right brain difference in ratings between the As-Is and To-Be Octalysis.

Figure 33 – Illustration of the white hat – black hat difference in ratings between the As-Is and To-Be Octalysis.
In Table 4 below, the total difference in ratings between the As-Is and the To-Be Octalysis is illustrated. The scores for the left side core drives, right side core drives, white hat core drives, and black hat core drives are presented. White hat core drives were raised the most with seven points, black hat core drives were only raised three points. The balance between the left and right core drives were kept almost the same, the right core drives were only raised one point more than the left core drives.

*Table 4 – Difference in ratings between the different groupings of the As-Is and the To-Be Octalysis.*

<table>
<thead>
<tr>
<th></th>
<th>As-Is</th>
<th>To-Be</th>
<th>Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Left</td>
<td>7</td>
<td>11</td>
<td>4</td>
</tr>
<tr>
<td>Right</td>
<td>4</td>
<td>9</td>
<td>5</td>
</tr>
<tr>
<td>White hat</td>
<td>8</td>
<td>15</td>
<td>7</td>
</tr>
<tr>
<td>Black hat</td>
<td>7</td>
<td>10</td>
<td>3</td>
</tr>
</tbody>
</table>
5 Discussion

In this chapter, the methods and results of the thesis are discussed.

5.1 Method Discussion

Both researchers were out in the field and taking part in both the observations, interviews, and workshop conducted, in accordance with the recommendation by Millen (2000). The fieldwork utilized both liminal and corporate informants, also a good idea according to Millen (2000). The most motivated and high performing drivers can be seen as liminal informants because they are fringe members of the group. It is perceived that the majority of the drivers are currently not motivated. The coaches are corporate informants because they are employees of Scania.

The method to call users to gain an understanding of why they sometimes do not answer the phone is obviously problematic. Efforts were made to get in touch with these drivers but the difficulty in this task resulted in viewing the problem from the other way around and studying exactly why the motivated drivers are motivated. Chances are that the drivers that agreed to participate in the study were not the ones with the most critical feedback to give. If a method that allowed for more contact with the unmotivated drivers had been used, the results could have been a better understanding of how to motivate the unmotivated drivers. But on the other hand, if other methods would have been used the motivated drivers would not have been in focus. Especially during the workshop, the issue about “hitting a roof” and not being able to move forward once a driver has good grades would not have been found, and the design proposal might not have been as holistic, aimed at all sorts of drivers. There were conversations with drivers that fall into the unmotivated category, although they were not reached in as large numbers like the ones perceived by the authors as motivated were.

Continuing the discussion about dividing the drivers into the categories unmotivated and motivated, it would have been interesting to gather data about this. This could have helped as the design proposal was formed, as this could have allowed for coming up with a design proposal that helped the biggest quantity of drivers. Following this discussion, there is also the issue of dividing human beings into categories. This would have to be handled both in a way that is accurate but also with respect to the participants of the study.

Since the personas that were created together with the drivers at the workshop, there is a risk that the workshop participants ended up making the personas into being stereotypes, but on the other hand, the drivers do have a much more in-depth view and experience with the user group than the authors of the report have. If the authors had made the personas themselves without ever having had any contact with truck drivers, the personas would have likely been stereotypes as well, and not as well founded than now when they are created together with the users. Like Polaine et al. (2013) maintains, service design is about designing with people and not for them.

Conducting a workshop with drivers gave great results but was also challenging because the workshop participants were not used to creative methods such as brainstorming. To help them on the right track all the parts of the workshop were constructed so that the participants did not have to draw or write themselves. They merely picked pictures and answered questions such as “What frustrations does the motivated driver face?”. The advice from Sanders and
Stappers (2016) were followed, such as making the participants more comfortable by coming to them and letting them be in an environment they are used to. The benefit of this was that they participated a lot and were directed in their discussions by the pre-made workshop tasks. However, since they picked pictures from a pre-decided selection of pictures there is a possibility that they were affected by the picture selection and would have made a completely different mood board if they were to find the pictures themselves. However, the discussion about the pictures served as a safety net, there were no comments about pictures they felt were lacking and since they did not pick all the pictures the images that were found not to be relevant were simply not chosen.

The first research question, RQ1, was answered with the results from the analysis of the user studies. The discussion above regarding said user studies is highly relevant as the answer to RQ1 is discussed.

The method used to answer the second research question, RQ2, was using the Octalysis framework and finding connections between the needs and the Octalysis results. Since the needs came from the user studies the discussion above is also affecting this research question. Regarding the Octalysis framework, it requires the user to go on a certain amount of intuition about the service, which can be a drawback since it is not particularly scientific. The authors had a feeling for what the users felt regarding the core drives, but they are not drivers themselves and have not used the service in question, only been told about it. This could have led to the connection between the needs and the Octalysis not actually existing. The authors believe it does and that the understanding of the service was good enough to make the Octalysis analysis but further research on this needs to be made to say for sure that the connection between the Octalysis and user needs exists and in what extent.

As the Octalysis framework is used, there is some intuition used together with reasoning. This, according to the authors must be based on an understanding of both the Octalysis framework and the service. The results could be misleading if this understanding is lacking. However, the authors believe they possess this understanding of the service after the user studies.

The last research question, RQ3, was answered by implementing game design elements. The design proposal is still in an early stage and needs further work and evaluation to conclude if these game elements are a good implementation. The method could have been different in how much testing was allowed. This, of course, would have meant not doing an extensive user study and guessing more in the concept phase. However, after working from what the theory says about game elements and then making a design proposal, the authors believe that the ideas presented are possible and beneficial to implement. That opinion is shared by the employees at Scania that have more experience about the service than the authors.

The visualization methods used during the case study has used multiple quadrants in the iconicity-time graph by Diana et al. (2009), to ensure comprehension of the coaching service. A customer journey has been used from the flow quadrant, a mood board was created which belongs in the images quadrant, and storyboards, which are in the narratives quadrant.

Source evaluation has been conducted continuously during the thesis work. The authors have considered how many sources that lean towards popular science to use. The gamification literature by Hunter and Werbach (2013) and Chou (2015) are considered to be of that nature,
but since the term gamification is quite new, the authors deem those sources to currently cover the term most extensively. However, the authors note that it is justifiable to be critical when using sources that seem to want to sell their own idea as in the case of Octalysis by Chou (2015). The authors have kept in mind that this tool is still currently being developed and is not well established yet.

5.2 Results Discussion
The results discussion begins discussing how the personas Magnus and Patrick experience the To-Be service. A general comparison between the As-Is and To-Be service then follows and a comparison of the Octalysis made for each of the services. The areas of improvements in the coaching service are discussed. Finally, to wrap up the section there is a discussion about ethics in designing for motivation.

5.2.1 Personas
The result of the design proposal will, of course, affect the drivers, hopefully in positive ways. The persona Magnus gets something to work towards after he has reached good grades. He can work at getting better even after he has all A’s because of the milestones since he can work at getting stronger A’s. In his To-Be scenario, Magnus also gets the goal of maintaining his grades by the benefits that follow from maintaining good grades, the benefits being A-driver merchandise and Expert Fleet. Hopefully, Magnus will feel like the “roof is raised” as several drivers stated they needed in the user studies. An insight from the user studies was also the issue of how some drivers feel a lack of appreciation after their hard work. They want “a pat on the back”, something that, according to the drivers do not have to be big.

Hopefully, the automatic appreciation will be viewed as a pat on the back, as well as the A-driver merchandise and Expert Fleet since the merchandise could be viewed as “a pat on the back”, as well as being invited to join the Expert Fleet. In another insight from the user studies was the issue of the drivers not understanding the grades. Even the drivers with good grades wondered why they were focusing so much on the grades and not on fuel consumption. Scania’s explanation to this was that they did not want the drivers to focus on fuel consumption since this is misleading. Implementing the Sliders could help Magnus understand how the connection between the grades and the fuel consumption works, giving the grades a purpose.

Patrick, the unmotivated driver persona, should also benefit from the To-Be service. His coaching journey will, in the To-Be service, probably begin with him seeing colleagues wearing A-driver merchandise or talking about being a part of the Expert Fleet. This should make him keener on wanting to be coached, both because he sees something that he wants but also because it might lower the stigma around wanting to improve found in the user studies. An insight from the user studies is that there is a strong macho culture among the drivers. Patrick seeing drivers like Magnus trying to improve could potentially help with accepting that everyone could work on improving and there is nothing wrong with that.

Regarding the motivation, once Patrick is utilizing the To-Be coaching service, he should experience the same benefits as Magnus. Patrick has room for improvement and as he uses the Sliders, he will hopefully see how this is something that does not only benefit him but also the public since he will drive more environmentally friendly. This desire could, according to Bellé (2013), raise motivation. Some goals will take him longer to reach, but he will have clear
milestones to work towards and an understanding of how his efforts to get better grades results in lower fuel consumption. Hopefully, Patrick can within the To-Be service, become as motivated as Magnus and continue his journey towards reaching the Expert Fleet.

5.2.2 As-Is – To-be Comparison
When studying design for motivation and more specifically, the pinball effect, where the product or service is designed to guide the user to the desired behavior as explained by Bisset & Lockton (2010), a connection could be observed to Scania’s Driver Coaching service. The drivers’ goals to get good grades will, in most cases, lead to better fuel efficiency and other desired effects. However, in some cases, where the driver is such a good driver that the grading system is yet to give accurate grades to that driver. The consequence of this is that the driver will drive in a less fuel-efficient way to get better grades. This could be viewed as an indicator of how strongly some drivers are affected by the grade.

At the same time as some drivers care a lot about their grade, there also seems to be a quite large number of drivers who do not care about their grades or frankly even about improving at all. If this is connected to the macho culture found in the data collection needs to be explored further to be certain of. But a hypothesis of the authors is that if there more drivers talk about trying to improve more drivers would care about their grades and trying to improve. In the To-Be service, an effort of just this has been made in the form of Expert Fleet and the A-driver merchandise. To combine their love for Scania Merchandise with a way for drivers with a good driving style and good grades to show that they do care could be a beneficial combination.

Discussing unmotivated drivers, it is interesting to consider whether a driver is motivated or not could have more to do with the driver’s personality. Could it be the case that some drivers that are not motivated to participate in the service have other things going on in their lives, making the Driver Coaching service not matter to them no matter how motivating the service is? No matter the answer to that question, it could be argued that improving a service and making it more motivating should make things better for all drivers. Maybe a really motivating service can get through to the drivers that were not motivated in the beginning even if the service itself were not the issue. Improving the service should mean an improvement. Assuming the improvements are actually improvements and do not bring any major downsides, the problem would arise only if the improvements are expensive to implement and/or result in downsides for the people working backstage with the service and the improvements do not bring as many benefits as planned. One way of handling this could be collecting data over the users to better understand the benefit that could be gained and comparing that to the cost and effort of designing and implementing new aspects.

To make a comparison between the service As-Is and the design proposal, there are quite a few differences. First, there is, in the service As-Is, quite a low “roof” as the drivers themselves explain it. Especially those who drive the same trip day after day for years get their grades up high and have nothing more to improve. This affects both the driver and the coach since the coach has no feedback to give and the driver has the feeling that the coaching service their boss is paying for is wasted on them. Scania’s view of this is that a driver who is coached maintains their good driving style while a driver who is not coached slowly goes back into old habits. In the To-Be service, however, there is a higher “roof” since there are more milestones
to reach, merchandise to collect and a whole other level for the driver to reach. This should give the drivers something to work towards and thereby raise their motivation.

The service today has a lot of focus on extrinsic motivation, there are results that come in the form of grades and the process of improving is not something that was mentioned a lot in the user studies. The To-Be service has a greater focus on the process, the divers get appreciation, they receive merchandise as they improve, and they understand why they are making the journey of improvement in the first place.

All these parts together could raise both the motivation and the user experience. Reaching the goal of service design according to van Boeijen et al. (2014). Regarding the other three themes, however, further tests will hopefully show that the drivers feel a sense of achievements by the added automatic appreciation, milestones, A-driver merchandise, and Expert Fleet. The understanding will likewise hopefully come from the Sliders. That understanding could potentially not only help the driver to understand the big picture of the service, but also motivate them to want to get better not to see their grades go up but because they understand the consequences this would have on the fuel consumption. Comparing this to the previous study on gamified driving experience by Fitz-Walter et al. (2017), the understanding the drivers get through the Sliders for why they should get good grades should motivate them to actually improve, not just find a way to cheat the system. Setting the milestones corresponds nicely to Stillwater and Kurani’s (2013) results on how personal goals have a positive effect on drivers motivation for eco-driving.

How the drivers react to the To-Be service is yet to be examined. Hopefully, they will get more motivated as reasoned above, but before the user tests, this is not certain. Some might find the emails of automatic appreciation impersonal since they are automatically generated, or find the A-driver merchandise and Expert Fleet to make them anxious if they have a hard time of getting A’s. The Sliders could be something some drivers use once and never look at again and the milestones could be viewed as goals set too low. This is a possibility, but the authors believe that the concepts will, for the most part, be received well. Especially since the concepts have been discussed with the team at Scania working with Driver Coaching. This discussion took place in the early stages of the ideation phase and the opinions of the team were kept in mind as the ideation phase went on.

Froehlich et al. (2010) state that a service loses its meaning as it teaches the user about being eco-friendly since the user does not need the service as much anymore. Connecting this to the Sliders in the design proposal, this could be the case. If the drivers use the Sliders and gain an understanding of the connection between the grades and their fuel consumption, that could mean the purpose of the Sliders is fulfilled. Although, if the goal is met and the Sliders are not disturbing those who no longer using them, does that matter? Secondly, could it be the case that the drivers like to see their improvement to the degree that after they have lowered their fuel consumption, they will wonder how much? There is, of course, a difference between the examples in the mentioned article and the Sliders tool since the Sliders does not provide tips that can be learned. The authors, however, still believe it is an important question to ask before implementing a service, so that if or when it has fulfilled its purpose it does not act as something disturbing for the user.
5.2.3 Octalysis Comparison
The Octalysis framework has been a central part of the thesis work. In the As-Is service, the core drives on the left side are more dominant than the drives on the right side. Epic Meaning & Calling is the highest scoring core drive. Social Influence and Empowerment are the lowest scoring core drives. The score on the left core drivers are a lot lower than the right side, this could be an explanation to why the drivers, in general, focus a lot on the grades and the result. They do not see the process itself as enjoyable. Studying the balance between white hat and black hat, they are quite balanced which could indicate that the drivers feel as much anxious and obsessed as they feel more positive feelings such as powerful, fulfilled, satisfied and in control in the As-Is service.

The To-Be service has a slightly higher score on the left side than the right. The gap between them has been lowered by one point. There is still a strong focus on goals and results but, hopefully, the process itself will be more enjoyable. However, it is a service that the users do for work which could also be connected to extrinsic motivation. The raise on the right side of the Octalysis is one point more than the raise on the left side, the idea is that evening the sides out will result in the process of driving good and the process of Driver Coaching mattering more than just the end result.

For the white hat/black hat division of the Octalysis, the white hat was raised more than double what the black hat was raised. The idea is that the white hat focus should make the drivers feel good about the service and with more of the positive feelings such as feeling satisfied and fulfilled. The balance between white hat and black hat is important since having too little black hat could remove the sense of urgency which leads to the user feeling too relaxed about the service and maybe thinking “I will do it later!”. The goal is to have the users engaged and feeling that they want to be engaged now, later.

While using the Octalysis framework, a strong connection between the user needs and the result of the Octalysis appeared. Studying the Octalysis of Driver Coaching, the conclusion was that the service needs improvement in the white hat section. That means improving Development & Accomplishment, Epic meaning & Calling, and Empowerment of Creativity and Feedback. The Octalysis also showed that strengthening the right side a little more than the left could be beneficial since so many of the driver’s needs were connected to intrinsic motivation. This balance is already quite good, so only a slight raise should be the goal.

Comparing this to the user needs found in the analysis of the interviews, there are several connections. The top three most occurring needs were:
1. To see improvement
2. To feel like one is doing a good job
3. To get good grades

These three needs all have a strong connection with Development & Accomplishment. One could theorize about if this is a pattern that would repeat itself in other coaching services, maybe even in services in general. Then the Octalysis could be used as a complement to other methods of finding user needs.
5.2.4 Game Design Elements

The design proposal captures several game dynamics and mechanics. The authors believe that a concept that focuses on the mechanics and dynamics is beneficial since it gives the concept a purpose in a way that might not come as natural when focusing on implementing game components. The aim not to focus on components are backed up in the literature where several sources cite that implementing components without a reason does not raise motivation (Hunter & Werbach 2013; Yu-Kai Chou 2015).

Analyzing the concepts and what mechanic or dynamic they correlated to, a connection between the following could be made:
- **Narratives**: Sliders
- **Reward**: A-driver merchandise
- **Challenges**: Milestones
- **Feedback**: Automatic appreciation
- **Progression**: Expert Fleet

However, one could also argue that Emotions play a role in the Sliders as the driver can feel proud or happy about their achievement, the same goes for automatic appreciation, Expert Fleet and A-driver merchandise. Expert Fleet can be viewed as a Win-state even though the driver has to put in the effort to stay there and A-driver merchandise could be viewed as some form of Resource acquisition and as discussed could hopefully help with the macho culture and work on the social aspect of being a driver which corresponds to the Relationships dynamic. These connections might not be as strong as the one listed above but they are present and could most likely be evolved in a coaching service.

The in-house initiative The Game at Scania uses several game design elements. The Game uses Transactions and Competitions, these are elements that could be complementary to the coaching service. The dynamic Cooperation could also be explored further, the authors had early concepts that included Cooperation and believe that it could be a dynamic that could work in a coaching service if done right.

Whether or not Turns could be implemented is unknown to the authors. Turns were not in any of the early concepts and the authors do not see any obvious ways to incorporate it. However, this does not mean it is not possible. This leaves Constraints and Chance. Perhaps these could be implemented in a motivating way, but there are obvious issues with a coaching service that is constrained or based on chance since the goal is always to make the user excel.

One could discuss ethics in designing something to be highly motivating. Some core drives and gamification components are known to be addicting to humans such as casinos. In the case studied in this report where the service is a coaching service which should lead to great benefits for the environment and the economy of the transport company, it could seem innocent or even beneficial to use gamification to heighten motivation. However, it should be discussed where gamification turns unethical on a case to case basis.
6 Conclusions

In the following chapter the thesis comes together in that the research questions are answered, conclusions are presented and motivated, consequences for the user are discussed, and finally, suggestions for future studies are made.

RQ1 – What motivates users to take part in a coaching service?
From the insights and needs, it was concluded that there were themes that reoccurred in the conversations with the drivers. These were:

• Understanding
• Improvement
• Appreciation
• Social relations
• Security

All of these contributed to either motivate/keep the drivers motivated or, where they were lacking, to the drivers feeling unmotivated. The authors see a connection between several of these and the gamification theory. The themes Improvement and Social relations are very similar to Hunter and Werbach’s Game Dynamics: Progression and Relationships (Hunter and Werbach, 2015). The theme Understanding could be connected to Yu-Kai Chou’s explanation to why gamers are willing to do tedious work to get rewarded, he says that it has to do with them understanding why they need to do it and having a clear goal. They can see the big picture, the “why” (Chou, 2015). To make sure the user understands what the service can do for them and why certain limitations are put in place could, therefore, be important. On the other hand, what Bisset and Lockton says is partly contradicting this with his statement that the user does not always have to understand why a service or product is designed the way it is, sometimes it is enough to direct the user in the wanted direction without explaining why (Bisset and Lockton, 2010). Maybe the way to go is to explain to the user if the user would become frustrated otherwise.

Feeling appreciated is something that was found as a theme in the analysis, but it was also something the drivers literary said was important to them. This is not surprising to the authors since studies such as Groeneveld’s states that there is a connection between feeling appreciation and work engagement (Groeneveld, 2018).

Regarding security, the authors see a clear connection to Maslow’s hierarchy of needs. Safety and Security are on the second step in Maslow’s famous stair, the only thing more important being having one’s physiological needs met. The sense of security the drivers say they need could be interpreted as something they need to begin trying to achieve their full potential.

RQ2 – How can the Octalysis framework be used to find areas of improvement in a coaching service?
A way of using the Octalysis framework could be following the method that was applied to this case study. The method is as follows:

1. Gather enough information to be able to grade the service As-Is through the Octalysis framework.
2. Make the As-Is Octalysis.
3. Read the comment about the balance between Left-Right and Top-Bottom in your service.

4. Experiment with the Octalysis framework to see what core drives could be improved to get a better balance. The result of this should be a decision of what core drives to improve.

5. Brainstorm or use a method of ideation of your choice, come up with aspects that would raise the desired core drives.

6. Design your concept around what ideas raise the desired core drives.

7. Make an Octalysis of the To-Be service.

8. Read the comment about the balance between Left-Right and Top-Bottom in your service.

9. An iteration of the process could be necessary, though it was not in this case study.

The Octalysis framework ended up being a very useful tool for finding areas of improvement. The literature around gamification gave many ideas of things to implement but combining these with the Octalysis gave a clear structure that ideation could be based on.

Since intuition is used together with reasoning, the authors believe that it is important to have enough information to base the rating on. This includes getting a thorough understanding of the Octalysis framework and what aspects of a service corresponds to what core drive. As well as an understanding of the service rated.

The authors have a hypothesis that this process could work well in services other than the service in this case study. This could be other coaching services but also other sorts of services. Most services require or benefit from the user being motivated to partake in the service. A lot of services also have users that have been using the service for a while and are getting bored. The Octalysis proved itself useful in this case study, perhaps this can be true for other sorts of services. The Octalysis could be a good starting point for evaluating and starting the ideation process. The process presented above provides a structure that other research can continue to build on.

RQ3 – Which game design elements can be implemented in a coaching service?

As the design proposal was created the focus was on implementing what Hunter and Werbach call mechanics and dynamics, since focusing on these higher goals is important and often lead to a better result than just implementing components for the sake of implementing them (Hunter & Werbach, 2013).

In the case study with Scania’s Driver Coaching service the following game dynamics and mechanics were implemented in the design proposal (the bold words are the game dynamic or mechanic and after the italic word is the part of the design proposal in the case study):

- **Narratives**, in the form of the Sliders. The Sliders make the service more coherent and helps the drivers understand the service, everything should become more logical and make sense to them when they see the correlation between the grades and the fuel consumption.

- **Progression**, in the form of Expert Fleet. The service changes as the drivers get better and evolve, there is now a new level for them to experience.

- **Challenges**, in the form of milestones. The milestones offer the drivers clear tasks for them to work towards until the next coaching session.
• **Feedback**, in the form of *automatic appreciation* emails, the drivers get the information that Scania have noticed that they are doing good.

• **Rewards**, in the form of the *A-driver merchandise*. The drivers get something extra out of their efforts.

Whether or not this is something that works for all coaching services or even all services are questions that need to be further explored. The authors believe that for a professional service where the aim is to keep the professional feeling the method to focus on mechanics and dynamics could be a winning concept, based on the fact that it was a very smooth process to implement these in the Scania *Driver coaching* case. The combination of game mechanics and dynamics and the Octalysis framework resulted in a clear path where it was easy to see the opportunities to implement game elements in a way that kept the desired aspects of the existing service but will hopefully still raise motivation.

The authors also believe that Emotions, Win-states, Resource acquisition, and Relationships could be implemented in coaching service. Transactions, Cooperation, Competitions, and Turns could be further explored and perhaps implemented while the authors believe it harder to implement Chance and Constraints.

### 6.1 Consequences for the User

Hopefully, the drivers will experience the positive consequences of being motivated, having their motivation align with what their bosses and Scania wants them to do and feeling more appreciated at work. The risk, however, could be that if even more drivers get good grades, have the merchandise to prove it and talk more about their achievements it might seem like an even bigger challenge to get there because of the added pressure from everyone else’s achievements. The authors, however, believe that the good will outweigh the bad and that the way the drivers view improvement will change and that this design proposal is something that will affect both them and the environment in a positive way.

### 6.2 Future Studies

The authors suggest several studies that could be conducted, using this study as a starting point. Academically, studies about if the conclusions of this thesis can be verified and later, generalized. Does the design proposal raise user engagement? Could the Octalysis always be used as a tool in any service? Is it always more beneficial to implement game mechanics and dynamics, rather than implementing game components?

For Scania’s *Driver Coaching* service, the design proposal needs to be evaluated. An evaluation needs to take place to see if all components of the design proposal should be implemented. To do this more information about the *Driving Coaching* service could be collected. This information could, for instance, be how many drivers are motivated and how many are unmotivated, as well as how many drivers have good grades and how many have not so good grades. The drivers could be divided into several categories, such as unmotivated with good grades. When data for how many drivers are in these categories are collected, the cost of implementing the different components of the design proposal and the benefits it would offer could be calculated. Based on this, a decision about which components of the design proposal to implement could be made.
References


Hantosi Albertsson, S. (no date) *A triadic value proposition in the transport segment*. Linköping University.


Appendix A – Observation form

Translated version

- Get an idea of what it is like to work as a truck driver.
- What their working environment looks like.
- Do they like to talk while they are driving?
- How does the internal coaching work?
  - Differences/similarities between Driver Coaching.
- What does their workday look like?
- How do the grades affect their motivation?
- How do the grades affect their driving style?
- Information about the stars on the dashboard.
  - How are they used?
  - Do they motivate?
- How do they themselves think that they are driving?
- Do the grades reflect that?
- Do they themselves think that they have potential to improve?
- What motivates them to improve/continue to drive well?
- Do they trust the grades?
- Does it happen that they compare/ask about co-workers’ grades?

Original version

- Få en uppfattning om hur det är att jobba som lastbilschaufför.
- Hur deras arbetsmiljö ser ut.
- Tycker de om att prata medan de kör?
- Hur fungerar den interna coachingen?
  - Skillnader/likheter mellan Driver Coaching.
- Hur ser deras vardag ut?
- Hur påverkar betygen deras motivation?
- Hur påverkar betygen deras körstil?
- Information om stjärnorna på instrumentbrädan.
  - Hur används de?
  - Motiverar de?
-Hur tycker de själva att de kör?
- Speglar betygen det?
- Tycker de själva att de har förbättringspotential?
- Vad motiverar dem att förbättra sig/fortsätta köra bra?
- Litar de på betygen?
- Händer det att de jämför/frågar om kollegors betyg?
Appendix B – Interview questions

Translated version

Intro

1. How long have you worked as a truck driver?
2. What type of distance do you drive?
3. Have you done Scania’s driver training?
4. How long have you been coached?
   a. Have you had the same coach the whole time?
5. What do you think about being coached?
   a. Do you have a good relationship with your coach?
6. Do you use the Fleet-app (FMA)?
   a. What in the app do you use?

Main part

7. How often do you get a report sent to you?
   a. Do you look at the report before the coach calls?
   b. How does it feel to get a grade on your driving?
   c. Do you think the grades correspond with your driving?
8. Do you know when your coach is going to call you?
9. How often does your coach call?
10. Where are you usually when the coach calls?
11. Do you always answer?
12. What are the reasons for you not answering?
13. What do you think about talking on the phone while you are driving?
14. Could your coach contact you in any other way?
15. When you answer, what do you think about the conversation?
16. How do you think your driving style is?
17. Are there things you are working on to improve? In that case what?
18. What motivates you to improve your driving style?

Finishing part

19. How do you experience the coaching today?
20. Are you motivated to be in Driver Coaching?
21. Do you see any problems with the coaching? In that case which?
22. Which problem would you like to see fixed if you got to choose?
Original version

Intro

1. Hur länge har du arbetat som lastbilschaufför?
2. Vilken typ av sträckor kör du?
3. Har du gått Scaniass driver training?
4. Hur länge har du blivit coachad?
   a. Har du haft samma coach hela tiden?
5. Vad tycker du om att bli coachad?
   a. Har du en bra relation med din coach?
6. Använder du Fleet-appen (FMA)?
   a. Vad i appen använder du?

Huvuddel

7. Hur ofta får du en rapport skickad till dig?
   a. Tittar du på rapporten innan coachen ringer?
   b. Hur känns det att få betyg på din körning?
   c. Tycker du att betygen stämmer med din körning?
8. Vet du när din coach ska ringa till dig?
9. Hur ofta ringar din coach?
10. Var brukar du befinna dig när coachen ringar?
11. Svarar du alltid?
12. Vad finns det för anledningar till att du inte svarar?
13. Vad tycker du om att prata i telefon medan du kör?
14. Skulle din coach kunna kontakta dig på något annat sätt?
15. När du svarar, vad tycker du om samtalen?
16. Hur tycker du att din körstil är?
17. Finns det saker du jobbar med att förbättra? Vad i så fall?
18. Vad motiverar dig att förbättra din körstil?

Avslutning

19. Hur upplever du coachingen idag?
20. Är du motiverad att vara med i Driver Coaching?
21. Ser du några problem med coachingen? Vilka i så fall?
22. Vilket problem skulle du helst se åtgärdat om du fick välja?