Investigating the Effect of Gamification on a Software Engineering Company

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Abstract

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The aim of this Degree Project is to investigate how gamification can affect a software engineering startup company which uses the Scrum framework. The first part of the investigation focused on how to gamify the Scrum framework for a team of 6 people and on how the gamified Scrum framework affected the goals fulfillment. The second part of the investigation focused on how the gamified Scrum was received by the startup organization and on the effects that the gamified Scrum had on the motivation of the team. The investigation was carried out as an action research, where I as a change agent joined the company and became the Scrum master for the time frame of the project.

The game, Climbing Mount Scrum, was designed with the help of the GOAL framework and the Octalysis framework. The data collection was realized through both Quantitative and Qualitative methods. This mixed approach made it possible to investigate the research questions from more perspectives.

The Degree Project intends to show that gamification is a tool that can help small organizations to manage their Scrum framework better while also increasing the team spirit within the company. The conclusion indicates that introducing a gamified tool wouldn’t be hard to implement for similarly opened minded team as the one investigated in this project. However, there are some limitations as the timeframe of the project was two months which is too short to draw long term conclusions regarding the success of increasing the performance of the team.
Popular Science Summary

I used gamification in order to design a game for a team working in a Software Engineering company. Gamification means that we change certain tasks or working methods by making a game out of it. The purpose of creating a game for this team was to increase their work performance and to give them a new structure in which they can work better. For this study I joined the company and carried out this research by leading this specific team for 2 months.

The outcome of this study is that by making the team’s every day life into a game I managed to touch upon motivational factors that helped to the individuals to plan their work better. However, the statistical data didn’t show clear difference in this specific team’s performance if we compare the data from before and after the experiment. Beside the practical aspect this study also investigated how the individuals received this new working method and how their motivation was affected by this. The members of the investigated team felt that the game had positive effects such as increasing their team spirit and helping them to find motivation to close less interesting tasks faster. Fortunately, everybody was keen on participating in this investigation, so there were no conflicts regarding playing the designed game.
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1 Introduction

My Degree Project was carried out in a Budapest based startup company. The main task I intended to solve for them was to increase their work performance. I chose to fulfil this task by using Gamification mainly for personal reasons. In the past I had few attempts to gamify processes in an international student organization, where some of them were successful and some of them were unsuccessful. Since that I was following the literature and I saw that in education (Lee and Hammer 2011), in social marketing (Mitchell et al 2016) and in trainings and corporate environment there are many successful attempts (Dale 2014), but it hasn’t spread that much in software engineering yet (Pedreira et al 2014), despite the fact that in software engineering for example there are many repetitive coding tasks for which the employees are usually not motivated (García et al 2017). The best case scenario of this research would be to have a high external validity through a successful case (Bryman and Bell 2015) from which other software engineering companies could benefit as well.

1.1 Problematisation

In this Budapest based startup company 7 of the 11 employees were working as full-time programmers during the investigation period and the main profile is the development of a specific smartphone application. The company works with agile methods. The Scrum framework they are using consists of daily Scrum meetings and 2-3 weeks long sprints depending on the main goal of the sprint. The company often struggles to keep the deadlines and therefore many features to develop or bugs to be fixed “rest” in the backlog for a longer period than needed. However, the more important issue is that this way it’s difficult to estimate deadlines towards the different stakeholders, therefore one reason to carry out this research is that by gamifying the Scrum framework used in this company there is a possibility to increase the efficiency for the sprints, which would lead to a generally better work performance, and eventually it would create a more reliable ground for giving estimations and promises to the different stakeholders (Appendix 11.2). Wrong estimation of deadlines is one common problem, which leads to product or company failure (Cagan 2016). One reason behind this issue can be that the startup company is using a customized Scrum framework, which was formed quite spontaneously through the time, but the main reason is that in the software engineering industry it often happens that it’s impossible to estimate the resources which are needed for
developing a certain feature (Cagan 2016). It can easily happen that at the beginning of the sprint the developer says that for this task 3 days are required, but then during the 2nd day it occurs that no, for this task even 5-10 days can be required, which can jeopardize reaching the goal for the sprint. These are not unique issues; many small companies try to adapt the Scrum framework in a more customized way (Eloranta et al 2015). The fact that using Scrum methodology has positive effects on the teamwork, team performance and the overall performance in software developing companies is widely accepted (Lei et al 2015). However, a general method is hardly adaptable by every company, so there are many approaches to make changes or to extend the Scrum (Eloranta et al 2015). These approaches are often not well prepared, therefore leading to issues such the one described before in the startup company.

Gamification could be a solution; it’s already used by consulting companies to solve similar problems, but there is no universal solution as the problems and the people vary from company to company (Dymek 2017).

1.2 Research Purpose

The main purpose to carry out this research is that there are still many gaps in the field of Gamification. A recent study, Kasurinen and Knutas, 2017, gathered and analysed 1164 studies from the field of Gamification. One remark from their conclusion is that “Based on the study it is plausible to argue that the most pressing issue of the research work in gamification is to collect evidence on the practical applications and their impact”. There is clearly a need for carrying out cases like this action research based Degree Project in practice. Another reason for carrying out his research is that the participants’ aspect is often overlooked in these studies (Kasurinen and Knutas 2017). The studies talk about how the different games were designed, implemented and what were the outcomes from the investigated perspective, which were usually result oriented (Kasurinen and Knutas 2017). This is the aspect of the management level, the team leaders and so on, but the aspect of the participants or the “players” are not investigated in depth. When designing the game, the participants are also analysed, so the game fits them (García et al 2017), but it would be interesting to see what they think about being exposed to such an experiment, what they expect from it, how their expectation changes through time, and what is their feedback at the end. Also, very important to see how the promises can be fulfilled when gamification is on everybody’s mind. Did the behaviour of the people change because of the gamification or because of the fact that they were observed? More importantly it has to be made clear that there will be no consequences (such as cutting the salary) because
somebody is performing bad in the game, so the people don’t feel intimidated by the fact they will play a game and everybody will see their results.

Gathering more general knowledge from the participants before the actual gamifying process can possibly help in creating a better gamified system. The literature already has a strong focus on motivation in connection with Gamification. For Gamification the relevant categorization of motivation is the intrinsic and the extrinsic motivation. Intrinsic motivation is defined as the desire to perform an activity for its own sake, so as to experience the pleasure and satisfaction inherent in the activity (Deci et al 1989). Extrinsic motivation, in contrast, is typically defined as the desire to perform an activity with the intention to attain positive consequences such as an incentive or to avoid negative consequences such as a punishment (Deci and Ryan 2000). In the working environment nowadays, there is a trend to build more on the intrinsic motivation than the extrinsic as it can lead to better results and to more engaged employees (Benedetti et al 2015). When gamifying, one of the goals is to stimulate more the intrinsic motivation of the employees, so the games have to be engaging and not only result oriented, and especially they need to keep the “fun” at the right level (Dymek 2017, Kim and Ahn 2017).

1.3 The Research Questions

Based on the company’s request and the gathered literature I identified two main research areas for this Degree Project. The first is the “Gamification in Scrum for achieving better work performance”. Beside investigating the effect on the performance this area also includes the investigation on how the Scrum framework can be gamified, for which a recent study, García et al, 2017, will be the base as they established a framework through an action research carried out at a software engineering company. This framework will be critically evaluated and complemented by techniques and methods from other studies in order to create a board game for the startup company. The first research question in this area goes as following: “Q1: How do the tools and procedures prescribed by the Scrum framework lend themselves to being gamified?”. This question will aim to answer how a game can be designed that suits the needs of the company and still fits into the Scrum Framework. Problems such as how the different tools of the Scrum can be gamified, and how to create a corresponding board game have to be solved in this area. The second research question goes as following: “Q2: How does the implementation of a gamified Scrum framework affect goals fulfilment?” Within this question the most interesting topic from the company’s perspective will be investigated, which
is the question that whether gamification helped to increase the work performance of the team or not.

The second area is focusing more on “Gamification from the participant perspective”. With understanding more the players and incorporating their thoughts, the risks associated with rejecting the game or with getting bored fast can be reduced. At the first glance the buzzword Gamification can be deceptive. The first impressions are often closer to playing real games at work, and not about making games out of tasks or for complementing work (Dale 2014). Gamification is a relatively new definition, therefore it’s important to introduce it thoroughly, but before the introduction it’s a very exciting topic to collect feedback on what are the general thoughts of the future players about the whole idea. In case of a negative attitude or rejection there can be a problem, which has to be solved through more engaged collaboration with the players in the game design phase. The participants perspective for this research could possibly shed light on some overlooked shadows in the field of Gamification and encourage more case studies and investigations to aim for a better involvement of the players at the very beginning and at the very end of their research. The third research question, “Q3: How is the gamified Scrum framework received within a startup organization?”, will deal with the previously raised concerns. Finally, the fourth research question, “Q4: What effects gamification has on motivation?”, will be able to give some insights if gamification had any effect on the personal motivation of the investigated individuals.

1.4 Research Approach

The approach to investigate the effect of gamification on the areas specified before was an action research, where I was the change agent who joined the company and became one of the colleagues of the participants. This way I was able to monitor closely every step along the investigation period. I acted as the change agent through the whole 3 months investigation from which the designed game was played for 2 months by the Scrum team.

The goal of this project is to contribute with a detailed and hands on case to the existing gamification literature. The Degree Project intends to be as transparent as possible, so for example there is an extensive appendix (section 10) which contains all the data used for the analysis. Moreover, there were 4 versions of the game which was developed for the Scrum team, and all the 4 versions are presented separately in the appendix. The reason for presenting the game in such a detail is to make it easy the distinguish the difference between each game,
and to make it possible to re-create any of the game rounds. Although the replicability of this study is low as the game is designed specifically for these people at this very specific company, but similar cases could be carried out using the same elements, for example the same game with the same card decks and rules.

1.5 Risks

Also, many risks can be identified when designing the action research. In this case the main risks are connected with the game developed. A risk can be that the game will be rejected by the participants, which was mentioned already. Another risk can be that the players will cheat during the game which would affect negatively the outcome of the research. There is also a risk that the game will be too time consuming to manage or that it actually affects negatively the efficiency of the work performance. Another type of risk can come from the agile work environment, which could alter the game, e.g. a player has to travel abroad or a new programmer is hired. Luckily not any of the risks arisen during this research, which meant that the investigation could be carried out without any major alternation in the original project plan.
2 Literature Review

In this section the relevant theories and frameworks are introduced which were needed to carry out the investigation. These theories can be grouped in three subsections: gamification, motivation and scrum.

2.1 Gamification

A simple definition for gamification is “the use of game design elements in non-game contexts” (Deterding et al 2011). The first documented use was in 2008 and since 2010 it started to gain higher and higher popularity among researchers, consultants and businesses (McMillan 2011, Dymek 2017). One of the first famous examples is the application Foursquare, where by the customer check-ins many businesses were discovered or made popular (Dymek 2017).

Applying gamification aims to increase motivation and gain better efficiency in repetitive or “boring” tasks (Pedreira et al 2014). Therefore, in gamification different game design elements like badges, statuses, rewards, leaderboards, missions, points etc. are used to induce a desired behaviour in people (Kim 2015, Chp3). There are two types of game design elements and the combination of them creates the game environment. One is the game mechanics, which are actually moving the game forward (like achievements, combos, levels etc.) and the other is game dynamics, which is for satisfying the desire (like statuses, rewards, self-expression etc.) (Kim 2015, Chp3). Nowadays gamification attempts in businesses mostly build on goal oriented games where the structure is set by rules, and here a great challenge is to be able to keep the fun aspect of the game as well (Dymek 2017).

2.2 GOAL Framework

The GOAL framework presented in García et al, 2017 is one of the many frameworks already existing to help developing games for work environments. One reason for choosing this framework is that this has already been used on a Software Engineering company, which applies to my case as well. The other reason is that it fits well with the Octalysis framework, which encourages the game designer to think about the core drives and player types in the first steps

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1 On the following link it’s possible to read briefly about 90+ different case studies connected to gamification (90+ Gamification cases).
before testing the game. I followed the methodological support of the GOAL framework (Figure 1) during the Degree Project.

An important aspect is the players of the game, that also comes up as the second step of the GOAL Framework (Figure 1). Bartle’s player type is one of the most spread categorization of players. Bartle identifies 4 player types: Socializers, Explorers, Achievers and Killers (Bartle 1990, Bartle 1996). Socializers are playing games for the human interaction, they enjoy to work together with the others. Explorers are playing games for getting to know every small detail, secret and to do all the “side quest”. Achievers are playing games for getting as much rewards/points as possible, and to be the first. Killers are playing games for beating everybody else and to trick the rules (Bartle 1996). This type of categorization is based on the role-playing (online) games, so when applying this categorization for players in a real world game setting one has to be careful and critical towards this theory. A newer upcoming theory from Andrzej tries to identify the user types for any gamification design by a Player Type Framework (Marczewski 2015). The final outcome is the Dodecad of User Types, which categorizes the

![Diagram of GOAL Framework methodological support](image)
identified 12 user types in 3 different categories. Despite the fact that it’s a more thorough framework than Bartle’s player types, the applicability of Andrzej’s Dodecad of User Types can become quite complex when we start to design a game where we need to think about all player interactions (e.g. how socializers and achievers can play together). In Bartle’s case it means 6 kinds of interaction (3+2+1) and in Andrzej’s case it means 66 kinds of interaction (11+10+9+…+1), which have to be thought through. Moreover, the player interactions can be different in each game stage (Chou 2015). Based on this thinking and considering the scope of this Degree Project I used the Bartle’s player types to identify my players for the case and the game design. Still it has to be kept in mind that Bartle’s distinction is a very simplified way, meaning that it is just not possible to describe a player deeply enough with having only 4 categories and then putting the player into one of these. However, it can be shown that a player to what extend is a certain type of player, and then the type with the highest score is used to describe the player. This method certainly should be only taken as a direction in which the game designer should start the thinking.

The games can be broken down to 4 different stages from the point of the player’s journey: Discovery, Onboarding, Scaffolding, Endgame (Chou 2015). Discovery is the phase before even starting to play the game. This stage is often just sharing the idea of the game (or finding about the product if it’s a videogame) and setting up the boundaries. The Onboarding stage lasts until the players are able to play the game, so it’s more about teaching the rules. An example here is the strategy of LinkedIn to motivate its users to create a full profile. First, there is a progress bar saying that your profile is 60%-80%-100% ready, and then you are able to access all the possibilities. This stage has to be easy to be grasped by the users, as if starting to play the game is too complex can drive users away from the opportunity to even try out the game. The Scaffolding stage is when the game is on and users try to reach as many win states as possible. Once the user tries everything (at least once) the stage can be considered finished. For this stage the game has to consider how to keep up the motivation and engagement of the players so they won’t stop until they go through the game once. The Endgame is the stage which comes after the user tried everything in the game and reached the win state or states. The main question in this stage is how to keep your user playing the game. The game has to offer continuous meaning and interest. One psychological aspect can help in this phase, the Sunk Cost Tragedy. It can be described as the resistance to leave something that is already built up. An example for this can be Facebook. If someone decides to leave Facebook then the individual
for example will lose all his/her contacts gathered through the years beside other related content. Therefore, quitting Facebook is not easy after it engages the user (Chou 2015).

2.3 Octalysis Framework

One framework for designing games considering all the previously discussed issues is the Octalysis Gamification Framework (Chou 2015). In this Degree Project the participants perspective received also a high percentage of the attention, so this framework is a good starting point for the design of the game because it’s also human focused (Chou 2015). Most of the game design framework are function focused, meaning that they are focusing too much on finishing the job quickly. The function focused frameworks make the assumption that the tasks will be done because it is required from the employees, and not taking into account the human motivational factor (Chou 2015). This is one of the fail reasons for gamification projects in bigger corporations (Dymek 2017).

The Octalysis framework contains different levels. In this Degree Project the 1st and the 2nd level of Octalysis will be considered. The 1st level of Octalysis is about the 8 core drives of Gamification. The 2nd level is about applying the 8 core drives differently according to the 4 game stages discussed before. The core drives are the main reasons which make a game fun and motivate the player to do something in the game. The reason for the different actions in a game usually comes from the combination of more drives (Chou 2015). These 8 core drives will be a central part for the game design in section 4, therefore they are presented here one by one in detail, and then they are applied in section 4.

The first Core Drive is called Epic Meaning & Calling. “This core drive is activated when your system inspires people and gets them excited about being part of a bigger purpose or plan.” (Chou 2015, Ch5). An example can be the free GPS navigation application Waze, in which the users can inform the other drivers through the App about traffic jams and many other road information. Waze has a community power where you are motivated to share your knowledge with the other drivers. In Climbing Mount Scrum it is true for all the player types that the bigger picture is to see if Gamification is a useful technique for the company. Also, they can help in my Degree Project, which can be considered as a higher goal for participant in the game.

The second Core Drive is called Development & Accomplishment. This is the Core Drive which is in connection with the sense of growth towards a goal and accomplishing it. It’s not only about the goal, but about setting the right level of challenge for an individual (Chou 2015,
A very basic example can be the teacher who gives out stickers for the kids who are the most active in class, so the stars have a value and there is a challenge in achieving it. Then collecting the most stars gives a status of being the most active. One example for making a challenge out something is golf. The basic concept is that you need to put the ball into the hole, which could be accomplished easily by using our hard, but there is a rule that for example you need to use a golf-stick.

The third Core Drive is called **Empowerment of Creativity & Feedback**. The basic assumption with this Core Drive is that people like to invent and to create something new (Chou 2015, Ch7). Creativity is a critical part of every game. An average game is played for a time period of 2-8 months (Chou 2015, Ch7). There are games such as chess which is here for centuries and is still popular. Despite the fact that the endgame is well-known in chess, still for the diversity in how to achieve (or against who) the win state in chess is very popular. A more recent example is the videogame StarCraft, which is one of the videogames which is played for the longest time period (Chou 2015, Ch7). Studies also show that playing creative games or video games can have a positive impact on our brain (Glass et al, 2013). In connection with both, chess and StarCraft, it can be said that the instant feedback is also a factor that is appealing for a player when choosing these games.

The fourth Core Drive is called **Ownership & Possession**. This is the drive where the players are motivated because they feel like they own something (Chou 2015, Ch8). An example can be an online role-playing game (such as World of Warcraft), where a player invests a lot of time in enhancing a character, and then the player can’t stop to play the game as he/she already invested too much time. Additionally, there is the cycle that with having more and more points (XP, money etc.) more and more options open up.

The fifth Core Drive is called **Social Influence & Relatedness**. “This Core Drive is the engine behind themes like mentorship, competition, envy, group quests, social treasures and companionship” (Chou 2015, Ch9). Mentorship can be imagined as there are more experienced players who can help the newer ones. Competition is the opportunity to compete in different aspects through the game, or to compete for a special reward. Envy is about creating situations or challenges which can be beneficial for one player, so the other player will seek the same thing. The companionship and the group quests are usually achieved through team challenges and tasks. Social treasure can be something that has a value through the game and it can be also exchanged between the players, so it can be imagined as some kind of a reward or gift system.
Also, relatedness is a part of this core drive. Relatedness deals with attachment, emotional associations and the feeling of nostalgia (Chou 2015, Ch9).

The sixth Core Drive is called **Scarcity & Impatience**. This core drives builds on that there is something that can’t be obtained by the player immediately (Chou 2015, Ch10). This can be something that will be available after some time, for example there are video streaming pages where after watching 1 hour of content one has to wait another hour before watching something new. Maybe the user doesn’t want to watch a new content, but the waiting time can have an impact on the patience. Also, this can be something that will be available after some greater effort, for example unlocking a new map or a new car in a video game because of fulfilling a challenge.

The seventh Core Drive is called **Unpredictability & Curiosity**. This drive builds on not knowing what will happen next (Chou 2015, Ch11). Adding randomness to the game induces the curiosity of the players, which eventually will engage them to play the game.

The eighth Core Drive is called **Loss & Avoidance**. This drive builds on the fear of losing or on the fear that something negative can happen (Chou 2015, Ch12). This effect can hold back the players from rushing through the game with emphasizing that they have to risk something in order to get further.

### 2.4 Motivation

Intrinsic and extrinsic motivation is the categorization which often comes up when discussing gamification (Sailer et al 2017). Gamification should induce the intrinsic motivation leading to the point where the employees find their work interesting for the work itself. The Intrinsic-extrinsic motivation theory is highly criticized because of the contradiction that in many cases they try to induce the intrinsic motivation with extrinsic motivation. For example, motivating with rewards, which is an extrinsic motivation, can lead to motivating the employee to reach the reward with the work, but it also can undermine the employee’s autonomy, creativity and individual interest as he/she can have the view that it’s not important to put more energy into the work after reaching the level for the reward (Gagne and Deci 2005). Therefore, a more comprehensive and a better fit theory for organizational behaviour is the Self-Determination Theory (Gagne and Deci 2005). In this theory the two distinctions are the autonomous motivation and controlled motivation. Autonomous motivation can be interpreted as an example for intrinsic motivation, because it comes from the inside and not by an external force.
as it would in case of the controlled motivation, which could be associated more with the extrinsic motivation (Gagne and Deci 2005). Self-Determination Theory is built on the basic psychological needs, which makes it a crucial theory to investigate game related issues. Self-Determination Theory supports that intrinsic motivation can be reached when the individual has the right level of autonomy and also feels that he/she is competent in the given task (Gagne and Deci 2005). But these two elements are not enough, the third important element to reach the right level of intrinsic motivation is the physiological connection with the task (Gagne and Deci 2005). It can easily happen that a highly capable employee is not performing well despite the fact that the employee is very competent and was granted a high level of autonomy. There is still a barrier that makes the task unattractive, this can be because of any kind of personal reason. This is the case when gamification can create a new spark in the motivation of the person which eventually makes the individual motivated and gets the task done in the required quality. Self-Determination Theory can be easily related to gamification in this sense. Both theories seek to help the individual to be able to finish a certain task while having a happy attitude and to make it possible to find some sort of satisfaction in work.

The Flow Theory also gives an extra aspect to the Self Determination Theory. If a person feels competent for a task and is also motivated to do it, then the person can easily experience the flow when the sense of time and space can be lost. Flow is the mental state of operation in which a person performing an activity is fully immersed in a feeling of energized focus, full involvement, and enjoyment in the process of the activity (Ullén et al 2011). When playing games, it is easy to experience that suddenly many hours just passed away. This experience is something that could be achieved through gamification even at a workplace. The flow state is a very a beneficial state to be in as it is psychologically highly rewarding and therefore is sought by the individual (Ullén et al 2011). This theory and gamification can be combined together in the Homo Ludens theory (Huizinga 1955). The Homo Ludens theory discusses the importance of the play element in our culture and society (Huizinga 1955). Huizinga argues that “play” is older than the culture itself and was already known by the animals before the humans were there (Huizinga 1955). The playfulness of the individual and the psychological desire of the individual to feel the flow state can be connected to the Homo Ludens theory. There is a need to give the opportunity to any individual to spent his/her time while being happy and playing games can be one way to reach this extra psychological factor, which eventually plays a big role in the Self-Determination Theory or in increasing the intrinsic motivation (Huizinga 1955, Gagne and Deci 2005).
In practice what is important that theories such as the Self-Determination Theory or the popular intrinsic and extrinsic division of motivation should be put in use in an organization to help the employees reach the state when they are happy at the workplace (Benedetti et al 2015). According to the study of Kuvaas et al 2017 it is very important for an organization to address intrinsic and extrinsic motivation as separate motives. The study concluded that the increase of extrinsic motivation is not advantageous to either the individuals or the organizations. Another conclusion of the study was that the organizations should be cautious when they apply coercive controls such as close monitoring. For this Degree Project it means that gamification, as a tool, should be used in a way that it has an impact on the intrinsic type of motivation. In practice it means that the focus should not be on the rewards, but on being able to motivate the people to enjoy the player journey. The 8 Core Drives from Octalysis Framework can be a tool that helps to develop a game which can motivate different kind of people in different ways through the game. Gamification tends to use leaderboards and call winners and losers, so based on Kuvaas et al 2017 the game has to be careful with showing the progress of an individual compared to the others and it has to be specified that the game will have no negative effects on the working conditions of any individual.

2.5 Scrum

Scrum framework is a popular way of working agile in Software Engineering (Češka 2015). With agile the functionality is the most important aspect in the development, the improvement can come later (Tonnquist and Horluck 2009). This allows the teams to work faster in comparison to the more traditional waterfall method (Tonnquist and Horluck 2009).

Scrum has been introduced by Ken Schwaber and Jeff Sutherland in 2001 and since that they continuously update the Scrum guide (Schwaber and Sutherland 2013). The name of this framework is based on formation of players in rugby. The SCRUM framework defines roles, events, artefacts and rules for the development (Schwaber and Sutherland 2013). There is also an agile manifesto, which contains the 12 principles of Scrum (Manifesto for Agile Software Development 2001).

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

2. Welcome changing requirements, even late in development. Agile processes harness change for the customer’s competitive advantage.
3. Deliver working software frequently, from a couple of weeks to a couple of months, with a preference to the shorter timescale.

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

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

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

7. Working software is the primary measure of progress.

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

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

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

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

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

In reality it means iterative and incremental development with short iterations. This allows to develop the software in smaller parts, for example feature by feature. This way the customer is also able to react along the way and the possible misunderstandings can be corrected more quickly. There are roles that can be identified within the Scrum framework. There is the product owner. His/her responsibility is to decide on the features that have to be developed for the product and also, he/she acts as the customer or even in some cases the product owner can be actually the customer (Lima et al 2012). If not the product owner is the customer then there is the role of the customer, who is the one who gives the feedback about the product (Lima et al 2012). There is the Scrum team, who is responsible for the development of the product (Lima et al 2012). The most important role from my point of view is the Scrum master, who has to oversee the tasks and the Sprints (Lima et al 2012), as I will fulfil this role through the investigation.
The main working method in Scrum is the Sprints. The team sets up a goal and defines the tasks which are needed in order to reach the desired goal, and then they usually have 2-3 weeks (10-15 work days) to fulfill the tasks and reach the goals. On this journey the teams mostly use the following tools: Sprint planning, Sprint backlog, Product backlog, Daily meetings, Agile board, Retrospectives. The Sprint planning contains all the planning methods which lead to the point that a Sprint can be kicked off. The Sprint backlog is the tool which contains all the tasks that have to be fulfilled during the sprint. The Agile board divides the tasks from Sprint backlog into categories such as “to be done”, “in progress”, “done” or similar. The Product backlog is the tool which contains all the tasks that have to be done regarding the product. The Daily meetings (or Daily Scrum) is the short meeting that happens every day, and the purpose of this meeting is to get every member updated. Every person has 1 or 2 minutes at this meeting to answer the following 3 simple questions: “What was I doing yesterday?”; “What am I going to do today?”; “What problems have I been dealing with?” (Schwaber and Sutherland 2013). The retrospect should be used at least once in a Sprint. This tool helps to reflect on the work of the team and gives an instant feedback of the team performs.

There are attempts to gamify the Scrum framework. For example, the company Atlassian, the creator of JIRA, which is a software solution for doing Scrum, introduced a Gamification plug-in (Green 2014). The plug-in creates a badge next to the profile picture of the users on which they can collect points by closing tasks through a sprint. There are also different statues which can be obtained by the players. The advantage of this plug-in is that it is easy to install next to the JIRA software. The drawback of this plug-in is that it is too general and only gamifies the Agile Board by letting the player profiles to collect points and badges. There are no rewards specified. The rules have to be set by the company individually, so it can engage more people. Without putting more energy into this plug-in it is only a software which allows the user to collect points and badges, so the user can compare himself/herself to the others.

There is another attempt called Scrum Hero (Deery 2014) which has a similar approach to this Degree Project. The daily meeting was gamified with introducing a new kind of board instead of the usual Agile board, the Scrum Hero board. In this case also the Scrum master is the game master. The goal of that project was similar, the game motivated the players to give better estimations, so the Scrum master can plan better when to release a certain feature. However, the approach was different then in my case. The game was based on betting on each other’s estimation. The players had tickets which could be placed on tasks and if the task was fulfilled
on the estimated time the tickets were doubled, otherwise the tickets were lost. The player could only bet on other people, so this way the developers could learn how the others perform in the team. The earned tickets first could be used to “save dodos”, and the person with the most tickets could choose what kind of dodo to save, but then from the second version of the game the tickets were used to move on a complex board and to open up different quests. They conducted an experimental design where the game was used in a 4 weeks test period to see whether the investigated Scrum teams managed to increase their productivity, which was measured by the number of hours and by the number of closed tasks. Therefore, there were teams observed who used gamified Scrum and teams who didn’t actually use gamified Scrum as in a regular experimental design (Bryman and Bell 2015, Ch2). Their outcome was that the gamified teams worked more hours than the not gamified ones, but surprisingly the not gamified teams closed more tasks than the gamified ones. The reason behind the difference was that every team had different habits in defining what is a task and how to administrate them. This investigation also looked at the morale of the teams, where the result was that the gamified teams were a lot more motivated to attend meetings and the people felt more productive than in case of the not gamified teams. This study looks promising, but the major drawback is that it was only investigated for a 4 weeks long period. 4 weeks is enough for maximum two sprint rounds, which is a short time to draw major conclusions, so the validity of the study is low. The other problem with the Scrum Hero study is that the investigation wasn’t standardized, so the reliability is also low as we can’t be sure that what was the actual reason behind the contradiction that the gamified teams worked more hours but closed less tasks than the not gamified teams.
3 Methodology

This section discusses the research design and the chosen research methods. It introduces the used methods and reflects upon their benefits and drawbacks. This section also shows what kind of empirical data was collected. Finally, it discusses the different theoretical frameworks which were used.

3.1 Research design

Action research can capture best the nature of this Degree Project. In action research the researcher becomes part of the organization in order to engage more with the participants in solving the problem (Bryman and Bell 2015, Ch16). The emphasis on the practical outcomes differentiates action research from the other forms of qualitative investigations (Bryman and Bell 2015, Ch16). Action research intends to create the bridge between the researchers and the practitioners (in this case the managers) (Bryman and Bell 2015, Ch16). Action research says that these kinds of investigations are designed for real problems within an organization and are designed to assist in the solution of the problem (Argyis et al 1985). In this case the company is not doing well with estimating their workload, and they expect to have an increase in the performance with introducing gamification to the company. Additionally, action research is intended to contribute both to the academic theory and the practical action (Argyis et al 1985), so this investigation beside solving the problem of the company, also intends to contribute to the gamification theory and to additional social aspects through the second research area mentioned before in the introduction.

The structure of the action research often involves iterative processes of problem-identification, planning, action and evaluation (Argyis et al 1985). This aspect is reached by the GOAL Framework which is explained in more detail in subsection 3.3.1. The limitations of an action research are similar to a case study. The action research is carried out in a specific organization or in a specific group of people, so the conclusions can’t be generalized and the replicability of this kind of research design is low (Bryman and Bell 2015, Ch16). Compared to a case study the action research can have one more drawback, which is in connection with the person who joins the organization as the researcher. The bias from the researcher’s view through the whole study can have major impact on the outcome of the study (Bryman and Bell 2015, Ch16).
The action research’s environment is a Budapest based startup company. The company is working on offline and online smart phone applications primary for iOS devices. At the beginning of the research the first version of the offline solution was already released and the company was preparing for releasing the first version of the online solution as well. The company at the beginning of the action research had 11 employees and some external contractors. The office is a typical open office space with having all the core employees together. 7 people are working on software engineering, some from development and some from research aspect. These 7 people are working in the Scrum methodology; therefore, they are the possible scope for the action research. I joined the company as a Development Manager through the time my Degree project was carried out. This means that beside other work related tasks my main responsibility was to carry out the gamification of the Scrum framework. I became the Scrum master for the period of the action research. This role consists of two main tasks. One is to prepare the upcoming sprint. The other is to lead the daily meetings. In reality it meant that I had to be at the company on every workday and focus on the gamification investigation about 15 hours/week in average through the 2 months when the game was played. This time estimation includes the leading of the daily meetings, the daily administration of the game both for the company and for the Degree Project, participating in the Sprint planning, the preparation of the kick off meetings (JIRA administration, organizing the meeting etc.), leading the kick off meeting, overseeing that the game rules are kept and doing all the data collection for the Degree Project such as the interviews and the focus group discussions within the company.

There are some limitations for this action research as well. The first limitation is the time constraint for executing the research. This investigation was carried out within the scope of a Master Degree Project; leaving about 3 months long period for the action research from which 2 months were used for playing the game. The second limitation is the replicability of this action research (Bryman and Bell 2015, Ch16). As the game is designed specifically for one team in one company it would be hard to implement the same ideas in a different organization. The basic ideas and concepts can be used as inspiration for kicking off similar projects. The third limitation is that 2 of 7 employees in the scope are external contractors. Luckily 1 of them is regularly in the office, has his own desk, and attends the Scrum related meetings, so 6 people could be invited to take part in the action research.
3.2 Data Collection Methods

This subsection will introduce all the data collection methods that have been used during the action research. It will be specified at each method that for which research question(s) was the method used as an input. All the research questions required a different approach so this led to a diverse set of quantitative and qualitative methods that were used during the study. The goal with using so many methods is that the different methods can complement each other, which helps in discovering more points of view. The corresponding research questions for the first research area, the Gamification in Scrum for achieving better work performance are “Q1: How do the tools and procedures prescribed by the Scrum framework lend themselves to being gamified?” and “Q2: How does the implementation of a gamified Scrum framework affect goals fulfilment?”. The corresponding research question for the second area, the Gamification from the participant perspective are “Q3: How is the gamified Scrum framework received within a startup organization?” and “Q4: What effects gamification has on motivation?”.

3.2.1 Organizational Ethnography

The researcher joins the organization as an observer in order to investigate the given organization from some aspect. One of the most difficult steps in ethnography is to find the relevant social settings for the research and to gain access to them (Bryman and Bell 2015, Ch17). In this case the relevant social settings were easy to identify as they were the meetings connected to the Scrum, specifically the daily meetings and the kick off meetings. During these observations I stayed passive and didn’t participated at all. The observations were made during the initial phase before the gamified Scrum was introduced (Appendix 11.1). One of the main drawbacks of ethnography is that the subjects tend to behave different than the usual because of the presence of the researcher (Bryman and Bell 2015, Ch17). In this case the bias can be reduced a bit by the fact that the subjects didn’t know at the time of the observations that what is going to happen to them, so the fact that there is going to be a gamification experiment was not known prior the initial interviews, which were conducted after the observations. Only the CEO of the company was aware of what is going to happen, so his behaviour could have been biased through these observations. Unfortunately, there was no possibility to attend these meetings in a covert role as it was clear to the Scrum team that I’m going to do my Degree Project from the company. In case of the covert role the subjects would not be aware that the researcher is researching them (Bryman and Bell 2015, Ch17). Another drawback of this method is the bias coming from the researcher’s point of view as probably different researchers
would emphasise on different aspects from their observation. This qualitative method contributed to Q1.

3.2.2 Structured Interview

Structured interviews were used both at the initial interviews and the closing interviews (Appendix 11.3 and 11.7), which were done with all the participants of the action research. This quantitative method contributed to Q1, Q3 and Q4. Structured interviews are considered a quantitative method because they try to standardize both the questions and the answers that can be given. The aim is to give the exact same context of questioning for all the interviewees (Bryman and Bell 2015, Ch8). The goal with the structured interview is to maximize the reliability and validity and by that in an ideal case there is a possibility that if the same respondent is asked twice, then the answer will be the same at the second time as well (Bryman and Bell 2015, Ch16). The benefit of the structured interview is that the answers are easy to code and to compare. The drawback in comparison to a qualitative method is that here the interviewees are not allowed to change the direction of the questions or to add new questions or points to the interview (Bryman and Bell 2015, Ch16). In this study I preferred the structured interviews, because there was a need to collect answers which can be compared easily in order to build up a game environment that fits the need of all the interviewees. Of course, the biggest drawback is that this way I could lose random insights that could have helped to develop a better game. However, to compensate this effect I also conducted focus group discussions at the end of each game round to make it able to collect qualitative feedback for this research topic as well. The structured interviews were carried out in personal meetings with the interviewees and the responses were noted down with paper and pencil. Before the interview we agreed with the participants that they can specify their own “nickname” for the Degree Project, so in case they want anonymity they can choose to have it. Therefore the 6 players for the game were: Christoph, Mike, Peter, Peti, Sydney, Thomas. It’s important to mention as a bias, that Peter, the CEO, already had a basic knowledge of what is gamification and how will this Degree Project look like as I needed his permission to carry out the action research.

3.2.3 Unstructured Interview

There is one unstructured interview that was the very last interview of this action research. The closing interview with the CEO (Appendix 11.8) was conducted to complement the quantitative data collected from the software JIRA. The benefit of such a qualitative method is that the
respondent is almost completely free to direct the discussion as the researcher only prepares with a brief set of prompts, or a range of topics to discuss, or also with a single question to ask (Bryman and Bell 2015, Ch16). The drawback of this method is that as it resembles a conversation it is hard to analyse so the right conclusion is found. In this case I prepared for the unstructured interview with the final analysis of the data collected from JIRA (Appendix 11.9) and that data was shown to the interviewee to reflect upon. The response was noted down right at the interview and it aims to contribute to Q2.

**3.2.4 Focus Group Discussion**

The original idea for the focus group is to make it possible to interview people in an unstructured way about a certain experience that we know that they had (Bryman and Bell 2015, Ch19). Usually a group of 6-8 people are collected together and then with the help of a moderator they enter into a discussion about the topic that is introduced by the moderator. The benefit is that the researcher can get multiple feedback in a short time. The drawback is that in this setting not every person will contribute on the same level, so aspects can be lost which be explored with individual interviews, but on the other hand the interaction between the people can induce new ideas which wouldn’t be possible to get through an individual interview (Bryman and Bell 2015, Ch16). This qualitative method was used to complement Q1. In case of the focus group discussion on game design I was highly involved as the moderator, because I already set up clear boundaries within the participants were able to brainstorm ideas (Appendix 11.5). In case of the focus group discussions between the sprints I tried to be involved as less as possible, because my interest was to see what are the main points that the player can bring up by their own, because probably those will be the points that needs more improvement for the upcoming game rounds (Appendix 11.6). In these focus groups the number of participants was between 4-6, which is a bit lower than in the definition, but in this case, there were only 6 people involved and it is hard to prepare for no show ups.

**3.2.5 Questionnaire**

There was one questionnaire filled out by the participants before the game design phase contributing to Q1. This was a Bartle’s test. I chose 30 questions from this database the way

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2 Database of questions suitable for Bartle’s test: [www.andreasen.org/bartle/questions-en.dat](http://www.andreasen.org/bartle/questions-en.dat)
that for each player type the maximum points to be reached was 15, so there is equal chance to
collect points for all player type. The same questionnaire was filled out by all the participants
and at the same time, so the bias can be avoided. The questionnaire and the evaluation of it can
be seen in Appendix 11.4 and 11.12. The benefit of this quantitative method is that the
participant’s player type identification wasn’t biased by my judgement. On the other hand, a
questionnaire like this only gives a direction or an idea what can be the outcome for a certain
person as for example we can never be sure if the participants took the questions seriously and
gave an honest answer.

3.2.6 Quantitative data from JIRA

The company is using a software called JIRA to monitor the sprints, which can be used to
evaluate the performance of each sprint at a later point. Before setting up the game I was
studying this database to find the key performance indicators (KPI) which I should observe
during the research and collect them as data. After the game was in use I observed the KPIs at
the end of each sprint. This way the performance becomes measurable and it will be easier to
evaluate Q2 at the end by comparing the data from before and after the introduction of
gamification. For strengthening the outcome from this quantitative data one more qualitative
interview (the closing interview with the CEO) was added for answering Q2. The pure
quantitative data wouldn’t take into account many other qualitative factors, which could lead to
false conclusions, so adding a qualitative interview could lead to a more thorough answer.

3.3 Frameworks

This subsection will describe how the two already introduced frameworks, the GOAL
Framework and the Octalysis Framework, were used up as a tool in this study. These
subsections focus on the practical use of these frameworks.

3.3.1 GOAL Framework

The GOAL Framework will be used from García et al 2017 as a base to design the game (Figure
1). This means that first the business objectives and the player types will be identified. After
this step the game design elements has to be decided and the game has to be built. Finally, the
result has to be monitored and constantly evaluated until the game becomes stable. For setting
up the GOAL Framework I will use individual structured interviews in order to get as much
comparable feedback as possible. Based on positive examples (Landers et al 2014, Hamari 2015) the main game design elements will be the leaderboard and the badges. The actual game will be a real-life board game, where the board functions as a leaderboard, and where different levels function as badges that can be reached by the players.

The Investigation section (4) will also follow the structure of the GOAL Framework, so the steps of the framework can be easily distinguished. The GOAL Framework fits really well with the action research setting as they are both an iterative process. The structure of the action research resembles the GOAL framework in the stages: problem-identification, planning, action and evaluation in an iterative way. The approach of the GOAL Framework encourages the game designer to become part of the game in some sense. In this case I became the game master through the game, which meant that I was present at all the events which created an interaction for the game, and I had to oversee if the rules are kept. This role helped in monitoring the game and this way I could easily evaluate the previous round so the next one could have been planned and executed better. The benefit of this framework is that it gives a clear and understandable structure that incorporates the possibility to change elements in the game through the iterative approach. Although, there are some limitations. The GOAL Framework assumes that after the gamification goals are identified and the players are analysed the designed game will be a game that is accepted by the players and only needs correction along the way. The GOAL Framework would not be able to handle if it occurs for example that all the players are Killers, except one who is a Socializer. A game designed for this situation can easily result in alienating the socializer player who could possible reject the game and lose motivation at work as well. Moreover, a game designed only for Killer players could result in causing more conflicts between the colleagues. The GOAL Framework is designed for an ideal case when the player types are diverse enough and the players are also keen on playing the game. The unexpected social situation can’t be handled by this framework. Fortunately, this action research was an ideal case for using the GOAL Framework, which will be detailed in section 4.

3.3.2 Octalysis Framework

The Octalysis Framework introduced in section 2.1 is the framework used for the actual game design. The framework has to be taken into account along all the steps of the GOAL Framework (Figure 1). The Octalysis Framework will be the main concept to help me in designing the Scaffolding phase of the game where I will take into account only the player types which will be playing the game. The 8 Core Drives will be important for introducing diverse game
elements, so all the players will have the motivation to play the game. The benefit of this framework is that it gives a structure and tries to divide the different motivational factors into small pieces on which it is easier to design. The drawback of this framework is that it can be applied in many cases. For example, in this case the game stages vary from the general games, so the framework was mostly used only for designing the Scaffolding phase (section 4).

3.4 Reflection on the Methodology

This subsection’s purpose is to put more attention on the way that how this research was carried out. It is a rare opportunity that a person can join an existing organization in a way that the person carries out a research while also taking care of smaller work related tasks. This kind of action research design is a rare and a needed contribution to the gamification literature (Kasurinen and Knutas 2017). Through the research period I received a very high autonomy to carry out this research. I had the full cooperation and support of the organization, which made it easier for me to experience more with the different methods. The opportunity to actually design a real game that is played by an existing team while myself as the only game master could “manipulate” the game is a good base to fully utilize the tools for gamifying a company’s life. Also, this “game manipulation” is a potential source to bias the study. In order to avoid the bias from the high autonomy I tried to be as less involved in the awarding system of the game as possible, so my role would be only the leading of the game, which can be defined as an administrative task.
4 The Investigation

This section contains the whole gamification experiment of the action research. As it was specified before, the structure of the section will follow the steps of the GOAL Framework (Figure 1). The gathered empirical data will be presented at the corresponding step(s) of the investigation.

4.1 Game design phase – creation of “Climbing Mount Scrum”

This subsection shows the design of the first version of game that was introduced to the company. First, the steps before the actual design collect the data regarding the objectives of the game, the expectations towards the game and the players types. After the basic knowledge is gathered the first version of the game can be designed. This subsection is the preliminary part of the GOAL Framework (Figure 1) and it shows that what is the basic game from which the final design was reached later.

4.1.1 Identify Gamification objectives

In order to set up the objectives of this project first I had a structured interview with the CEO, Peter (Appendix 11.2). The goal of this interview was to identify where the biggest need for gamification in the company is, so Peter was asked to talk about the weaknesses of the company and to choose the one weakness that he wants to focus on when applying gamification. Then he was asked to tell more about the identified weakness. Finally, he was asked to choose the people who will be involved in playing the game.

Peter tried to identify the 3 biggest weaknesses, but at the end we ended up with 2 weaknesses. One is that the company is bad with planning ahead. Meaning that it’s hard to estimate how much time is needed to develop a feature, or what can the company achieve within 1 Sprint. The other is that Peter feels that the employees in the research part of the team have a weaker collaboration than the employees working on the development part of the team. The tasks are usually distributed and then they all work on their own task alone. From these two identified weaknesses Peter chose to focus more on the planning ahead issues. This means that the game will be designed to help the Scrum team to plan their workload better. From the business perspective it would be really beneficial to fix this weakness as it’s hard to give estimations to the different stakeholders, which has a risk. For example, the question when the company will
have the android release is an interesting question both from development and business perspective. And this question is very relevant nowadays. There is a need in the company for a good and reliable way of estimating deadlines, and this estimation depends on the team and on every individual at the same time. Also, if gamification increases the performance that’s an extra, but the estimation issue has the highest priority nowadays. Peter emphasized that planning is the link between the development and business. As it’s a small company actually everybody who is involved in the Scrum contributes to this weakness, so the 6 players for the game will be: Christoph, Mike, Peter, Peti, Sydney, Thomas.

### 4.1.2 Expectations Towards the Game

Before the player analysis the expectation of the future players was investigated through the initial interviews (Appendix 11.3). The structured interview first collected the general background data of the players (the nickname for the research, the age, the education background and the work experience). The first 3 things to come to their mind about gamification was collected to see what association the players have. Then the concept of gamification was explained whether the person knew it before or not. Finally, the expectations and the ideas for possible rewards were collected.

The results show the 5 out of 6 participants fall into the age between 25-30. Regarding the education background, 1 person has a PhD, 2 people have MSc, 1 person has a BSc, 2 people have high school diplomas. One of the last 2 people has been studying software engineering for the last 8 years. The other person stopped with his studies and started to work, but he is doing an online degree. Regarding the software engineering background only 2 out of 6 people have been studying that field, and interestingly these 2 people are the ones with the high school diplomas. 4 of the participants have 2-5 years experience in software engineering, while 1 person has 1,5 years, and 1 person has 19 years. It can be said that the group of the players’ is quite homogeneous.

Table 1 shows the 3 things that came to mind first about gamification. Only motivation was mentioned more than once. Most of the mentioned things can be connected to the concept of gamification, which shows that the word gamification can be easily associated with the meaning behind it. This means that the scope of gamification is very broad.
<table>
<thead>
<tr>
<th>Things</th>
<th>Nr. of mentioning</th>
</tr>
</thead>
<tbody>
<tr>
<td>Something good/positive</td>
<td>1</td>
</tr>
<tr>
<td>Board games</td>
<td>1</td>
</tr>
<tr>
<td>Cooperation</td>
<td>1</td>
</tr>
<tr>
<td>“I should google it”</td>
<td>1</td>
</tr>
<tr>
<td>Something that is enjoyable for all</td>
<td>1</td>
</tr>
<tr>
<td>Underestimating the fact that the work can be enjoyed purely for itself</td>
<td>1</td>
</tr>
<tr>
<td>Serious tasks made into games</td>
<td>1</td>
</tr>
<tr>
<td>Competition</td>
<td>1</td>
</tr>
<tr>
<td>Fun</td>
<td>1</td>
</tr>
<tr>
<td>That we try to make the inconvenient things more convenient</td>
<td>1</td>
</tr>
<tr>
<td><strong>Motivation</strong></td>
<td><strong>2</strong></td>
</tr>
<tr>
<td>Team Spirit</td>
<td>1</td>
</tr>
<tr>
<td>RPG (Role Playing Game)</td>
<td>1</td>
</tr>
<tr>
<td>Levelling up</td>
<td>1</td>
</tr>
<tr>
<td>To make a process similar to a game</td>
<td>1</td>
</tr>
<tr>
<td>Game</td>
<td>1</td>
</tr>
<tr>
<td>Productivity</td>
<td>1</td>
</tr>
</tbody>
</table>

Table 1 – The first 3 things that came to their mind when they heard Gamification

The majority of the interviewees had no prior knowledge about gamification, so at this point of the interview it was useful that I explained the concept of gamification regardless the prior knowledge and then talked a bit about what is going to happen with the Scrum and that a game will be added to the everyday work life. In general, it can be said that everybody is positive towards the gamification experiment. 6 out of 6 interviewees were curious what’s going to
happen. 2 out of 6 already started to ask questions how it looks like, how I can measure the effect of the experiment etc. 1 out of 6 mentioned that he is a bit sceptical. 1 out of 6 raised the concern that probably at the beginning it will be interesting, but there is the challenge to keep up the interest for a longer period of time, which is much easier with the regular Scrum framework as it looks more like a work tool to which is easier to get used to.

The most important question was asking directly about the expectations of the future player. The answers can be grouped into two sections. One is what should, and the other is what should not, the gamification do. The answers were gathered in Table 2. The expectations look quite fair and are aligned with the concept of gamification.

<table>
<thead>
<tr>
<th>Should</th>
<th>Should not</th>
</tr>
</thead>
<tbody>
<tr>
<td>gain a valuable experience from it</td>
<td>be too much administration</td>
</tr>
<tr>
<td>be fun and funny</td>
<td>affect the effective work hours</td>
</tr>
<tr>
<td>be a plus motivation</td>
<td>belittle/destroy the current workflow/tasks</td>
</tr>
<tr>
<td>be a new exciting aspect of spending time</td>
<td>decrease the productivity</td>
</tr>
<tr>
<td>together at work</td>
<td></td>
</tr>
<tr>
<td>be able to plan a better Scrum</td>
<td>be boring or overplayed</td>
</tr>
<tr>
<td>have rewards and punishments</td>
<td></td>
</tr>
</tbody>
</table>

Table 2 – Expectations from the Gamification

Finally, the list of the possible reward was collected. It included things as food; desserts; darts party during the work hours if the team achieves a certain goal; crate of beer; small rewards such as a certificate; team glory; individual awards, like a badge or a challenge cup which goes from winner to winner; materialistic rewards; some free hours or a half-day leave; extra holiday; leaderboard.

**4.1.3 Player analysis**

Based on the literature review the simple Bartle’s test was carried out (Table 3). The results from the questionnaire show that there are 3 different players in the investigated group. In Mike’s case it cannot be decided if he is a Socializer or an Explorer, so he is going to be treated
as both during the investigation. The player type analysis suggest that the two strongest player types will be Socializers and Explorers (Table 3). Also, there is one person who should be an Achiever, so that kind of player type has to be kept in mind as well. Nobody got the highest score for the Killer type. However, in one case it was 40%, so one should expect some attacks towards the game rules.

<table>
<thead>
<tr>
<th>Bartle’s test</th>
<th>Socializer</th>
<th>Achiever</th>
<th>Explorer</th>
<th>Killer</th>
</tr>
</thead>
<tbody>
<tr>
<td>Christoph</td>
<td>40%</td>
<td>53%</td>
<td>67%</td>
<td>40%</td>
</tr>
<tr>
<td>Péter</td>
<td>93%</td>
<td>40%</td>
<td>67%</td>
<td>0%</td>
</tr>
<tr>
<td>Mike</td>
<td>73%</td>
<td>47%</td>
<td>73%</td>
<td>7%</td>
</tr>
<tr>
<td>Sydney</td>
<td>80%</td>
<td>13%</td>
<td>73%</td>
<td>33%</td>
</tr>
<tr>
<td>Thomas</td>
<td>47%</td>
<td>87%</td>
<td>53%</td>
<td>13%</td>
</tr>
<tr>
<td>Peti</td>
<td>53%</td>
<td>53%</td>
<td>93%</td>
<td>0%</td>
</tr>
</tbody>
</table>

Table 3 – Player types

4.1.4 Scope and preliminary solution design

4.1.4.1 Scope

During Sprint 34, between 29/01/2018 and 16/02/2018, I had time to observe the company and the future players. In this period, I carried out the initial observations, initial interviews and the focus group on game design (Appendix 11.1, 11.2, 11.3, 11.5). The company is already using JIRA, a software from the company Atlassian. JIRA helps teams in tracking their tasks and sprints in Scrum. The interface is customisable depending on the team’s needs. In this case the company is using JIRA for keeping a record of the tasks that have to be done, that are in progress, and that are already done. The tasks that have to be done are resting in the backlog, and the tasks are chosen from the backlog at each kick off meeting. Kick off meetings are closing the previous sprint and are opening the new sprint. The other important element of the Scrum in this company are the daily meetings. The daily meetings are held every day just before lunch. A daily meeting is an about 10-15 minutes long meeting where everybody has a status update, plus there is a possibility to ask for help.

My official start date at the company was 01/02/2018. Sprint 34 was started on the 29th of January. I was observing and collecting data during the rest of the time of Sprint 34. The company is using JIRA since 01/02/2016 and had 34 Sprints before the Gamification. Before the closing meeting of Sprint 34 (which is the kick off meeting of Sprint 35), on the 19th of February, the Agile Board (Table 4) looked the following: To do – 17 tasks, In progress – 3
tasks, Done – 3 tasks. When in reality only 5 tasks weren’t completed, this means that it can be assumed that the Sprint administration was lagging behind since the beginning. The remaining tasks were closed at the kick off meeting.

<table>
<thead>
<tr>
<th>Agile Board</th>
</tr>
</thead>
<tbody>
<tr>
<td>To Do</td>
</tr>
<tr>
<td>Task3</td>
</tr>
<tr>
<td>Task4</td>
</tr>
</tbody>
</table>

Table 4 – The JIRA agile board of the company

The more detailed data from the JIRA investigation can be found in Appendix 11.9. The interpretation of the numbers and the findings will be discussed in section 5 after the gamification experiment was closed.

The two main events which could play the main role in game mechanics were the Daily meetings and the Kick off meeting (Appendix 11.1). These company events are the ones where all the players are physically present in the same room at the same time. These are the ideal conditions for positioning the interactions which move the game forward for these two kind of company events. In this company the Kick off meeting functions as the sprint planning and the retrospectives from the Scrum tools. The Agile board was discarded from the gamification process as it is part of the administering software which cannot be changed in a custom way, so an own board will be introduced in subsection 4.2.1. Also, the Sprint and Product backlog was discarded from the gamification process for the same reason as the Agile board, but I didn’t manage to introduce anything similar to that tool.

The Kick off meeting is the company event where the previous Sprint is closed and the upcoming Sprint is started. Based on my observation the biggest issue with the Kick off meeting was that it consumes too much time. One reason is that the tasks from the previous Sprint have to be closed during the Kick off meeting as almost nobody logs their workload. The other reason for it is, that Peter and Mike prepare for the meeting JIRA wise, but then all the tasks and objectives are discussed during the meeting, which seems to take up too much time as it was usual that some people were already looking at their phone instead of paying attention on the
meeting. Additionally, the estimation of tasks happened in few seconds, and if a task was hard to estimate then they just put an overestimation for it. All in all, the Kick off meeting seemed too long, but rushed at the same time, so based on this assumption I created the constraints. The solution I was thinking about was that as a Scrum master I should discuss first the Sprint objectives with Peter. Then after that I should sit down individually with all the players to build up their Sprint, which means that we create the tasks for JIRA and we put a preliminary estimation for them. This leads to a Kick off meeting where Peter can have an introductory speech about the goals of the upcoming Sprint, and then based on seeing the other players tasks one can decide to update his estimation. Once every player agrees with the estimations the Sprint can be kicked off. To make the meeting even more smooth the game should give points for logging the workload in JIRA, therefore at the beginning of the meeting the previous Sprint can be closed with one click. The constraints for a better Kick off meeting are that the tasks should have good estimations, and the players should log their performance in JIRA. The game should work in a way that these constraints are fulfilled, and then it could be a step towards solving the initial problem of estimating the workload.

The Daily meeting is the company event which happens at the middle of each workday. The Daily meeting is supposed to be the meeting where everybody gets up to date with the current status of the Sprint related tasks. Based on my observations the biggest issue with the Daily meeting is that we didn’t really get the desired status update from the players. By this I mean that these meeting were a bit messy and everybody could talk about whatever they wanted to mention regarding their work. Also, it was visible that not everybody was interested in everybody’s work. The reason can be that they never have a task in common. The goal with the Daily meeting should be that there is a clear update and a clear short term goal for everybody between the days. The constraint for reaching this state is that every player should specify a short term (1 day long) goal on the daily meeting and then on the upcoming Daily meeting he can easily say if the goal was met or not. Of course, the other function of the Daily meeting that this is the place for asking help if somebody is stuck somewhere should be kept. Additionally, the Daily meeting is the perfect event for a daily feedback regarding the game.

The player types are specified, the two main events where the game mechanics can work are also specified. The next step in the process was to come up with the game environment.

The background story I came up with is that the Sprint is actually a mountain called Mount Scrum. The mountain has different zones, and to climb in a zone one requires a certain level of
Experience Points (XP). The players are the climbers, whose goal is to reach the top of Mount Scrum before the Sprint ends. In favour of the Socializers the climbers always climb in pairs. This means that two players always have to work together in order to get to the top as fast as possible. In favour of the Explorers zone cards are introduced. The team can draw a zone card from the pile when reaching a new zone. Zone cards can contain a challenge or power or a situation. In favour of the Achievers the whole concept is about getting the highest score, but also there are challenge cards where you can play against other teams. To handle the Killers the rules have to be thought through so there are as less loopholes as possible. In order to incorporate the Self-Determination theory, I thought the reward should be specified always by the pairs, so each pair can fight for their own goal. The reward requests should always be accepted by the CEO. As an additional motivation factor there will be always a small “punishment” for the last pair, so the pairs are motivated to not finish the game with being the last one.

After reaching this point for thinking about the game design I had a focus group discussion on game design with external people (Appendix 1.5). One goal of the focus group discussion was to get a confirmation that the idea described above can work out. The other goal was to come up with as many zone and challenge cards as possible. This was not a classical focus group setting. For this discussion I invited 4 friends for a dinner where we were talking about the game idea and where we were brainstorming about the actual cards.

After this point I felt confident enough that the gathered data will be enough to design the actual game. The constraints for designing the game came from my own observations and assumptions, plus from the initial interviews (Table 2). First, I will go through the game stages and then I will apply the 8 core drives from the Octalysis Framework to the 3 types of players my game has to deal with: Socializers, Explorers, and Achievers. The game was named Climbing Mount Scrum.

**Design for the game stages**

For the **Discovery stage** based on the initial interviews (Appendix 11.2 and 11.3) it can be stated that the fact that there is a game in preparation for enhancing the work performance of the players was very interesting and positive for all the players. Some players even started to ask many questions how will the game work, during the first initial interview when the game...
was not even in a prototype phase. Regardless the player type the Discovery stage can be considered successful.

For the **Onboarding stage** based on the constraint list from the initial interviews (Table 2) and on my own observations and assumptions the rules have to be built up in a way that it is easy for every player to learn the rules. Also, during teaching the rules it’s important that there is something interesting for each player type in this case. The rules will change a bit before each game due to the iteration process. In this change the players have to be involved so they feel the game closer to themselves. I decided to have focus group discussion after each Sprint where the players can state what did they like and dislike in the game, where do they want to see a change.

The first round of the game will be the **Scaffolding stage**. In this stage the 8 Core Drives from the Octalysis Framework will start to play a big role. The way how the 8 Core Drives influenced the game design will be presented just after the next paragraph.

After finishing one round of the game it’s important to keep up the interest to play more rounds. The game enters the **Endgame stage**. The reward system grants diversity in the possible rewards for each round, which can make the game interesting for a longer period. In the scope of this Degree Project the easiest way to add new zone and challenge cards. Also, it would be possible to add small new game elements. Out of the scope I would also consider changing the background story and the idea of the mountain for different scenarios, but as that would lead to a much higher change it would increase the difficulty to answer the research questions.

**First Core Drive - Epic Meaning & Calling**

In Climbing Mount Scrum it is true for all the player types that the bigger picture is to see if Gamification is a useful technique for the company. Also, they can help in my Degree Project, which can be considered as a higher goal for a participant in the game. Epic Meaning & Calling for the Socializers means that the game is played in pairs. The reward can be customized by the pairs. In their case they have to play the game together with someone. They can specify their own reward, which is received by both of them, so as a Socializer one has to work for the other, which is a bigger purpose than playing for his/her own enjoyment. Epic Meaning & Calling for Explorers means that the reward can be customized by the pairs. This opens up the possibility to come up with as many rewards as possible. Also, as this is part of a Degree Project they can try to find the boundaries of Gamification and see whether this is a suitable solution or not. Epic
Meaning & Calling for Achievers means that there is a winner in the game. The bigger picture for them is to get the maximum out of the gamification experiment.

**Second Core Drive - Development & Accomplishment**

In Climbing Mount Scrum the common factor working for this drive is that who will be the first on the top of the mountain. It’s important that climbing the mountain should depend the most on the work performance and not on random factors. For example, to display the sense of accomplishment I will use the zones on the mountain as a progress bar. Additionally, the random factor should also play a small role, therefore the challenges are introduced which can make the work routine a bit different, something that can easily become a bit hard. For Socializers it is interesting to set up some common goals. For example, there are zone cards which can be applied to only one person in the team, or there are zone cards which are applied as a team. In these cases, a Socializer can set up common goals with the other or others and it will be more motivating to fulfil a goal or challenge. The Explorers can develop in a sense that they try to reach different states in the game in order to receive as different zone cards or challenges as possible. There should be always something new that can be discovered by them. For the Achievers it was introduced that on the challenge cards it is possible to decide how much XP a pair wants to risk. This makes it possible for an Achiever to risk the maximum XP possible and if he/she wins than it will be fulfilling. There are zone cards which challenge all the players at the same time. These challenges can be motivating for an Achiever.

**Third Core Drive - Empowerment of Creativity & Feedback**

In case of Climbing Mount Scrum the creativity part can be lived with certain challenge cards which for example allow the players to come up with own rules which have to be applied to the others. Also, the constant focus group discussions are there, so the players can put their ideas into the “pool”, and if the ideas are applicable they can be added to the game. However, the more emphasis is on the feedback aspect, which is realized through the daily feedback from the daily meetings. Socializers have to work in pairs during the game. This can open up for them new possibilities, like building up different strategies for the game together with their pair creativity wise. Hopefully Explorers will try to find the limitations and boundaries of the game elements and based on that they will contribute more than the others to improving the game. For the Achievers the board game style of the game gives an instant feedback for them how
good they are compared to the others or to themselves. The zones (levels) on the mountain clearly show the progress at any moment (Progress bar).

**Fourth Core Drive - Ownership & Possession**

In Climbing Mount Scrum this drive mostly comes from the experience points (XP) that can be gathered by the pairs. Socializers have the sense that it is a mutual interest to collect more XP as it is a common goal for the pair. There can be a motivation to bring at least the same amount of XP to the team as their pair. For the Explorers there are cards which can be activated at a later point (such as the “Back to the future card”). This option leaves space for them to come up with new strategies in maximizing their XP. Achievers will try to risk as much XP as possible in order to gather as much XP as possible. Also, if they will be in lead then they will invest more time and energy in collecting XP.

**Fifth Core Drive - Social Influence & Relatedness**

In Climbing Mount Scrum competition can be found as the pair with the most XP at the end of the Sprint wins, and there is only one winner team. Envy can be found as well, for example when the other team manages to collect a stronger card than yours. Group quest are also there through few special cards, like the “tent camp” card, which create a small 1 day long quest which affects all the teams and all the players with applying the same rule to them. Social treasure is some kind of a reward that is given to another individual, so in the game there are opportunities to gift a small amount of XP through few special cards, like the ‘sugar daddy card’. Companionship is realized through working in pairs through the whole game. Mentorship is something that can’t be realized in the sense that the scope of the game is not big enough to have veteran players who can help out newbies (Chou 2015, Ch9). “This Core Drive also includes the “Relatedness” part, which deals with things like attachment to emotional associations and the feeling of nostalgia” (Chou 2015, Ch9). To utilize this part of the drive I tried to make some famous references with the first set of cards. The Socializers can experience Companionship, Group quests and Social treasures through the game. Explorers can experience the Relatedness and Achievers can experience the Competition and Envy.

**Sixth Core Drive: Scarcity & Impatience**

In Climbing Mount Scrum there are game elements which build on this core drive. One of them is the coins, which are hidden every week in the office space and who finds one can exchange it for a zone card. For impatience there are the zones on the mountain, after a certain amount of
XP the team can get up to a higher zone, which means the possibility to draw a zone card. From the second round of the game more elements were introduced, which incorporated this drive. Socializers can be motivated to participate in the coin searching journey if both of the players in their team are up for this part. For the Explorers the motivation is in the journey to find the coins, and to discover the hidden places. The Achievers are simply motivated to find the coins in order to get more XP.

**Seventh Core Drive - Unpredictability & Curiosity**

In Climbing Mount Scrum this factor is brought to the game through the continuously updated zone and challenge cards. The new cards create new states in the game, which motivates to player to play again. The new cards can have the same effects on all players, Socializers, Explorers and Achievers.

**Eighth Core Drive - Loss & Avoidance**

In Climbing Mount Scrum this factor is brought by the challenge cards. The challenge cards make it possible to risk some amount of the already collected XP. If the challenge is fulfilled the risked value is added to the XP, if the challenge is failed the risked value is subtracted from the XP. The challenge cards can have the same effects on all players, Socializers, Explorers and Achievers.

**The Octalysis for the different player types**

Based on the previous sections I did a rough estimation on which Core Drives affect most which player type. To carry out the estimation I used the Octalysis tool. In the Octalysis tool it’s possible to set the weight of each Core drive for the designed game. In my case I set up the Core Drives for the game Climbing Mount Scrum, for the Scaffolding game stage, for each player type I have. The outcomes can be seen on Figure 2, Figure 3 and Figure 4.

In case of Socializers it can be said that the most important is Social Influence & Relatedness. Other important drives are Epic Meaning & Calling, Development & Accomplishment and Empowerment of Creativity & Feedback.

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3 The Octalysis tool is available here: [http://www.yukaichou.com/octalysis-tool/](http://www.yukaichou.com/octalysis-tool/)
In case of Explorers it can be said that the most important is Ownership & Possession. Other important drives are Development & Accomplishment, Scarcity & Impatience and Unpredictability & Curiosity.
In case of Achievers it can be said that the most important is Empowerment of Creativity & Feedback. Other important drives are Development & Accomplishment, Epic Meaning & Calling and Loss & Avoidance.

Figure 4 – Octalysis for Achievers

4.2 Gaming phase – Iterative

This section deals with the game in action and with the improvement of the game through the 4 Sprints that were allocated for playing this game in the boundaries of this Degree Project. First, the first version of the game is explained in details, and even more details can be found in Appendix 11.10, 11.11 and 11.12. Then in the 2nd, 3rd and 4th game only the differences are explained, which were conducted based on the collected feedback. After each game the game is analysed based on the gaming experience and the focus group discussion. This subsection is very technical. The reason for it is that one goal of this subsection is to show the reader how can the different game elements influence the game and how can they be changed through the time. This section is focusing more on the actual game design, and for readers who are more interested in this part of the study it is recommended to check the relevant parts in the Appendix.
4.2.1 First version of Climbing Mount Scrum

The first version of the game was played between: 19th February – 6th March.

The following teams were assigned: Peter+Sydney (Socializer+Socializer), Thomas+Christoph (Achiever+Explorer), Mike+Peti (Socializer/Explorer+Explorer). In the first game I was asked by the CEO not to create random teams, but to think about how to pair the different people depending on their tasks and relation.

**Gamified platform design**

The background story was kept as it was described in the scope section before. The board of the game is a mountain which is divided into 7 zones (Figure 5). The zone numbers show the needed amount of XP in order to climb up to the certain zone. The game starts from the bottom with Zone 0, and the game ends with Zone 500 at the top of the mountain. The figures for the game are built up from cardboard (Figure 7). The cardboard contains the faces of the two players who will play in pairs and a black rectangle. The black rectangle is painted with a paint on which it’s possible to write with chalk. This rectangle will show the current XP of the pair. The real life board and the figures can be seen on Figure 6. This board setup mostly has influence on Achievers as there is a top to reach, and on Explorers as there is an interesting layout on which they can move around.

![Figure 5](image)

*Figure 5 – The design of the board for Climbing Mount Scrum*
Figure 6 – Climbing Mount Scrum in reality

Figure 7 – Climbing Mount Scrum figure
Rules – Purpose of the game

The goal of the game is to be the first team on the top of the mountain before the Sprint ends. The reward can be specified by the pairs at the beginning of the game. The rewards are checked with the CEO for an approval. This way the pairs can work together for an own goal, which may be a better motivational reason than playing for the same reward. Also, there is motivation to not end up as the last team in the game, because the last team has to invite the winning team for a cake or a beer. The detailed rules can be found in Appendix 11.10, and the specified card deck can be found in Appendix 11.11.1.

Rules – How to collect XP

The first main way to collect XP is through the daily challenges. Of the tools from Scrum that is used in the company is the daily Scrum meeting. This meeting happens every day before or after lunch depending on the workflow of the team. On this meeting everybody has to come up with a daily challenge, which has to be completed until the next daily meeting. The successful completion grants +10XP for the individual, and the failure of the challenge leads to +0XP for the individual. An example for the daily challenge could be to fix a bug or to develop a certain feature.

The second main way to collect XP is through the JIRA tasks. The Sprints are around 2 weeks long. This means that there are 10 work days for each person, and these 10 days have to be planned workwise. Each person receives and/or comes up with a certain number of tasks (usually between 2-10 tasks) and estimates the time needed for completing each task. Altogether each person has 100 XP which is distributed between the tasks in proportion with the time estimated for the tasks. For example, if a person has 3 tasks, 2 tasks estimated for 4-4 days, and 1 estimated for 1 day, then 100XP is distributed the following way: 44+44+12 (4 days, 4 days, 1 day). In addition, the administration of the progress in JIRA regarding the tasks is also valued with XP, after each task which is closed and is logged the person receives +5 XP. The full XP for a task is given if it’s completed within a certain tolerance regarding the time estimation. If a task is estimated for 1 day or is shorter than 1 day then this tolerance is 1 hour. If a task is estimated for more than 1 day, then the tolerance is 4 hours (half workday). In case of not completing the task on time the individual can only receive the 40% of the full XP and in case of completing the task “too fast” the individual can only receive 80% of the full XP. In additional there is a possibility to add extra 20% to the previous values if it’s voted by at least 3 players (not including the player who is involved in the matter).
The third main way to collect XP is to help out the colleagues. One helping out means +5XP. On a daily basis the maximum XP that can be gathered by helping is 15XP.

The last way to collect XP is through zone cards and challenge cards which can be collected during the game.

**Rules – How the card systems work**

As mentioned before there are two kinds of cards in the game: zone cards and challenge cards. Zone cards can be drawn when entering a new zone on the mountain. For example, a team is 35XP and then receives +30XP, so they entered Zone 50, which means that the team can draw one zone card. The zone cards for the first deck can be found in Appendix 11.11.1. The number of the cards was set on basic assumptions made by me. For example, there is a zone card called Pickaxe, which doubles the XP that is collected by the pair until they manage to leave the zone they are in. There are 3 pairs, so there are 3 Pickaxe cards with the idea that each should have the chance to draw this card once during the game.

Challenge cards can be drawn when somebody draws the zone card which is named Challenge card. At this point, just before drawing a challenge card, the pair has to decide how much XP they want to risk, which they will win if the challenge is completed, or which they will lose if the challenge is failed. The challenge cards for the first deck can be found in Appendix 11.11.1. There is also a special kind of card, the Lateral Coin (Appendix 11.11.5). Three of the coins are hidden at the start of each week somewhere in the office. The player who finds one can exchange to coin for drawing a zone card.

**Scoring system background**

The constraints for the maths behind the scoring system were set up based on my rationalizing. One person can collect 90XP from the daily challenges assuming that it’s a 10 workday long Sprint. From the JIRA tasks the maximum is 100XP. From logging the JIRA tasks and from helping out colleagues we can assume an average 40-60XP. This means that one person can gather 230-250XP from work only in a very ideal case, so a team is capable of collecting 460-500XP just from work. So, the top of the game was set to be 500XP. Assuming that the ideal case is very unlikely the challenge cards and the zone cards are the ones that bring in extra XP based on luck and skills for making it easier for the teams to reach the top of the mountain. The scoring system lies on many assumptions, but this was the first try of the game, which can be considered as the first simulation for testing whether this direction is good or bad.
Gamified platform analysis and development

The two main sources for analysing the 1st round are the focus group discussions (Appendix 11.6.1) and the score keeping (Appendix 11.12).

The concept of the card system with zone cards and challenge cards was welcomed. However, the values associated with the different types of cards were challenged and there were suggestions how to balance it better. The risked XP for the challenge cards will be maximized to 30XP and the double XP card will be changed to 1.5 times more XP card. These changes are based on the request that the work related XP should worth more than the XP collected through the challenges and cards. Two cards were picked for change. The “Try not to laugh card” should be removed because it is an impossible challenge and is affecting the work environment negatively. The “duel of fates” card is too strong, but it should be kept, so the new idea is just to risk between 10-30XP for the darts duel instead of exchanging the XPs between the two playing teams.

The scoring system worked out surprisingly well. Before the last daily meeting the leading team had 480 XP, the second team had 465 XP. Unfortunately, the last team only managed to collect 189 XP until the very end. The first issue was that it can easily happen that a team collects more than 500 XP. Also, it can happen that two teams manage to reach the 500XP at the same round, and the question what happens in this case was raised by the focus group as well (Appendix 11.6.1). The solution is that the team which manages to reach the higher value by the end of the last daily meeting will be the winner. If two teams manage to finish with the same amount of XP, then it will be checked which team collected more work related XP. This already happened in the first round of the game, two teams managed to reach 500XP on the last daily meeting, so the team with the more XP at the end won the game. One week point with the scoring system was that after each log the person received +5XP, which is really motivating, but the fact that somebody has 2 tasks and somebody has 6 tasks for the Sprint makes it unequal to score the logging this way. In the next games the logging will work the same way the JIRA tasks, there will be a fixed amount of 30XP, and this XP is distributed between the number of tasks, e.g. if someone has 5 tasks, then the person will receive +6XP/logging. During the focus group discussion, I received many questions that aimed on not handled situations. The first was how to handle sick leaves or holidays. In these cases, the team will receive +15XP/day as if the daily challenge was fulfilled with an extra help. The reasoning is that in case of holidays the Sprints are planned accordingly and in case of a sick leave the Sprint can be adjusted, therefore
the daily challenge is the most affected point where the compensation is needed. The second question was how the external tasks should be handled (like meetings). Meetings, which are considered in the company as something that take valuable work hours away, will be awarded with +10XP. External tasks are the tasks which are not included in the Sprint planning in the first place, so these tasks will be called unexpected tasks. The unexpected tasks which are 2 days long or are shorter than 2 days will be worth +10XP/task. The unexpected tasks which are longer than 2 days will be worth +20XP/task. A team can gather maximum 30XP/day from these methods otherwise the game won’t stay balanced. The third question was how to handle if a computer is broken down. It will be considered as the daily challenge was affected, so +10XP/day. The fourth question was how we should handle if someone will not be able to attend a daily meeting but is still working. The person can send an e-mail before the daily meeting stating the current situation and the daily challenge for tomorrow. The XP will be calculated on the meeting based on the e-mail. The fifth question asked what happens when somebody helps out a person who is not in the Scrum team. This kind of help will also count as a help regarding the game. The sixth question asked what happens when a team draws two cards which double their XP. In this case they have to draw a new card. Otherwise the scoring system won’t stay balanced.

The general comments to improve the game contained some ideas which got introduced in the following rounds. Ideas such as valuing more the individual work, the “surprise box” and the statuses. These ideas will be explained more in depth in section 4.2.2.

To summarize the feedback the next version of the game has to focus more on work, create more interaction, should have a better error handling for the different situations, should make it visible who is the best on individual level.

4.2.2 Second version of Climbing Mount Scrum

The second version of the game was played between: 7th March – 23rd March.

The following teams were assigned: Thomas+Sydney (Achiever+Socializer), Mike+Christoph (Socializer/Explorer+Explorer), Peter+Peti (Socializer+Explorer). In the second game I was asked again by the CEO not to create random teams, but to think about how to pair the different people depending on their tasks and relation.
Gamified platform design

Rules – Purpose of the game

There is only a small change. The last team has to invite the best individual player for a cake or beer. The best individual player is the player who collects the most work related XP through the game. This change was created based on the idea that there should be a way to see who the best in individual work is. The detailed rules can be found in Appendix 11.10, and the specified card deck can be found in Appendix 11.11.2.

Rules – How to collect XP

The first main way to collect XP is still through the daily challenges and it works the same way.

The second main way to collect XP is through the JIRA tasks. This part has one small change in comparison with the version before. For the administration, which is the logging in the JIRA there is always a fixed amount 30XP which is distributed equally between the different tasks. So, for example in case of 5 tasks it means 6XP/loginning. The reason for this change is to minimize the demotivational factors coming from any inequality.

The third main way to collect XP is to help out the colleagues. One helping out means +5XP. On a daily basis the maximum XP that can be gathered by helping is 15XP.

The fourth main way (a new way) to collect XP is through certain situations that can occur. In case a colleague goes on a holiday or is on sick leave the team receives +15XP/day. In case someone’s computer is broken down it means also +10XP/day. In case there is a long meeting to attend it means +10XP/meeting (max 10XP/day). In case there is an unexpected task which is not registered in the Sprint through JIRA and takes maximum 2 days to complete, it means +10XP/unexpected task. In case there is an unexpected task which is not registered in the Sprint through JIRA and takes more than 2 days to complete, it means +20XP/unexpected task. The unexpected task XP is maximized in 30XP/day/team.

The fifth main way (a new way) to collect XP is through the status cards. There are 3 different statuses which can be obtained (Appendix 11.11.2): the Combo breaker, the JIRA Knight and the Tauntaun farmer. The Combo breaker can be obtained after completing 3 daily challenges in a row within a team, but if another team manages to surpass the team with the status with completing more daily challenges in a row, then the status is stolen. The JIRA Knight can be obtained by the team who collects the most XP from the JIRA tasks and can also be stolen by another team if they close more tasks in JIRA. The Tauntaun farmer can be obtained if a team
collects at least 3 tauntauns, and this card can be also stolen with having more tauntauns. The work related statuses, the Combo breaker and the JIRA Knight are worth +50XP, and the Tauntaun farmer is worth +30 XP. These points are added to the XP of the team on the final daily meeting.

The last way to collect XP is through zone cards and challenge cards which can be collected during the game.

Rules – How the card systems work

The card system works the same way as before. Two extra features or rules were introduced. The first is the rule in connection with reaching Zone 400 on the mountain. After zone 400 it is so cold on the mountain that there is a need of two tauntauns per team. The tauntaun cards can be obtained either through regular card drawing, or by using the surprise box. Moreover, a tauntaun can be bought for 1 LateralCoin. The second new rule is the surprise box. The surprise box is actually three boxes and always one of them contains a tauntaun, another one contains a zone card, and the last one is empty. Each person has the right to choose a surprise box once a week (basically two times through a game round), which cost -10XP for the team and you never know what will be in your box. This is not mandatory, it depends on the strategy of the team.

Scoring system background

The basic idea is the same. Some compensation and balancing were made to the points. The challenge cards can have a value of maximum 30XP. And more work related situations are handled in this version for which it is possible to collect XP.

Gamified platform analysis and development

The two main sources for analysing the 2nd round are the focus group discussions (Appendix 11.6.2) and the score keeping (Appendix 11.12).

This round of the game was a special round because the company had a live release of one of their products in the first half of the Sprint. This release was a bit agile, and because of that the early feedback from the usage of the product created many new feature requests which added new unexpected tasks to two people from the Scrum team. This way the Sprint became a bit ad-hock, so it was hard to come up with general ideas about the game.

Most ideas were connected with the incoming random tasks. The tasks should be tracked, the status cards should include the team which can tackle the most unexpected tasks.
The help out +5XP created many situations when it was hard to decide whether to count the help as a full help or not. For this situation small helps will be introduced which can be valued with 1-2XP. A small help can be to answer a question which can help the person a lot but is not too much time for the answering person.

The surprise box was very time consuming and it occurred too many times that they managed to choose the empty box, which was demotivating. The concept was welcomed, but there is a need for a new method.

Too many challenges are involving the darts, there should be more diversity. Also, there are too many cards which don’t move forward the teams, so when somebody is not receiving a double card can easily lag behind.

Similarly, to the previous game the same thing happened and one team was lagging behind while the two other teams were fighting closer to the top.

To summarize the feedback for the next version is to create new challenges and cards which are not based on darts and can move the teams forward. In the scoring system only, the help XP has to be changed. There is a need for a new kind of surprise box option.

### 4.2.3 Third version of Climbing Mount Scrum

The third version of the game was played between: 26th March – 12th April.

The following teams were assigned: Thomas+Peter (Achiever+Socializer), Mike+Christoph (Socializer/Explorer+Explorer), Sydney+Peti (Socializer+Explorer). In the third game the teams were randomized on the kick off meeting.

**Gamified platform design**

**Rules – Purpose of the game**

There is no change. The detailed rules can be found in Appendix 11.10, and the specified card deck can be found in Appendix 11.11.3.

**Rules – How to collect XP**

One change is related to the help XP. For a regular help it is still +5XP/help, but for smaller helps it is possible to get 2XP/help. Both the regular and the small help are maximized to 10XP/day.
Another change is the introduction of a new status card, the Spanish inquisition (Appendix 11.11.3). This status is worth +50XP and can be obtained by the team who collects the most XP from unexpected tasks.

**Rules – How the card systems work**

The card system works almost the same way as before. The challenge cards can only be obtained through the magic dice option. The surprise box option was changed into the magic dice option. The concept is the same, each person can throw once with the dice each week for -10XP. In case of an odd number the team receives a tauntaun and in case of an even number the team can draw a challenge card for a fixed 30XP to risk.

New zone and challenge cards were introduced (Appendix 11.11.3). There is one card the boss card which creates a new situation for the players. When the boss card is drawn (it’s a zone card, can be drawn at any time) the boss stops the teams on the mountain. The teams have to collect 75XP from their daily challenges and helps in order to defeat the boss and the team with the most contribution to it can draw a zone card.

**Scoring system background**

The scoring was kept as before.

**Gamified platform analysis and development**

The two main sources for analysing the 3rd round are the focus group discussions (Appendix 11.6.3) and the score keeping (Appendix 11.12).

The discussion revolved around how to make the game more efficient. One raised issue is that the game master doesn’t have enough power as I tried to outsource all the decision making to the team and I tried not to be involved too much in the game. However, the vote options when a daily challenge is questionable or when a JIRA task is closed too early or too late seemed to the team as something not really necessary. So, from the next game there will be no voting option, instead the game master will decide in the questionable situations. Another point to this topic was that Thomas was always in the winning team, and that the last always lags behind with a big difference compared to the two first teams. The scoring system was challenged, but as it was only 3 games so far it has to be observed more before making more radical changes.

The new cards were all welcomed, and also a new status card was suggested for rewarding the team who can collect the most point in one day. The magic dice option was really popular and
almost everybody played the opportunity on the first day of the week, even at the first day of the game, leading to the possibility to reach negative XP and to get off the mountain. The team was happy with the magic dice this way, so it will be possible to end up in negative XP if a team is unlucky or plans a bad strategy.

Finally, there were ideas which point to the future. Ideas such as the challenge XP should be rewarded based on how hard a team tries to fulfil the given challenge. And a much bigger idea, to create a story based game where the game master can shape the game accordingly. The game this way would resemble to a role-playing game, but this change would be too radical, so the team agreed on to talk about radical changes more seriously when the degree project experiment is over.

To summarize the feedback the most important focus is to make the game more smooth and balanced.

**4.2.4 Fourth version of Climbing Mount Scrum**

The fourth version of the game was played between: 13\textsuperscript{th} March – 27\textsuperscript{th} April.

The following teams were assigned: Thomas+ Peti (Achiever+Explorer), Mike+Peter (Socializer/Explorer+Socializer), Sydney+Christoph (Socializer+Explorer). In the fourth game the teams were randomized on the kick off meeting.

**Gamified platform design**

**Rules – Purpose of the game**

There is no change. The detailed rules can be found in Appendix 11.10, and the specified card deck can be found in Appendix 11.11.4.

**Rules – How to collect XP**

The one difference is the introduction of a new status card, the Speedy Gonzales (Appendix 11.11.4). This status is worth +5XP and can be obtained by the team who collects the most XP in a one day long period. Only 5XP because it is only a symbolical status for showing which team managed to collect the most XP in one day.

**Rules – How the card systems work**

The card system works almost the same way as before (Appendix 11.11.4). The challenge cards can be obtained again by drawing a zone card and also by the magic dice option.
Scoring system background

The scoring was kept as before.

The new game design

The biggest improvement of the game in this round is the new design. The game board (Figure 8, Figure 9) and all the cards got a new design (Appendix 11.11.4), only the figures stayed the same. The reason for the new design is to grow out of the prototype version of the game and to make it more professional looking. The design was created from scratch within the company, so there are no possible copyright issues anymore.
Gamified platform analysis and development

The two main sources for analysing the 4th round are the focus group discussions (Appendix 11.6.4) and the score keeping (Appendix 11.12).

The new design managed to fulfil its purpose, this was the first thing that came up during the focus group discussion, and the reaction was very positive.
Regarding that statuses they should be balanced, so the horse farmer status will worth +50XP as well. The reasoning behind it is that for +30XP it’s not worth the investment as a challenge would worth the same and cannot be stolen.

In this round it happened that two cards activated at the same day affected one team in a too positive way, so there should be rules or accommodations how to handle fairly that one would gain too much advantage.

There was an idea to introduce riddles instead of the LateralCoins, or to have one week the coins, one week the riddle.

There is a request to create more instant challenges, the 3 day long challenges are becoming less fun as for the first time. It happened with two challenges (in two different teams) that the challenge was forgotten.

To summarize the feedback there is a need to update the challenges and to create an alternative for the LateralCoin.

4.2.5 Managing, monitoring, measuring

The game was played for 2 months in the scope of the Degree Project. What did it mean for me as the change agent/game master in this setting? In this section this question will be answered by going more in depth regarding how to maintain a game after the introduction. After that some of the collected quantitative data will be presented which will help to answer the second research question regarding the team performance.

As mentioned before it was an important aspect in the design of the game that the interactions should be performed at the points where every player is involved physically. This way as the game master I could oversee all the interaction connected with the game. The Scrum master role in the company allowed me to plan and lead the kick off meetings where the Sprint planning is executed. Additionally, this role allowed me to lead all the daily meetings during the Sprint. This created the opportunity for me to do and oversee all the administration regarding the game, by which I also managed to fulfil the expectation that the game won’t take up too much time for administration from the player perspective.

For the managing, monitoring and measuring aspects it was important to keep the game in my hands. The managing was manifested through the game master role. The game master set up the rules, led the meetings, collected the feedback and decided in the questionable situations
not handled by the game. These opportunities helped me to monitor the game. The first level of monitoring was the textbook, where I noted all the game related events such as what are the JIRA tasks, what is the daily challenge of each person, the points and challenges for the game, and the ideas that came up during the meetings. Unfortunately, this textbook is not presented in the appendix. On one hand these notes were made in Hungarian as the spoken language in the company is Hungarian and to take notes real time was easier in the same language. On the other hand, these notes contain company related sensitive data about tasks, strengths and weaknesses of the company. For the monitoring purposes it was a perfect solution as it could be easily carried around, and it was easy to look back for each date what happened with each person related to work and the game.

Under measuring I mean the quantitative data I retrieved from the textbook. The detailed version of this data can be seen in Appendix 1.12. Figure 5 is for highlighting how the teams performed in the game. With the scoring system my expectation was that a team can easily manage to finish the game with 300+XP, which would mean that the 50% of the tasks are done and the challenges are fulfilled more or less. Interestingly there is always one team which manages to finish under 300XP regardless the team members. For example, in Sprint 38 the three teams were very close to each other in the few days when they were around Zone 200 (Appendix 1.2). The scoring system has some unbalance, but the levels are set right as until the end of Sprint 38 the 500XP was always reached at the last daily meeting just before closing the Sprint. Figure 6 shows the distribution of the places reached by the players. It’s really interesting that so far, the player types play according to their rules, and the achiever managed to be in the winning pair 3 times out of 4, and only one explorer is there who never managed to be in the winning team, for which there can be many reasons. For example, the person maybe wasn’t motivated by the XP, but by the different cards and play scenarios, or maybe the person wasn’t experienced in planning the daily challenges. In general, the distribution looks acceptable, but to draw a final conclusion on the scoring system more game rounds should be played.

The other way of measuring was the focus group discussions after each Sprint (Appendix 1.6). These discussions were up to the players as the topic was always the same: how to improve the game. They always stated what they liked and disliked about the game. Also, many ideas for improvement were brainstormed during these discussions, and then I chose the ones which were
worthy to implement into the next round. The strength of this discussions was that it is an instant feedback coming from the players who are the ones actually involved in the game.

<table>
<thead>
<tr>
<th>XP reached in one round</th>
<th>Sprint 35</th>
<th>Sprint 36</th>
<th>Sprint 37</th>
<th>Sprint 38</th>
</tr>
</thead>
<tbody>
<tr>
<td>1st place</td>
<td>636</td>
<td>536</td>
<td>586</td>
<td>509</td>
</tr>
<tr>
<td>2nd place</td>
<td>557</td>
<td>382</td>
<td>581</td>
<td>388</td>
</tr>
<tr>
<td>3rd place</td>
<td>189</td>
<td>274</td>
<td>258</td>
<td>271</td>
</tr>
</tbody>
</table>

Figure 5 – The XP reached in one round of the game per team

<table>
<thead>
<tr>
<th>Players and their place</th>
<th>Christoph (Explorer)</th>
<th>Peti (Explorer)</th>
<th>Mike (Explorer/Socializer)</th>
<th>Peter (Socializer)</th>
<th>Sydney (Socializer)</th>
<th>Thomas (Achiever)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1st place</td>
<td>1</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>2nd place</td>
<td>2</td>
<td>1</td>
<td>2</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>3rd place</td>
<td>1</td>
<td>3</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td>0</td>
</tr>
</tbody>
</table>

Figure 6 – The distribution of the places reached by the players
5 Post-game Analysis and Discussion

In this section the analysis of the data will be shown and discussed for all the 4 research questions one by one. After that the question specified conclusions will be drawn. This section can be imaged as the evaluation stage of the GOAL Framework (Figure 1).

5.1 Q1: How do the tools and procedures prescribed by the Scrum framework lend themselves to being gamified?

The actual game and the steps to design it were already presented in section 4. In Appendix 11.10 and 10.11 the rules and the card decks can be found. The game mechanics, that move forward the game, are the kick off meetings and the daily meetings. These two procedures are the most essential parts of the Scrum methodology that was used in the company. The game dynamics, that satisfies the desire, is fulfilled by the daily feedback that how much XP a team can collect through completing tasks and challenges. Also, the relation between the different team’s contribution to the success of the Sprint is displayed by the game board, where the teams are placed in higher and higher zones on a mountain depending on how much XP can they collect. Additionally, there is final reward which can be always specified by the actual teams.

Gamification is usually not this game oriented as in this case, it’s more likely focusing on using few small game elements to improve a feature or a task (90+ Gamification cases). For example, Google with introducing a currency which can be earned by working extra hours. This currency can be used only for buying server time, which is a scarcity when many developers work on cloud systems and augmented reality projects for which extra servers are needed in order to run different simulations (90+ Gamification cases). This “game” builds on the Sixth Core Drive: Scarcity & Impatience. As a developer you don’t want to stay in a long queue to test something, so in order to test faster you need to show a higher performance at work. One common way is to introduce game elements to engage the customers better (Robson et al 2016).

In this Degree Project a whole game was designed around the Scrum. The game resembles a classical board game. There is a board, which is the mountain in this case. The mountain symbolises the Sprint tasks, and to get on the top of the mountain means that the team managed to beat the given Sprint. There are figures on the board which move forward, and there are cards which create interaction between the players. The kick off meeting sets the structure for the 2 weeks long Sprint and the daily challenges help to divide the main tasks into smaller tasks.
which can be solved within a day. This way the employees engage more with their tasks and can have better estimations.

Three of the closing interviews also contributed to this research question (Appendix 11.7.2, 11.7.5 and 11.7.6) and brought up an important aspect to discuss. The tools and procedures of Scrum differ from company to company in some aspects, so the question is to what extent the answer for this research question can be generalized. The designed game is tied to this very case; therefore, the answer cannot be generalized. The steps of the design ensured that the created game perfectly fits this group of people in this company setting. To some extent it is possible to use the same concept again, but probably with different cards and different scoring and only at a similar company or at a similar group in a bigger company. Smaller games such as the Google example before could be introduced to many companies but Climbing Mount Scrum is a highly customized game for now.

The GOAL Framework (Figure 1) was used to design the game. This framework occurred to fit the needs very well of Climbing Mount Scrum. The iterative part is a very important part of the framework. Through the focus group discussions (Appendix 11.6) it can be seen that there is always a need for changing, discarding or adding something to the game. Through the time it can be seen that the first focus group discussion (Appendix 11.6.1) was the longest with the most content and change request, while the last focus group discussion (Appendix 11.6.4) was the shortest with the least change request. This means that the game is stabilizing through the iteration cycles. The only critical part of the GOAL Framework is that it is really hard to adapt the game if there is a major change in the players and it occurs that the new group behaves very differently.

**5.2 Q2: How does the implementation of a gamified Scrum framework affect goals fulfilment?**

This question can be observed on team level and on individual level. On team level the base is Table 7, which was created from Appendix 11.9.1. On this Table Sprint 29-34 happened before gamification was introduced, but the investigated Scrum team already worked at the company in the same setting as during the gamification period. Before Sprint 29 the team was so different that there is no point to use that data for comparison. The table shows the Number of issues, which is the number of tasks added to JIRA for the certain sprint. The Closed issues are the tasks which were closed before the sprint ended. The Back to the backlog is the number of tasks
which were not closed, therefore they made it back to the Product backlog and were added to later sprints. The data for these columns was obtained from the previous sprints which can be accessed through the sprint report function of JIRA.

The Key Performance Indicator is the success rate. It was calculated from the relation of the closed tasks to the number of issues and is showed in percentage. Looking at the pure numbers it doesn’t tell us a lot, even comparing the average success rate won’t tell too much. Before the gamification the average was 59%, and after it became 57%. The comparison has to be critically evaluated as for example there are more sprints before the game was introduced so 2% difference can be counted as basically no difference. Digging deeper in the table it can be observed that before the gamification less tasks were added to JIRA in every case. This indicated that the tasks are planned more carefully and are divided into more tasks in order to set better estimations. There was clearly a need to complement the quantitative data from JIRA with at least one qualitative interview, so after the experiment was finished and all the data was collected I sat down with the CEO for a final interview, which became an open discussion based on the data I collected (Appendix 11.8). A good insight from the discussion that helped me move forward with Table 7 was to check also the length of each investigated sprint, because Peter said that he remembers that the sprints before the gamification were longer as they tended to prolong the sprints with few extra days in order to close more tasks before they moved forward to the next sprint. After checking the sprint lengths, I added the column which shows the number of work days for each sprint. The usual length of a Sprint is between 10-15 days (Fowler 2005), but here it can be seen that this number was only kept during the gamification period. Before the game it was usual to have sprints, which are even 18-19 days long, or not even reaching 10 days. In order to make it more comparable let’s assume that the finished work load is proportional with the time. Then it is possible to calculate a success rate which is considered if the sprint would have contained 13 work days in each case. I choose 13 work days because that is the number that occurred the most and is between 10 and 15. Looking at the Normalized success rate for 13 work days it can be said that since the game introduced there is no sprint under 50%, but before the game the half of the sprints performed under 50%. Looking at the average of the success rate it was 55% before and 59% after the game was introduced. This would mean 4% increase in the performance of the team, but again it would be true only if the relation is proportional.
Looking at the question on individual level a similar conclusion can be reached (Appendix 11.9.2 and 11.9.3). In case the individual performance it can be spotted that actually the JIRA wasn’t used by some of the employees before the experiment. There was one person who never got anything assigned and two people who only got few tasks assigned altogether. Because of this reason it is not possible to compare if the game had any effect performance wise. The good news is that the game made it possible that everyone started to use JIRA and everybody receives tasks which are administered in the system. This could lead to a future aspect to investigate. So far after the 4 rounds it is not possible to see any patterns, but it would be interesting to see that after few extra months how the individual success rate changes. In Appendix 11.9.3 the success of the estimations during the gaming period is showed. The success rates are quite high regarding the estimation of the closed tasks. It can be seen that there are more mistakes regarding the estimations in the development team (Christoph, Mike and Sydney), than in the research team (Peter, Peti and Thomas).

All in all, it can be said that the number of tasks for each sprint are underestimated, but the tasks which are completed are mostly estimated right. One reason for not completing all the tasks despite the fact that the estimations are right is that in the agile environment there are many unexpected tasks. Another reason comes from the size of the company, there is always need for a help as there are not too many people in the company, which gives one person a bigger responsibility over a certain part.

The performance of the team didn’t decrease, that can be said based on the numbers. To make the quantitative data more supportive in answering the research question a longer time period would be needed, which is unfortunately out of the scope of a Degree Project.
<table>
<thead>
<tr>
<th>TEAM PERFORMANCE</th>
<th>Number of issues</th>
<th>Closed issues</th>
<th>Back to the backlog</th>
<th>Success rate[%]</th>
<th>Sprint length (nr of work days)</th>
<th>Normalized success rate for 13 work days [%]</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sprint 38</td>
<td>31</td>
<td>14</td>
<td>17</td>
<td>45%</td>
<td>11</td>
<td>53%</td>
</tr>
<tr>
<td>Sprint 37</td>
<td>33</td>
<td>22</td>
<td>11</td>
<td>67%</td>
<td>13</td>
<td>67%</td>
</tr>
<tr>
<td>Sprint 36</td>
<td>23</td>
<td>13</td>
<td>10</td>
<td>57%</td>
<td>13</td>
<td>57%</td>
</tr>
<tr>
<td>Sprint 35</td>
<td>33</td>
<td>19</td>
<td>14</td>
<td>58%</td>
<td>13</td>
<td>58%</td>
</tr>
<tr>
<td>Sprint 34</td>
<td>17</td>
<td>12</td>
<td>5</td>
<td>71%</td>
<td>16</td>
<td>58%</td>
</tr>
<tr>
<td>Sprint 33</td>
<td>17</td>
<td>12</td>
<td>5</td>
<td>71%</td>
<td>19</td>
<td>49%</td>
</tr>
<tr>
<td>Sprint 32</td>
<td>17</td>
<td>5</td>
<td>12</td>
<td>29%</td>
<td>18</td>
<td>21%</td>
</tr>
<tr>
<td>Sprint 31</td>
<td>15</td>
<td>9</td>
<td>6</td>
<td>60%</td>
<td>11</td>
<td>71%</td>
</tr>
<tr>
<td>Sprint 30</td>
<td>16</td>
<td>10</td>
<td>6</td>
<td>63%</td>
<td>9</td>
<td>91%</td>
</tr>
<tr>
<td>Sprint 29</td>
<td>12</td>
<td>7</td>
<td>5</td>
<td>58%</td>
<td>18</td>
<td>42%</td>
</tr>
</tbody>
</table>

Table 7 – The team performance before and after Gamification (Appendix 11.9)

Luckily, it’s not only about numbers, so the question can be answered from a different approach using the closing interviews (Appendix 11.7) and the final interview with the CEO (Appendix 11.8). Peter in the final interview explained me that JIRA was used very poorly before. The sprints were closed ad-hock and mainly development related tasks were administered in the system, which is the reason why some people have more tasks than the others before the game started. Also, there were no strict rules how to use the JIRA, so it happened that sprints were prolonged with even an extra week or that few tasks were deleted on the way. These reasons support that the data from the sprints before the game should be handled critically. Still, there is no clear visible increase in the success rate for the sprints after the gamification was introduced. Sprint 36 and Sprint 38 had difficulties. In Sprint 36 the company had a really important release, they introduced a new product to the market for the first time, so it created many ad-hock tasks which had to be completed immediately regardless the originally planned Sprint tasks. In Sprint 38 the senior developer had to focus on a major bug, which slowed down other people who would have needed his help to go forward faster.

Also, there is data which can be used up in this research from the closing interviews. Mike was using JIRA since the beginning and he said during his interview that for example he doesn’t feel any changes on the classical development team side, which consists of him and Christoph. They have been using JIRA the same way. For Mike the biggest change is given by the daily challenges which helped him a lot to plan his work routine, so he personally feels a better performance on a micro level, but he doesn’t feel it on the Sprint level. He was surprised that the research part of team managed to use the JIRA system better from the game point of view.
The research related tasks are harder to be planned, and it didn’t work out for all the people in the research part, which is supported by the collected data as well (Appendix 11.9.2). Christoph mentioned during his interview that the administration of the tasks became many times better than it was before. Everybody mentioned during the closing interviews that the effective work hours were not affected by the game.

The result from the quantitative data didn’t show a clear change in the performance of the team. The set goals were reached on a similar level. However, analysing the closing interviews and the final interview with the CEO it can be said that despite the fact that there is no visible change time wise and planning wise for a Sprint, there is strong change in how the goals were fulfilled. The daily challenges and meetings created a new tradition with which it is easier to follow the Sprint for each individual. By this smaller challenges and tasks breaking down approach it is much more visible how good is the team in their estimation and planning.

5.3 Q3: How is the gamified Scrum framework received within a startup organization?

The initial interviews helped to identify the expectation of the players, which was gathered in Table 2. The closing interviews played a major role in analysing how the game was received by the organization (Appendix 11.7). The purpose of the closing interview was to see if these expectations were met, and also to investigate in more depth what changes the players see in the company and what changes do they feel in themselves.

The structured closing interview first aimed to collect the best and the worst things regarding the gamification experiment from the players’ point of view. The answers were diverse, for every participant there was something different in the game that made it to the top 3 best things. Christoph and Mike mostly emphasized on the social aspect that the mood was brighten up and that there was a funny competition in between the teams. They also liked the actual game, especially the new design which made the game look more professional. Mike emphasized more on the possibilities to prank each other during the game. Mike also brought up the JIRA aspect that it was great that everybody learnt how to use it and actually used it. Peter also said that the focus that the JIRA received was great for the team, but on the first place he said that the concept of the daily challenges was the best thing to use for the foundation of the game. Sydney and Thomas also supported Peter’s finding. Sydney said that for him the most useful feature of the game was that it helped him in his daily work through the daily challenges and that he could
monitor his work performance easier. Thomas added to this aspect that sometimes he couldn’t wait for the daily meeting to see what interactions will happen. Peti also mentioned that the game managed to give him a good structure to work in. On the social aspect Peter mentioned that playing in pairs was a good idea for him. Many of the interviewees mentioned actual cards or challenges that they liked and that the playfulness of the game was something positive. Regarding the negative things the answers were quite similar. Almost everybody mentioned that they didn’t like those few situations when the cards were played in a way that it could have been destructive for work. Sydney mentioned the example when for him the situation was that if he fulfils his daily challenge then the other team would receive more XP for it than him, so that would motivate him not to work. He still did his challenge, just he said that these few occasions could have been controlled more by the game master. Peter also mentioned that the game master could have more power in the game, but he sees that it could bias the game a bit. Peti mentioned that the daily meetings became a bit longer than they were before, but it is not a real issue for him. Also, Christoph and Sydney mentioned few challenges that they didn’t like specifically. All in all, most of the interviewees were struggling to come up with 3 bad things, and the things they mentioned were very similar to each other, which means that the game could be improved easily along these comments.

Then the interview continued with comparing the expectations from the gamification (Table 2) to the opinion of the player if all the expectations were met. The hardest expectation to answer to was that they should gain a valuable experience from the game. Mike said that for him it was interesting to learn that so much more value can be gained from the daily meetings. Peter learnt that the JIRA planning and the daily meeting spiced with a little playfulness can create a motivating environment in the company. Sydney mentioned that he learned that the Homo Ludens concept (It discusses the importance of the play element of culture and society) can be true as according to his observation the players were happy to play and compete. 6/6 people agreed that the game was fun and funny to play. 5/6 people said that it was a new interesting aspect of working together. Only Thomas said that it is actually not affecting the working together part, it just gave a new insight in the other’s tasks, so everybody knows better what the other people are up to. On the other hand, Mike mentioned for example that for him it was a new aspect of working together because this way he could talk more with the colleagues he never worked together on a particular task. Everyone said that they feel that in overall the Scrum planning became better. For example, Mike said that only slightly better, Peti said that definitely better and Peter said that on a micro level definitely better. The game had rewards
(final reward) and punishments (losing a challenge), but it was interesting that the reward became less and less important through the time, because in the first 2 rounds the rewards were clearly defined at the beginning, but for the last 2 rounds the rewards were only specified after winning (Appendix 11.6.4). 6/6 agreed that there is not much administration at all. Few interviewees mentioned though that the game created more administration for the game master, but that also didn’t seem a lot to them. 6/6 agreed that the game didn’t affect negatively the effective work hours, didn’t destroy the workflow and didn’t decrease the productivity. Nobody said that the game was boring or overplayed. Sydney said that the game probably won’t become boring as long as it is maintained by a game master. Peter mentioned that he would love to try how it would work with different game masters.

After that the players were asked to tell what differences they see in the company and in their own performance. Christoph said that they laugh more. Christoph and Sydney said that the Scrum is taken a lot more seriously, which can be seen for example from the level of administration. Mike and Sydney emphasized that the communication became a lot better within the pairs and within the full team as well. Peti said that as he is the freshest member of the team he didn’t have a lot time before the gamification, so for him it was hard to tell any difference. Thomas said that as he sees this game managed to create a common point for the people in the Scrum and this is something they can talk about anytime in a way that everybody can join the conversation. Peter said that he sees an increase in creativity and mutual respect within the organization. 6/6 think that gamification had a positive effect on their individual performance. This effect varies between the people. Peter managed to keep his focus more on the pre-planned tasks, and he didn’t start new tasks randomly, which increases the goal fulfilment regarding the Sprint. Peti said that he is not that sure about the change, but the XP motivated him to finish some tasks faster. Mike was influenced on the daily level and on that level, he felt clearly that he performs better.

The final part of the closing interview asked for the opinion of the players about gamification itself and if they would like to continue playing the game after the action research is completed. The general feedback about gamification was that it is a good tool for helping a similar company or group of people to reach better work performance. Sydney and Mike tried to imagine this concept at a bigger firm or a multinational company and they made the conclusion that probably it would only work on a small team. Christoph mentioned that gamification could be a good tool for monitoring the performance of your employees while getting to know them more, so in
a bigger firm this method would help the employee-manager relation. Peter said that
gamification was above his expectations and that he sees the most value of it in increasing the
team spirit and the creativity. He positions gamification on a project management level, he
doesn’t think that it could work on a higher level of management. 6/6 people would love to
continue playing the game after the research period is over.

Summarizing the analysis of the closing interviews it can be said that all the participants were
satisfied with this gamification experiment. The expectations were fully met and most of the
participants stated that gamification exceeded their expectations. Peter emphasized that this
team is very open minded, so that can be a reason for the fact that it was quite easy to engage
everybody in the game. During the interviews the negative comments were not really negative,
they were more like small mistakes that can happen due to the rules of the games. These
comments were all constructive and already offered solutions for the problems during the
interview. For example, Sydney told about his situation that with not finishing his task he could
get more XP in the game, and his solution is that the game master should take control over this
situation by not letting cards to play out a situation like this. In general, there are no signs that
would suggest that someone experienced anything negative during this experiment. The
gamified Scrum was accepted by the whole team and the rules were respected. It can be seen
that there are many positive comments in the closing interviews. Also, the questions which
asked about the positive effects received more diverse answers, suggesting that there were many
different aspects to each person could relate to.

5.4 Q4: What effects gamification has on motivation?

Motivation is an important aspect when gamification is involved, since a major reason for using
gamification is to boost the motivation for the individuals who are involved in the gamified
environment. This research question wasn’t investigated directly. I was hoping that as
motivation was the only thing that came up more than once at the initial interviews (Table 1) it
will come up again during the closing interviews. With the indirect approach my goal was to
hear about motivation without asking about motivation. Many of the questions from the closing
interview received comments about motivation.

Mike mentioned that he feels extra motivation when the daily meetings are coming up. This
motivation helps him finishing the daily challenge, so then his team is able to draw new cards
and collect XP. This feeling can be connected with intrinsic motivation. There is a meeting
which is a work related task, and probably before the experiment it wasn’t that motivating, but now depending on his work Mike can influence the level of the daily meeting. This intrinsic motivation led to the fact that Mike spends happily the meeting time at work (Benedetti et al 2015). He liked the challenge when they had to make motivational cards for another team for few work days. Also, he mentioned that the game added extra motivation to him, which resulted in few occasions when he spent extra time in the company to finish up a challenge. The reason for the behaviour can be that Mike reached the Flow state through the motivation that he received from the fact the it will be beneficial for him to finish task on time (Ullén et al 2011). Moreover, he observed on himself that before he was checking the daily menu for the restaurant more, but nowadays he focuses on finishing the challenges faster instead.

Peti mentioned directly that he feels more motivation to finish the assigned tasks because of the game. Thomas and Christoph both mentioned that they feel motivation to finish the JIRA tasks which are considered boring by them. They work on these tasks with more enthusiasm, because the tasks have XP value. It can be said that the game managed to induce an intrinsic type of motivation in them that managed to motivate them to the level the they want to finish the tasks regardless if they are boring or not, which can be associated with the Self-Determination Theory (Gagne and Deci 2005). Thomas also mentioned that he can’t wait for the daily meetings where the interactions happen. Christoph said that at the beginning of the game he had a very strong motivation to not lose any challenge and to finish every task on time, so he fits in the team. Later he realised that everybody else also fails challenges, so he became less stressful about it. This comment from Christoph also fits into the Self-Determination Theory as it shows that he managed to find the right balance between enjoying the work and the game while finishing the required number of tasks (Gagne and Deci 2005).

Peter said that the game motivates him not start random new tasks but to focus more on the already assigned ones. This helps him to control his focus better and according to the sprint goals. Peter’s approach clearly can be associated with the Self-Determination Theory as Peter is able to motivate himself to finish with the tasks that he sets up for himself as a goal (Gagne and Deci 2005). Peter said that for him the daily challenges created the motivation and that the sprint related tasks didn’t manage to engage him as much as the daily challenges. Peter also became motivated to be the game master at some point for this game.

Sydney mentioned that the people now are willing to do the mandatory administration in JIRA, so they are motivated to log their performance. Sydney was motivated to think through the tasks
better and this way he divided the tasks into smaller tasks. It became clear for him that this way it is easier to estimate better and to finish a task faster. The game induced a new habit in Sydney to change his behaviour regarding planning his work, which can also be an example for the Self-Determination Theory (Gagne and Deci 2005).

Summarizing all the motivation related answers there are few effects which can be identified. The biggest effect that gamification had on motivation is that the game increased the willingness of the employees to work on the tasks they don’t like that much, so they can collect the XP for the game. The other visible effect is that the employees got motivated to do all the administration they never did before. The game also motivated the people to think more about their tasks and to follow the sprint better. In general, it can be said that the Self-Determination Theory worked behind the fact that the people became more independent in setting and reaching the work related goals. Finally, in general the game created a motivating environment where the teams can compete by working harder and based on the interviews it be can said that the motivation came from the gamification and not from the fact that the team was observed. Many of the interviewees mentioned aspects such as the people are laughing more, the communication is better, the team has a common topic to discuss at any time, the people cheer for or against each other. All these inputs suggest that the extra element of gamification added to the work-life of this company managed to induce the psychological connection between the individuals and their tasks, which based on the Self-Determination Theory must has been the reason behind the increasing motivation of the individuals to finish the planned tasks (Gagne and Deci 2005). Also, the Homo Ludens Theory can be seen in action as all the participants were happy to introduce this gaming element to their everyday life (Huizinga 1995). Gamification itself can be considered a working theory for this short period of time while this Degree Project was carried out as by the introduced game elements not only the team spirit and motivation managed to increase, but also from the qualitative aspect there were positive effects on the performance of the team as well (Deterding et al 2011, Pedreira et al 2014).
6 Conclusion

Within the scope of this Degree Project a successful action research case was developed, which can be a valuable input for the field of gamification as there is still a need for new hands on cases (Kasurinen and Knutas 2017).

The action research case shows that the tools of the Scrum methodology are indeed suitable for applying gamification to them. The two main Scrum tools which were gamified in this case are the kick off meetings and the daily meetings, so the events which require the fully present team. This consideration guaranteed that the game will be easy to manage, monitor and measure. The game’s positive effect on the goal fulfilment of the team wasn’t supported by the gathered quantitative data, and also the complementing qualitative data only managed to point in the direction that the goal fulfilment became a lot more effective on the micro level, which means that daily tasks generated through the daily challenges managed to structure the work of the team better. To be able to show the game’s effect on goal fulfilment on the Sprint level it would require a longer investigation period.

The social aspect with investigating how is the gamified Scrum received showed that in this particular team it was received positively. The whole team got engaged in the game and at the end they had many positive comments and were looking forward to continue playing the game even after the experiment. The motivation of the participants was affected by the game. The most successful motivational factor from the game was the collection of the XP, which on one hand made it possible to create smaller tasks which are easier to estimate and fulfil, and on the other hand it motivated everybody to start to administrate their performance. The limitation of this case was that the investigated team wasn’t really diverse. The people were from about the same age, all of them were males, and all of them were about equally open minded about participating this experiment.

The weakness of this action research is that this 2 months period was not enough to show a clear result on how the goal fulfilment was affected by gamification in the investigated startup organization, which was the main problem from the company point of view. However, the gamification experiment can be considered successful as the company welcomed the game positively and requested to continue on with playing it after the Degree Project was carried out. This shows that the developed method for increasing the performance of the Scrum team has many positive effects that were recognized by the participants. Positive effects such as helping
to structure the tasks, helping to plan better the work load and not to mention the fact that the teams felt that the work environment became more fun which eventually increased the team spirit to some extent.
7 Future Research Suggestions

The biggest drawback of this action research was the short time frame. Two months are not enough to engage deeply enough in the topic. The change in the performance wasn’t supported yet by the quantitative data, but the qualitative data indicated that there is a positive change, and it would be only visible if there were more Sprints to investigate while the game is in use. Also, for the social aspect there is a need for a longer investigation time. The games tend to become boring or too repetitive after playing them for too long. The time to reach that state is different for every game, and it would be interesting to see that after how much time this game will become boring. It would be interesting to see what effects the game would have on the group at that point.

The Degree Projects goal was a bit too broad which resulted that the fourth research question regarding the motivation didn’t receive enough attention and became more like a question where only the surface was scratched. It would be beneficial to study motivation in more depth as the initial conclusion showed that the participants felt a change in their motivation.

The game could be changed to be more customizable and, in that case, an Experimental research design would be able to gain valuable data in many other aspects not included in this action research. For example, by using a control group who is not playing a game there would be one more way to compare if there is any change in the performance. Also, the same game could be tried on different kind of groups, which are for example more diverse than the group in this action research.

It would be interesting to apply gamification to other areas within the same company. Actually, after the Degree Project the next project at the company is to develop a “Sales Train”, which will be a sales tool helping the company to increase their performance regarding selling their product. In the best case scenario, the “Sales Train” will be able to replace the current CRM (Customer Relationship Management) tool used at the company.
8 Ethical Considerations and Bias

In my case with becoming the game master I also became the Scrum master for the investigation period. This way as the change agent in the action research setting I was a colleague and a game master at the same time for the people in the Scrum team. Because of this situation I had to be very careful to be consistent with everyone when there was an unexpected situation which was not handled by the game. For example, if I accept once a delay of logging a task, then in the future it would be unfair to not let the others to do the same. In order to avoid these situations, the game contained a decision making rule, where there was need of 3 votes from 5 in order to accept something.

As the Scrum master I could oversee the tasks and challenges specified by the individuals so the responsibility to filter any cheating activity became easier on a basic level. Unfortunately, my experience in coding is not as broad as a developer’s experience so if a person really wanted to trick me it would have been possible. For this reason, the voting rule was also a safety net for me, because the others could filter cheating by rejecting a report or a daily challenge suggestion. Fortunately, there was no need to use this rule.

One ethical dilemma for me was that how will the people welcome the idea that they will receive experience points (XP) and based on these points they will be climbing higher and higher on a mountain. The question is how the person will feel who is in the pair which is the last one on the mountain. Will it demotivate the pair? In order to avoid this situation before the first game it was stated by the CEO of the company that this gamification experiment is just a game which intends to help the team to manage better their tasks while they are having fun, and that based on the XP and the place on the mountain nobody will be judged or will receive any different compensation. The winners in the game will not receive monetary bonus, only small rewards can be specified which have to be approved by the CEO first.

Another ethical dilemma for me was that my game can became a bit more time consuming by having longer daily meetings than before. Is it okay that I make people play games in the middle of the day for 10-15 minutes instead of letting them work? I would justify my action that one important effect of this game is that it creates more motivation, so the originally planned tasks will be finished despite the 10-15 minutes we spent on playing. Maybe even looking at the bigger picture I sacrifice this time for the greater good, because more tasks are estimated right and closed on time on a long term.
One more ethical dilemma can be that what if one of my challenges creates an uncomfortable situation for somebody. For example, in the closing interview (Appendix 11.7) Christoph mentioned that he felt bad that the repair guy entered the room when he was fulfilling the “Slavic squat” challenge. In this case the challenge was my idea, so the responsibility has to be taken by me as well. Usually when a card was challenged by the team that it is too hard or can be uncomfortable I discard the card from the game.

Regarding bias I tried to make the Degree Project as transparent as possible. There is an extensive appendix which contains all the data that was gathered through the project. Unfortunately, the interviews and focus groups can be biased because the language of the interviews was in Hungarian as this was the language the interviewees were the most comfortable with. I chose not to force the English interviews as I wanted to gather as much insight as possible. Also, the interviews were not recorded. The interviews were noted in Hungarian during the interview at the place. The interviewees were able to check the notes and they were allowed to complement if they forgot something at the beginning. The interview notes then were translated to English on the same day and finally added to the appendix. Also, the initial observations can be biased as they are completely building on my own observations. I did the initial observation before even starting to design the game, so at that time I was not involved in the meetings and I could observe the events as a completely outsider.

The bias from the interviews and focus groups can be neglected as it was done together with the interviewees, but the bias from the observation cannot be neglected. The first research question was highly influenced on the observations I made. Based on those observations I decided to gamify the kick off meetings and the daily meetings. I can’t be sure that if someone else would do the same observations the outcome would be the same as with my observations.
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11 Appendix

11.1 Organizational Ethnography: Initial Observations

11.1.1 Kick off meeting observation – 29/01/2018

**Sprint 33 result:**

12 issues closed

5 issues back to the backlog

**Sprint 34 opened:**

17 issues to be done

**How does a kick off meeting work?**

Before the kick off meeting Peter sits down with Mike to talk through the upcoming tasks for the sprint. Then Mike administrates the outcome in the JIRA.

The kick off meeting starts with closing the issues from the actual sprint. In general not too many people are used to log their work performance. Christoph and Mike try to log their performance at a basic level by putting some of their finished tasks in the done section, but it can be seen that the logging is done on the kick off meeting itself. The team goes through all the tasks in the to do list and the assigned person states if the task is finished or not. After going through the tasks of the actual sprint, the sprint can be closed.

Before the new sprint Peter talks about the goals and motivation for the next sprint. The new sprint is designed during the kick off meeting. Some of the tasks were added upfront by Mike and some of the tasks are added at place. When a task is added the assigned person has to estimate the time needed for the given tasks. This estimation often is not thought through and it’s just a quick or random estimation. Also, in some cases the estimation was skipped. This part of the kick off meeting is the most time consuming.
The people who work in the research part usually create 1 or 2 big tasks, which make it difficult to see what the steps or stages for are reaching the completion of the task. One can imagine how hard it is to estimate the time needed for a task like that.

When the sprint is designed and the closing date is specified, the meeting is closed. The kick off meeting is considered a bit too long, especially when a person thinks too much time about his tasks at the meeting. It happened with few that they were looking at their smart phones when they were not involved. The kick off meeting takes up about 1.5 hours.

11.1.2 Daily meeting observation – 1st -16th February 2018

How does a daily meeting work?

The meeting is originally scheduled for before lunch each workday. In some cases, it happens that the meeting is postponed for after lunch, it depends on different workflows, e.g. if Peter is on a long call before lunch then it’s better to eat before the meeting, or on external circumstances, e.g. if the team ordered the lunch and it arrives earlier than expected.

The daily meeting is usually between 15-25 minutes.

The participants are the ones participating in the Scrum.

The team gathers in a meeting room. The Scrum master opens the dedicated „Daily textbook” and then each person tells what he did in the last day and each person can also ask for help if stuck somewhere. The Scrum master takes the notes from the meeting.

The „Daily textbook” is a long-time tradition of the company, the textbooks after they are filled are kept. A typical note looks the following: date, person’s name, summary of the person’s talk. Currently the purpose of the meeting is to get up to date with everybody’s tasks and struggles.

11.2 Interview for identifying gamification objectives 01/02/2018

Exploring the company’s aspect and identifying the gamification objectives with the CEO, Peter (15 mins)

1. What are the weaknesses in the company?
A. **Planning ahead:**

   It’s hard to estimate that

   - how much time is needed to develop a feature
   - what can the company achieve within 1 Sprint

B. **The collaboration within the research team is weak**

   The tasks are distributed and everybody works alone on them

C. **There is no honey in the kitchen**

   added jokingly

2. **In which of these weaknesses would you like to see the improvement the most?**

   **Planning ahead**

3. **Why? Give examples why would it be useful to improve in this weakness!**

   From the business perspective it’s hard to give estimations to the different stakeholders, which has a risk. Planning is the link between the development and business → for example the question when we will have android release is an interesting question both from development and business perspective. There is a need for a good and reliable way of estimating deadlines, and this estimation depends on the team and on every individual at the same time. Also, if gamification increases the performance that’s an extra, but the estimation issue has the highest priority nowadays.

4. **Which areas/tasks in the company are belonging to this weakness?**

   Research, Development – it’s a small company so almost everybody

5. **Who are the ones who should be involved in the Gamification?**

   The people involved in Scrum: Peter, Peti, Thomas, Sydney, Mike, Christoph

**11.3 Initial Interviews**

**11.3.1 Christoph interview – 16/02/2018 (15 mins)**

1. **Background info (name+age+education+experience in software engineering)**
25 years old, education background: BSc in Electrical Engineering. Ha always enjoyed more the programming tasks, but at the university the level was not satisfying for him. Ha started to learn coding in more depth when he started to work at this company about 3 years ago. C, C++, script languages, C#, iOS. He is in the developer team.

2. **What are the first 3 things that come to your mind when you hear Gamification?**
   1. Something good/positive
   2. Board games
   3. Cooperation

   *it was really hard to find the 3 things*

3. **Are you aware of the concept of Gamification? (yes/no - explain it a bit if no)**
   Not really, almost zero idea.

4. **How do you feel about being exposed to a Gamification experiment?**
   He thinks it’s a good idea. He can see himself to be part of it, and he can see that it could motivate him or the others.

   He doesn’t like the boundaries of the large companies, when there are many positions and levels in a team. Our team is small, we don’t really have levels, so anybody can approach anybody with questions or critiques, and he thinks that this game also helps in keeping this tradition in this company.

   What he really doesn’t like is, when there is a competition in work which is harmful for the other person’s work (which is not the case in this company). He believes that the goal is to work together in cooperation and not against each other. The game could be a
way to put the competition aspect into the game, so the people can create competition in that „world”.

5. What is your expectation from Gamification? (What changes do you expect? etc.)

To gain a valuable experience from it
It should be fun and funny

6. What kind of rewards can you imagine?

Food, desserts
Darts party during the work hours if the team achieves a certain goal

11.3.2 Mike interview – 13/02/2018 (15 mins)

1. Background info (name+age+education+experience in software engineering)

27 years old, His highest diploma is the high school mature exam, and he has been studying computer science for the last 8 years (currently he is on a gap semester). He worked as a junior and senior iOS developer before, now he is a software engineer at this company, he worked for about 2-2.5 years until this point.

2. What are the first 3 things that come to your mind when you hear Gamification?
   1. Serious tasks made into games
   2. Competition
   3. Fun

3. Are you aware of the concept of Gamification? (yes/no - explain it a bit if no)

Not aware, he heard about it from me for the first time.

4. How do you feel about being exposed to a Gamification experiment?

He is happy to participate. He like to try out experiments.
5. **What is your expectation from Gamification? (What changes do you expect? etc.)**
   - Better planning
   - Getting better in predicting the future company wise
   - It shouldn’t decrease the productivity
   - It shouldn’t destroy our workflow

6. **What kind of rewards can you imagine?**
   - Winner gets a crate of beer
   - Small rewards such as a certificate (so the main idea is that the game shouldn’t be about the reward only, so for example giving money would be a bad idea as many for providing the background for life, and then other motivation should be sought) → He believes that a „buksi simi” is enough („buksi simi” – Hungarian way to express that somebody praises somebody.)

**11.3.3 Peter interview – 13/02/2018 (15 mins)**

1. **Background info (name+age+education+experience in software engineering)**
   
   Peter, 40 years old, PhD in Applied Mathematics. He works in software engineering for the last 19 years. He is in the research part of team.

2. **What are the first 3 things that come to your mind when you hear Gamification?**
   
   1. That we try to make the inconvenient things more convenient
   2. Motivation
   3. Team spirit

3. **Are you aware of the concept of Gamification? (yes/no - explain it a bit if no)**
   
   Moderately and heard from me for the degree project. He believes that Scrum could be interpreted as gamification as you have different roles there and you have to reach goals.
4. **How do you feel about being exposed to a Gamification experiment?**

Absolutely positive! Very curious to try out this method, he likes to experiment in general. For example, there are slower and faster programmers, which probably highly depends on motivation, and it would be interesting to see if the worktimes could be increased by gamification. His question or fear is that will the game work on a longer period of time, because at the beginning it must be exciting, but who knows what will happen later – and for example at Scrum at the beginning it’s more interesting, but it later it manages to serve the same purpose.

5. **What is your expectation from Gamification? (What changes do you expect? etc.)**

   Plus motivation

   A new exciting aspect of working together / spending time together at work

   It’s good for real if it’s hard to get bored of the game. (It cannot be „overplayed“)

6. **What kind of rewards can you imagine?**

   Team glory

   Individual awards, like a badge or a challenge cup which goes from winner to winner

   materialistic rewards

   But the most important is that we play it together

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**11.3.4 Peti Interview – 13/02/2018 (15 mins)**

1. **Background info (name+age+education+experience in software engineering)**
28 years old, MSc in Mathematics – not informatics background, he studied it as a hobby, so also at his previous work he had to learn programming at place (e.g. now he is learning python at this company). He worked about 2.5-3 years in this segment.

2. What are the first 3 things that come to your mind when you hear Gamification?
   1. To make a process similar to a game
   2. Game
   3. Productivity

3. Are you aware of the concept of Gamification? (yes/no - explain it a bit if no)
   Not

4. How do you feel about being exposed to a Gamification experiment?
   It sounds interesting, I’m very curious.
   He asked that how will I be able to measure the change (before/after the gamification)

5. What is your expectation from Gamification? (What changes do you expect? etc.)
   That there will be rewards and punishments (but maybe punishments are too negative, so not sure about that part)

   Not sure what to expect, the main question is if the game will have any effect on him. He said that some computer games for example could have a high impact on him, but there were also some computer games where he got bored really fast.

6. What kind of rewards can you imagine?
   One day extra holiday (but maybe that’s a too big value) or maybe if there is a team goal met, then there could be a one day holiday for the entire company –>
used up as a teambuilding activity (because for now every team building activity is after work in the evening)

Or one bottle of beer/wine, or a lunch, or a dessert as a reward

11.3.5 Sydney interview – 14/02/2018 (15 mins)

1. Background info (name+age+education+experience in software engineering)

30 years old, his highest diploma is the high school mature exam. During his university studies he already started to work, so he stopped with his university studies, and he is already working in this industry for the last 5 years. Currently he is doing an online degree next to his job.

*He has a special status in the team as Sydney is self-employed, but this company is his main client and he is almost always in the office with the team, which made him suitable for asking him to participate as well in this experiment.

2. What are the first 3 things that come to your mind when you hear Gamification?

1. „I should google it”
2. Something that is enjoyable for all
3. Underestimating the fact that the work can be enjoyed purely for itself (A person can simply love his job just for itself)

3. Are you aware of the concept of Gamification? (yes/no - explain it a bit if no)

Not really.

4. How do you feel about being exposed to a Gamification experiment?

Curious how will it work and affect the team. A bit sceptical about it, but definitely opened to try it.
5. **What is your expectation from Gamification? (What changes do you expect? etc.)**

   Expectations:

   It shouldn’t be too much administration (easy bureaucracy)

   It shouldn’t affect the effective work hours (the same time should be available for work)

   It shouldn’t belittle the current workflow/tasks

6. **What kind of rewards can you imagine?**

   Not sure that we need any „real” rewards.

   follow up question: So what kind of „not real” rewards can you imagine?

   Leaderboard or a scoring system

   follow question: Would it motivate you?

   Well…No. In his case he said that he feels that he already has the motivation to work on his task as they are engaging and interesting, and also help him to learn a lot. He thinks that he would finish the same work whether or not a motivation system is there.

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**11.3.6 Thomas interview – 13/02/2018 (15 mins)**

1. **Background info (name+age+education+experience in software engineering)**

   Thomas, 25 years old, MSc in Control Systems, 1,5 years in software engineering industry (at this company), he is part of the research team, his task is mainly coding algorithms based on mathematics

2. **What are the first 3 things that come to your mind when you hear Gamification?**
1. RPG (Role Playing Game)
2. Motivation
3. Levelling up
4. Are you aware of the concept of Gamification? (yes/no - explain it a bit if no)
   Kind of → Implementing game elements in a work environment to motivate the employees for reaching better performance at work
5. How do you feel about being exposed to a Gamification experiment?
   Super curious. He has many questions:
   How will it work? How will it motivate me? How will it motivate the others?
   He is a bit worried that the idea sounds better in theory than in real life implementation.
6. What is your expectation from Gamification? (What changes do you expect? etc.)
   No expectations.
   So the changes question was asked:
   He expects change int he Scrum: he said that he expects a more thorough/meaningful Sprint planning, which would lead to a better structure (in a sense that maybe the order of the tasks will be more logical for example)
6. What kind of rewards can you imagine?
   Some free hours or a half-day leave → when a task is finished with own working time (like a task requires 10 hours and you do it in one day to get done with it faster, and in exchange the next day could be shorter etc.)
11.4 Player analysis

11.4.1 Bartle test

The Bartle Test

Name: ............................................................................................................

1. Which is more enjoyable to you?
   A) Killing a big monster
   B) Bragging about it to your friends

2. Which do you enjoy more in quests?
   A) Getting involved in the storyline
   B) Getting the rewards at the end

3. Which would you rather be noticed for in an online game?
   A) Your equipment
   B) Your personality

4. Which do you enjoy more in an online game?
   A) Getting the latest gossip
   B) Getting a new item

5. Which would you rather have, as a player in an online game?
   A) A private channel, over which you and your friends can communicate
   B) Your own house, worth millions of gold coins

6. Which would you enjoy more as an online game player?
   A) Running your own tavern
   B) Making your own maps of the world, then selling them

7. What's more important in an online game to you?
   A) The number of people
   B) The number of areas to explore

8. What's more important to you?
   A) The quality of roleplaying in an online game
   B) The uniqueness of the features, and game mechanic

9. You are being chased by a monster in an online game. Do you:
   A) Ask a friend for help in killing it
   B) Hide somewhere you know the monster won't follow

10. You're a player in an online game, and about to go into an unknown dungeon. You have your choice of
one more person for your party. Do you bring:
A) A bard, who's a good friend of yours and who's great for entertaining you and your friends
B) A wizard, to identify the items that you find there

11. Would you rather
A) Vanquish your enemies
B) Convince your enemies to work for you, not against you

12. Which is more exciting?
A) A well-roleplayed scenario
B) A deadly battle

13. Which would you enjoy more?
A) Winning a duel with another player
B) Getting accepted by a clan

14. Is it better to be:
A) Feared
B) Loved

15. Would you rather:
A) Hear what someone has to say
B) Show them the sharp blade of your axe

16. In an online game, a new area opens up. Which do you look forward to more?
A) Exploring the new area, and finding out its history
B) Being the first to get the new equipment from the area

17. In an online game, would you rather be known as:
A) Someone who can run from any two points in the world, and really knows their way around.
B) The person with the best, most unique equipment in the game

18. Would you rather:
A) Become a hero faster than your friends
B) Know more secrets than your friends

19. Do you tend to:
A) Know where to find things
B) Know how to get things?

20. Which would you rather do:
A) Solve a riddle no one else has gotten
B) Getting to a certain experience level faster than anyone else

21. In an online game, would rather be known for
A) Knowledge
B) Power

22. Would you rather:
A) Defeat an enemy
B) Explore a new area

23. If you're alone in an area, do you think:
A) It's safe to explore
B) You'll look elsewhere for prey

24. You learn that another player is planning your demise. Do you:
A) Go to an area your opponent is unfamiliar with and prepare there
B) Attack him before he attacks you

25. You meet a new player. Do you think of them as:
A) Someone who can appreciate your knowledge of the game
B) As potential prey

26. In an online game, would you rather:
A) Have a sword twice as powerful as any other in the game
B) Be the most feared person in the game

27. In an online game, would you be more prone to brag about:
A) How many other players you've killed
B) Your equipment

28. Would you rather have:
A) A spell to damage other players
B) A spell that increases the rate at which you gain experience points?

29. Would you rather receive as a quest reward:
A) Experience points
B) A wand with 3 charges of a spell that lets you control other players, against their will.

30. When playing a video game, is it more fun to:
A) Have the highest score on the list?
B) Beat your best friend one-on-one?
11.4.2 Bartle test Evaluation

+A: +1 for Achiever +S: +1 for Socializer

+E: +1 for Explorer +K: +1 for Killer

Maximum for each is 15

Then check the percentage (e.g. 5/15 means 33%)

Highest percentage wins

1. Which is more enjoyable to you?
   +A Killing a big monster
   +S Bragging about it to your friends

2. Which do you enjoy more in quests?
   +S Getting involved in the storyline
   +A Getting the rewards at the end

3. Which would you rather be noticed for in an online game?
   +A Your equipment
   +S Your personality

4. Which do you enjoy more in an online game?
   +S Getting the latest gossip
   +A Getting a new item

5. Which would you rather have, as a player in an online game?
   +S A private channel, over which you and your friends can communicate
   +A Your own house, worth millions of gold coins
6. Which would you enjoy more as an online game player?
   +S Running your own tavern
   +E Making your own maps of the world, then selling them

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   +E The number of areas to explore

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   +S The quality of roleplaying in an online game
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9. You are being chased by a monster in an online game. Do you:
   +S Ask a friend for help in killing it
   +E Hide somewhere you know the monster won't follow

10. You're a player in an online game, and about to go into an unknown dungeon. You have your choice of one more person for your party. Do you bring:
    +S A bard, who's a good friend of yours and who's great for entertaining you and your friends
    +E A wizard, to identify the items that you find there

11. Would you rather
    +K Vanquish your enemies
    +S Convince your enemies to work for you, not against you

12. Which is more exciting?
    +S A well-roleplayed scenario
    +K A deadly battle
13. Which would you enjoy more?
   +K Winning a duel with another player
   +S Getting accepted by a clan

14. Is it better to be:
   +K Feared
   +S Loved

15. Would you rather:
   +S Hear what someone has to say
   +K Show them the sharp blade of your axe

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     knows their way around.
   +A The person with the best, most unique equipment in the game

18. Would you rather:
   +A Become a hero faster than your friends
   +E Know more secrets than your friends

19. Do you tend to:
   +E Know where to find things
   +A Know how to get things?
20. Which would you rather do:
   +E Solve a riddle no one else has gotten
   +A Getting to a certain experience level faster than anyone else

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   +E Knowledge
   +K Power

22. Would you rather:
   +K Defeat an enemy
   +E Explore a new area

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   +K You'll have to look elsewhere for prey

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   +E Go to an area your opponent is unfamiliar with and prepare there
   +K Attack him before he attacks you

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   +K How many other players you've killed
   +A Your equipment

28. Would you rather have:
   +K A spell to damage other players
   +A A spell that increases the rate at which you gain experience points?

29. Would you rather receive as a quest reward:
   +A Experience points
   +K A wand with 3 charges of a spell that lets you control other players, against their will.

30. When playing a video game, is it more fun to:
   +A Have the highest score on the list?
   +K Beat your best friend one-on-one?

11.5 Focus group discussion on game design – 16/02/2018 (2 hours)

I organized a focus group discussion for brainstorming on my already existing game idea. The task was the following: Come up with zone and challenge card ideas.

The focus group setting:

I invited 4 friends for dinner to talk about the game for my Degree Project, and to get some input by fresh and creative ideas. With the 4 invited friends we worked together in an international student organization during my BSc study years. They are also familiar with the concept of gamification, also some of them attended one of my gamification workshops. The most important is that they are very creative.

Beginning of the meeting:

I explained the Climbing Mount Scrum game’s concept and showed the board for the game. Then explained the basic rules and how can the players collect points (XP). The part I needed input is the zone and challenge cards. – 30 mins
The meeting:

The participants were free to come up with ideas. The ideas were challenged. – 60 mins

Outcome:

After the meeting I filtered the ideas and designed the first set of cards – 30 mins

Zone cards:

<table>
<thead>
<tr>
<th>Challenge card</th>
<th>Pickaxe</th>
<th>New rule</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image" alt="Challenge card" /></td>
<td><img src="image" alt="Pickaxe" /></td>
<td><img src="image" alt="New rule" /></td>
</tr>
<tr>
<td>Risk between 10-50XP then take a Challenge card.</td>
<td>You get double XP until you climb out of the current zone</td>
<td>You can come with a small rule, which has to be followed for 1 workday by the whole group. If not, it means 20XP loss for the team which breaks the rule.</td>
</tr>
<tr>
<td>If you do the Challenge you get the XP, if not, you lose the XP.</td>
<td>Team: ...........................................</td>
<td>Team: ...........................................</td>
</tr>
<tr>
<td>Team: ...........................................</td>
<td>XP: .................................</td>
<td>XP: .................................</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Get Lucky</th>
<th>Back to the future</th>
<th>Duel of fates</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image" alt="Get Lucky" /></td>
<td><img src="image" alt="Back to the future" /></td>
<td><img src="image" alt="Duel of fates" /></td>
</tr>
<tr>
<td>You can push 1 challenge card from yours to another team in the future.</td>
<td>You can re-estimate one of your Jira tasks</td>
<td>Challenge a team in Darts (1-1 person). If you manage to defeat the team the scores will be swapped between you. If you lose, the challenged team will receive 50XP from your team. (If you are on the top then it’s only a 50XP bet)</td>
</tr>
<tr>
<td>Tent camp</td>
<td>Yeti</td>
<td>Sugar daddy</td>
</tr>
<tr>
<td>-----------</td>
<td>------</td>
<td>-------------</td>
</tr>
<tr>
<td><img src="image1" alt="Tent camp icon" /></td>
<td><img src="image2" alt="Yeti icon" /></td>
<td><img src="image3" alt="Sugar daddy icon" /></td>
</tr>
<tr>
<td>If all on your current zone fulfil their daily challenge for tomorrow, you will all receive double XP for the daily challenge. Teams:</td>
<td>You have to take a challenge card with risking 50XP</td>
<td>Choose a team, and they can throw with the darts arrow. 3 tries maximum (take or leave). They will receive the thrown number% of your XP from the upcoming 3 workdays. Sugar daddy:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Team: Number:</td>
</tr>
<tr>
<td>Avalanche</td>
<td>With great power...</td>
<td></td>
</tr>
<tr>
<td><img src="image4" alt="Avalanche icon" /></td>
<td><img src="image5" alt="With great power icon" /></td>
<td></td>
</tr>
<tr>
<td>All teams have to fulfil all their daily challenges or otherwise nobody gets their points tomorrow.</td>
<td>Choose who of you in the team will receive double XP for the upcoming 2 workdays. Name:</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Challenge cards:

<table>
<thead>
<tr>
<th>Let’s do it!</th>
<th>Let’s do it!</th>
<th>Let’s do it!</th>
</tr>
</thead>
<tbody>
<tr>
<td>One of you has to send a funny picture/meme to the company e-mail group for the upcoming 5 workdays.</td>
<td>One of you has to send a funny video to the company e-mail group for the upcoming 3 workdays.</td>
<td>The team before you (if you are the first, then the team after you) can change both of your desktop wallpapers (on all screens) for the upcoming 5 workdays.</td>
</tr>
<tr>
<td>Let’s do it!</td>
<td>Let’s do it!</td>
<td>Let’s do it!</td>
</tr>
</tbody>
</table>
| Wear the Fez for 1 workday (You can divide it between each other). | You need to make motivational cards for the team in the last position for the next 3 workdays. If you are the last one, then you need to make motivational cards for each other within the team. (One card per day.) | You need to do one favor for the team with the highest score (1-1 for 1-1). If you are that team, then for the last team. Favor list:  
- Making tea/coffee  
- Grab the food for them |

The concept of LateralCoin:

The coins are hidden in the office. The person who finds one can exchange it for a zone card.

11.6 Focus group discussions between the Sprints

11.6.1 After Sprint 35 (1st round)
1st Focus group discussion – 6th of March 2018

Topic: Impressions after the first round of the game. Suggestions for improvement.

Length: 20 min

Participants: 5 out 6 players

The topic was presented, after that I stepped back and listened to the conversation happening. No moderation was needed through the discussion.

Points of discussion:

The challenge cards are valued too high, 50XP is too much if we compare it with XP which can be collected by fulfilling work related tasks. The group agrees on decreasing the value to 30XP maximum.

It feels too much that there is a possibility to double the points. If someone is not lucky with the cards it can become an issue. The group agrees that the cards should be x1,5 instead of x2.

There should be more challenges in connection with the work itself.

The game should end at the end of each Sprint. The winner is the team which goes the furthest. Ideas came as changing the game field sometimes, for example for a space discovery background looking for new planets.

The question was raised why at the beginning it’s only 50XP-s to change a zone, but it was tackled within the group that probably it was set like that because not many JIRA tasks are closed at the beginning so the first days are usually slower in XP collection, and it’s nice to get draw 1-1 card faster.
What happens when the Sprint has to be re-planned and there are new JIRA tasks? The need for the long term estimation with the JIRA tasks was questioned, the suggestion instead was to set one main goal (or milestone) for 100XP, and to keep the daily challenge system for the other 100XP. The motion was tackled with explaining the need for the ability to estimate for longer period of time. The group agreed that the original system with JIRA task estimation + daily challenge is good, just there is a need to tackle down the randomly incoming tasks somehow. The group agrees to leave this problem to me :D :D

Introducing task types: Development, Research, Brainfuck. Different task types would have different rules, for example estimation for research type should be flexible.

Update the XP for the logging. Now it’s +5 for each log, but then each person has different amount of tasks, which makes the game unfair in a sense. The group agrees in having a fixed amount of points for the logging as for the JIRA task estimation.

It would be nice to see a leaderboard with the individually collected XP, and to see who the best is.

There should be more focus on strengthening the collaboration between the team members in a team.

The “try not to laugh challenge” card to hard and no fair, should be discarded. The “duel of fates” darts duel card is too strong, a team can lose too much points.

Is it possible to group the cards so there are different levels of challenges for each zone? Open question.
“Surprise box” concept: having an opportunity to draw a card from few boxes, and some boxes would contain a card and some won’t. This opportunity could cost few XP-s and should be limited. The reason for this suggestion was that there was 1 or 2 days when no one could draw a card and everybody was sad, because drawing cards is fun.

We should introduce statuses or “independent winner routes” as the longest trade route card in the game Catan. For example, to gain XP by try to keep a status card at the team: Combo card? – the team which fulfils the most percentage of the daily challenges

Challenge points should increase through the time. The group agrees to drop this idea as it would make the tracking of XP-s much harder.

Open questions for Alex (problems to solve):

How to handle sick leaves or holidays?

How to handle external tasks, like meetings?

How to handle if a computer is broken down?

How to handle if someone cannot attend the daily meeting?

What happens when somebody helps out a person who is not in the Scrum?

What happens when a team draw two cards which double their XP?

What happens if two pairs reach the 500XP at the same time? Or if two pairs finish the game with the same amount of XP?

11.6.2 After Sprint 36 (2nd round)

2nd Focus group discussion – 23rd of March 2018

Topic: Impressions after the second round of the game. Suggestions for improvement.
The topic was presented, after that I stepped back and listened to the conversation happening. No moderation was needed through the discussion.

**Points of discussion:**

Main learning: The company had a live release in the middle of the Sprint which was not expected to happen like this before the sprint started. This was the first live release of this product, therefore creating ad-hock new tasks for the development part of team. This way the developers were not able to get statuses. This managed to interrupt the Sprint for 2 people. Peter stated that this level of falling apart in a Sprint is not allowed and is very rare.

Incoming ad-hock tasks should be put in JIRA somehow as well.

Thomas: he had a 5 day task which eventually became an 8 day task – luckily he had a „back to the future” card, but otherwise it would have been a big error in this sprint

The ad hock tasks should be logged somehow

The new status cards introduced are cool, maybe there would be a need for a status that is given to the person with the most ad hock tasks

Peti: There were cards which did not move us forward. It was a bit frustrating, that they couldn’t draw a doubling card this time.

The „surprise box” was a nice concept, but in reality it took too much time and too many times they managed to choose the empty box. → The drawing opportunity is needed, but in another way they agreed all
The help out 5XP → In too many cases it was hard to decide if it’s a help or not. There should be something introduced to handle this

There was a very specific situation: The avalanche card and the power puff card became active in the same round. This actually motivated the team to not finish the daily challenge and not to log a task as completed to avoid giving out points to the other teams → „It’s not a good situation when the game motivates you to not work” – at least in the game you want to be the first

There is too much depending on the darts skills. There should be also an alternative.

Just from work you cannot achieve 500XP, only 400XP / team → but the team agreed that there are many other ways to collect XP, so 500XP in this way is not hard → until know it was possible

The Tauntaun card is cool, it has some new excitement

11.6.3 After Sprint 37 (3rd round)

3rd Focus group discussion – 12th of April 2018

Topic: Impressions after the third round of the game. Suggestions for improvement.

Length: 15 min

Participants: 6 out 6 players

The topic was presented, after that I stepped back and listened to the conversation happening. No moderation was needed through the discussion.

Points of discussion:
Mike: I don’t like the fact that Thomas is always in the winning team. – Then Thomas was mocked by the others for always being in the winning team.

It often happens that someone is late from the daily meeting, which is always started ad-hock before or after launch. There were idea show to loose XP for being late, but the final outcome is that we will simply put the daily meeting to be directly after lunch. This way nobody is interrupted in work and there is no need for waiting or for punishment from the game.

Peter: Future idea. What if the game is changed into a classic role-playing game. There could be a game master, who is different for each sprint (This way we could integrate Alex into the game). So the story would be different always. Also if there is a team going to fast it could get harder challenges and if there is a team far behind it could get more lucky cards. – Comment on this: Alex should stay the game master, but there could be always a helper who comes up with the story background and helps in the challenge cards. – Final comment: It can be something to think about after the thesis part is done and is easier for Alex to create more drastical changes which doesn’t require the thesis project administration.

Muscle up cards are really cool, they can imagine more of it – only Christoph added that the „slavic squat card” is stupid, he doesn’t want to do it again.

There are situations when we need to vote for a daily challenge or for being late with a task. It would be easier if the game master decides. The game master should have more authority over the game, his involvement here is not looked at someone who can bias the game, but as someone who can just decide faster in questionable cases. For example the game master could give -10XP for cheating etc.
New status card idea: most points collected in one day card, which worth +10XP in general. It should not be a big number as it would give too much advantage for the team who already collected a lot of points.

The magic is a lot better than the surprise boxes. Much faster, more fun. It was okay to be in negative XP for being impatient with the challenges, so it should be kept that a team can try a challenge on the first day.

At challenge cards extra effort should be valued with extra points when it is applicable to the challenge (like when wearing matching clothes).

Idea: Wouldn’t it be great to start the game with drawing a card?

Observation: in every case there was a team lagging behind and two stronger team fighting in the front. There should be some compensation for example if a team is behind with a certain XP for a certain time then they should be able to draw extra cards to be able to catch up with the other teams.

11.6.4 After Sprint 38 (4th round)

4th Focus group discussion – 27th of April 2018

Topic: Impressions after the fourth (“final”) round of the game. Suggestions for improvement.

Length: 10 min

Participants: 6 out 6 players

The topic was presented, after that I stepped back and listened to the conversation happening. No moderation was needed through the discussion.

Points of discussion:
The new game board and new cards look fantastic, it’s really cool to just look at them.

The Cold resistance card related status, the horse farmer badge, should be valued also as 50XP because for 30XP there is no motivation in stealing it from each other, and this way it’s always ending up the fastest team collecting 3 cold resistance cards. – Basically, you have to decide between a challenge for 30XP or stealing a card for 30XP, doesn’t worth it.

When there are cards which affect each other, there should be some accommodation. For example, having two different cards which give double XP should not be taken as 4 times the XP, but as 3 times the XP or just one of the cards should be put on hold.

The instant challenges are liked better than the challenges which take 3 days to complete. Sometimes it’s possible to forget about them.

How about introducing riddles instead of LaterCoins for 1-1 occasion? The fastest to solve the riddle or within X time everybody gets the XP way.

The final reward is always forgotten. This is good because we are not motivated by the final reward, but by the game and by the competition. Maybe fix rewards should be introduced. Or the winner’s cup idea could be implemented.

Otherwise there is nothing more to add, the game seems really stable and a lot more robust than in the first round.
11.7 Closing interviews

11.7.1 Christoph interview - 27/04/2018 (15 mins)

1. **List the 3 best things that come to your mind about this gamification experiment!**

   He loved the paper plane folding challenge.

   He really likes that we did the new design, this way the game looks more professional and it gives a new feeling to it, comparing it to the first more like prototype version with the black and white style. It feels more like a game.

   In his opinion in general the game managed to brighten up the mood within the team. There a funny competition between the people that was not there before (for example running out of the meeting to room to look for LateralCoins, or to try to leave the meeting at the earliest point to make it end so nobody can think again about drawing cards). It was fun trying to find the boundaries of the game.

2. **List the 3 worst things that come to your mind about this gamification experiment!**

   For him it was some embarrassing situations caused by the game. The first is that there was an arm wrestling challenge with one of the student interns, and after winning the match it occurred that he is not strong in arm wrestling anymore because of an old arm injury. The second when he had to do the Slavic squat challenge and while doing it a repair guy just arrived to fix the air conditioning, so he had to do the Slavic squat while the repair guy was working there as well. But he couldn’t tell me a 3rd thing for the list.

3. **What expectations were met and which were not? (Show Table 2 –Expectations from the Gamification, which contains all the expectations gathered at the beginning)**

   The game was fun to play. It gave extra motivation (“like a 1000 times more”), he means that there are always tasks that are hard to do because there is no motivation, but this way because of the XP he finishes the tasks anyway. Yes,
it was an interesting new aspect in working together. He feels that the Sprints are planned only slightly better, but at least we don’t have super unsuccessful sprints as in some cases in the past. The administration was fantastic, nothing more to him, but he mentioned that for me it looks like that it is a lot more administration as a game master. The game didn’t do any harm to anything related to work or the workflow. Regarding that the game should not be boring or over played he said that so far It is still very exciting to play, there are only few challenges that are a bit boring for the 4th time, but it would be easy to use new challenges.

4. **What changes do you notice in the company since gamification was introduced?**

   We laugh more. We also mock each other more (for example with cheering for or against a person during a challenge).

   The Scrum is taken more seriously, the administration became a lot better, for example the logging of the progress and tasks is “500 times” better.

5. **What do you think, how did the game influence your individual performance?**

   To be honest at the beginning he thought that he should do and finish everything because he had the inner motivation to not lose any points (even working some extra hours to finish up a challenge), but then when he saw that other people also lose challenges he also became less stressful about it and got back to the normal working routine. He thinks that in general his performance and effectiveness increased a bit through this period.

6. **What is your opinion on gamification after this experiment? (Hint: About gamification itself in general, is it a buzzword with real meaning behind?)**

   It’s really fun, it should be mandatory everywhere. He thinks that one reason in favour of gamification is that people in general have a need to play and enjoy, so using about that need or desire can make the super serious tasks closer to the person. This is a lot friendlier situation. For example, gamification can give you motivation and this way your boss can see that you have progress. In a more corporate setting if the boss sees you not performing he will fire you at some point, but with the gamification setting it’s possible to know more about your employees.
7. Can you imagine playing this game after the experiment? (Yes/No)

Yes

11.7.2 Mike interview - 27/04/2018 (15 mins)

1. List the 3 best things that come to your mind about this gamification experiment!

   Planning became better at the company, of course it’s hard to plan for our company, but this game made it better. The planning is better on the daily level than in case of the Sprint level.

   He added as an extra: The game helped a lot to Thomas, Peti and Sydney in using JIRA. Also, the research of the company can finally use JIRA and it’s very surprising but they can actually have better estimations than the development part of team.

   It brings together the team, we laugh together, we prank each other etc.

   It motivates me a bit, because when the daily meeting is getting closer I start to work harder in order to finish my daily challenge.

   The new design is fantastic. The stories behind some cards like the tauntaun card or the boss card also make the game more fun and should be kept.

2. List the 3 worst things that come to your mind about this gamification experiment!

   Thomas is always in the winning team (except at the last game)

   The situations when it was more profitable to slow down with a task in order to slow down another team in collecting XP-s is a bit weird. He could image a situation when somebody’s task has to build on somebody else’s tasks, and then if the person doesn’t finish the task on purpose then the other person cannot work. Of course this is absurd in this group of people, just it would be possible to do so.

   There are errors in the balance of the game, but he admits that it is hard to handle all the possible scenarios. This is why cannot image that this game
would work on a bigger group of team then they are. Also, in a multinational company, he would only use it on a smaller group level.

3. What expectations were met and which were not? (Show Table 2 – Expectations from the Gamification, which contains all the expectations gathered at the beginning)

A valuable experience collected from the game is that the daily meetings can be valuable. In the past they were more or less more about just talking then creating real goals. It’s interesting to see that we take the daily meeting more seriously. It’s good to see how the team and how the pairs within the team can work together, it’s good that there is something common that creates a bond.

The game is fun to play, the motivational card challenge is really cool.

The game added plus motivation, sometimes he stayed 30 mins more to finish a challenge at the end of the day, or he was finishing up a task instead of checking the daily menu for the restaurant. So it is more motivating that we are planning ahead.

He agrees that it is a new aspect of working together as for example he never had to work together with Peti before, and this way they could talk and these interactions bring the people closer in the team.

The Scrum is relatively planned better. For the research part it is, but for the development part it is the same. At least in the game the unexpected tasks are handled and this way game wise the Sprint planning is balanced.

There is no more administration than needed. The logging of the tasks is very beneficial.

It’s not a 100% true that the effective work hours were not affected negatively, sometimes he was searching for the coins too much or some challenges required more time effort. But all in all the productivity didn’t decrease. It was the opposite it was increasing a bit as for example he tried to close the tasks as fast as possible to gain more XP.
The game was not boring. The was not really overplayed, there was one situation when a team kept a person in the washroom so they look for coins in the other room.

4. What changes do you notice in the company since gamification was introduced?

   Everybody learnt how to use JIRA

   The communication between the pairs developed a lot. For example, he is asking Peter every day about the daily challenges or when he was with Christoph they helped more times to each other in their task as they worked on similar problems.

5. What do you think, how did the game influence your individual performance?

   On a micro level it influenced him a bit, on day level he sees that he tries to fulfil the daily challenges better, but on an overall Sprint level he doesn’t feel a change.

6. What is your opinion on gamification after this experiment? (Hint: About gamification itself in general, is it a buzzword with real meaning behind?)

   The experiment went better than expected. He liked the basic idea and there were many details which made the day better. The atmosphere in the company was happier. We should not stop to play the game, there could be even versions when Alex is playing and there is a different game master.

7. Can you imagine playing this game after the experiment? (Yes/No)

   Yes.

### 11.7.3 Peter interview - 27/04/2018 (15 mins)

1. List the 3 best things that come to your mind about this gamification experiment!

   He feels that the game managed to achieve its goal, and that the daily challenge was the main pillar is really cool.

   It is also good that JIRA also received a bigger focus than before. He thinks that the game managed to follow the Scrum ideology and is matching the
usage of JIRA. The Scrum should give the right direction to the person for the Sprint and should make it possible for the person to choose the right tasks to do in order to achieve the Sprint goal.

The playfulness of the game. And the fact that they had to play the game in pairs.

2. **List the 3 worst things that come to your mind about this gamification experiment!**

   The game master could have more power for interruption and instant changes, because the rules will never be able to handle every single possible situation

   A small drawback that the daily meetings became longer than it is advised by the Scrum methodology. The advised is a 10 minutes long standing meeting and in our case we are sitting and in some cases it becomes longer than 10 minutes.

   Only these two negative things, nothing more

3. **What expectations were met and which were not? (Show Table 2 – Expectations from the Gamification, which contains all the expectations gathered at the beginning)**

   It was above his expectations, he didn’t think at the beginning that there is such a potential in gamification.

   The valuable experience from the game is: “The daily meeting and the JIRA based Sprint planning spiced with little playfulness is capable to create a more motivating environment in the company”. For example there is an importance to fulfil the daily challenge and he observed that he is focusing better on the specified challenges and is not starting to solve different problems.

   The game is fun, it gives plus motivation and is really a new aspect of working together.

   The planning for the Scrum is not that better JIRA wise, but it is because of the nature of the company and the IT industry. In overall the planning
is better, because through the daily challenges the short term planning evolved

It was not a lot to administer – for him, but for Alex it was more to do to about it.

It didn’t affect the working hours negatively and didn’t decrease the productivity.

The wasn’t boring nor overplayed, to switch the game master from time to time could give a new spice to the game.

4. **What changes do you notice in the company since gamification was introduced?**

   Generally, the company is better than before playing the game, there are many factors but he highlighted the fact the it the game had a great positive effect on the community within the organization.

   The personal responsibility and the competitiveness of the game managed to increase the personal creativity and mutual respect within the organization.

5. **What do you think, how did the game influence your individual performance?**

   The daily challenges had a big impact on his performance as he the short term challenges with a very specified deliverable goal made him used to fulfil these challenges. For the JIRA planning it was harder to pay attention.

6. **What is your opinion on gamification after this experiment? (Hint: About gamification itself in general, is it a buzzword with real meaning behind?)**

   He is very positive about gamification, it absolutely above expectations. Luckily in our company the community of the people is very opened and everybody likes to play games. He could image company where a game like this would just create more conflict.

   He told this experiment resembled to one competition he used to attend in high school. It was a physics competition where the teams had to solve
very creative and unusual tasks, like to measure the distance between the object with alternative methods than the easiest way.

Gamification is something really good for the team spirit.

He positions gamification on the Project management level. He thinks it would not work on a bigger scale or in a higher level of management. Or the game has to be altered in many ways, but who knows maybe it is possible to introduce a similar game. He added that the key figure would be the game master for implementing a game on a higher level.

7. **Can you imagine playing this game after the experiment? (Yes/No)**

Yes. He also feels motivation to be a game master once.

**11.7.4 Peti interview - 27/04/2018 (15 mins)**

1. **List the 3 best things that come to your mind about this gamification experiment!**

   It gives a structure to the work life. We had the daily meetings before as well, but this way with the game there is a better structure which gives us a better opportunity for planning.

   It’s good that it creates some competition

   He feels a bit more motivation for doing the assigned tasks

2. **List the 3 worst things that come to your mind about this gamification experiment!**

   It doesn’t matter how do the game sets up the rules, there is always a possibility to trick it – it’s not a negative point for the game, it comes more from us and the competition – but luckily we managed to behave and didn’t really trick the rules

   He couldn’t keep on track with his planned Sprint, he said that maybe the game cannot follow it well if his tasks are changing. He added that on the other side of course if he could plan ahead a bit better it would not lead to big changes.

   The dependency on luck – It’s positive and negative at the same time. Drawing bad cards doesn’t feel good, but he understands that without
negative cards possibly the positive cards won’t be giving the same good feeling.

3. **What expectations were met and which were not?** (Show Table 2 – Expectations from the Gamification, which contains all the expectations gathered at the beginning)

He didn’t expect anything but looking back he says that he imagined something similar to it.

The fun and funny aspect was fulfilled, he thinks the game managed to keep it at the right level. More fun would have been distracting as this is a workplace in the first place, so he was satisfied with the balance between fun and work.

He feels that it’s a new aspect regarding the team spirit, he feels that the team spirit became better.

The Scrum is planned better comparing to the fact he says that before the game the Scrum planning was really bad. It was planned better because the game gave an extra motivation to think through the tasks.

My valuable experience is that this game had a real effect on my work ethic

The administration with the game wasn’t a lot at all as Alex was administering everything. Also, Alex’s administration didn’t look at something too much to put on a person.

He had doubts that it won’t affect the effective work hours negatively, but at the end there were no pranks in between the teams in order to slow down each other. Still in same cases it happened that the order of the tasks was changed so a certain challenge is not fulfilled, which actually affected a team to receive less points at end. But on the other hand the point system that help is rewarded worked pretty well, regardless who was your pair you still helped and asked for help.

The game didn’t decrease his productivity, but he could not tell if it increased. But at the beginning he failed more daily challenges and he feels
that now he manages to estimate his daily challenges and tasks better and has more success with the daily challenges.

The game wasn’t boring, there was always happening something. The levels on the mountain were balanced. For overplaying sometimes it happened that at the end of the meeting too many cards had to be drawn, but still the pace of the game is fast, so these occasions when a lot of cards were played at the same time were not distracting or boring at all.

4. What changes do you notice in the company since gamification was introduced?

The colleagues are walking around randomly the office looking for LateralCoins. He is the newest person in the team, so he said that for him there is not much of a difference as he was in the state of getting used to the company when we introduced the game. He likes to focus on his work and laptop screen so he was not paying attention to the changes in the social life in the office.

He thinks that the game can increase the productivity, but it is only because the game can create a good atmosphere which can increase the work ethic

5. What do you think, how did the game influence your individual performance?

Maybe it increased his performance. There are so many variables in this story. For example different kind of tasks for the different Sprints, so it is hard to tell that how effective he could be for the same task before or after the game. But the collection of the XP was something that definitely could put some pressure on him to finish up 1-1 task on time.

6. What is your opinion on gamification after this experiment? (Hint: About gamification itself in general, is it a buzzword with real meaning behind?)

Probably it increases the productivity, but just through the fact that it firstly increases the work ethic. The success of gamification doesn’t only depend on the game, but also on the people who play the game. Most probably there is a team in the world from which this would be destroying performance wise, also he can image companies where the game should
be played individually and not in pairs. In case of this company to play in pairs was perfect.

7. **Can you imagine playing this game after the experiment? (Yes/No)**

    Yes, the game should be continued. He would be happy to play it more, but the game constantly needs small updated so it gets better and better.

**11.7.5 Sydney interview - 27/04/2018 (15 mins)**

1. **List the 3 best things that come to your mind about this gamification experiment!**

    The most useful feature of the game is that it helps in the daily work planning and monitoring through the concept of the daily challenge.

    The challenges can be recreational or chilling, which feels really good between two work related tasks, these mandatory breaks with the challenges are very beneficial for his work efficiency. He feels that subconsciously the brain can work better on the problems (and he mentions that according to research is should be like this as well).

    The challenges can be fun

2. **List the 3 worst things that come to your mind about this gamification experiment!**

    There some challenges though which can be damaging to the work performance. In case when the cards create a situation when it is not beneficial for the player to do his own challenge as the other will profit from his XP, this could be a bit controlled more by the game master.

    Sometimes the goal of the game doesn’t match the goal of the work. When you are achieving a better result in the game if you don’t fulfil a work related task (but this can happen just in case of a special combination of cards.)

    Wearing the Fez challenge was a bit irritating for him because he doesn’t like to wear hats indoors.
3. What expectations were met and which were not? (Show Table 2 – Expectations from the Gamification, which contains all the expectations gathered at the beginning)

He expected a lot less from the gamification experiment, but this game managed to maximally exceed the expectation. He admits that this method could have a positive effect for real.

The valuable experience he got is that his colleagues like the competitive experience and that this fact truly supports the theory of Homo Ludens (which basically says that the people like the playfulness). The game was entertaining indeed, it brought a new aspect to the work life.

The Scrum planning became more and more better planned through the time of the game in his point of view.

There was no administration at all…. “I added that what about the logging of the tasks?” …. “Oh yes, but logging should be something mandatory anyway, it’s different that we never really did it before the game. “

The game doesn’t affect negatively the effective work, the few rare cases when the cards created the weird situation when working was bad didn’t cause any harm in work (e.g. the boss card in the last Sprint, it would have been a better strategy to not work for 2 days, and then do all the tasks to maximize the XP). Overall the productivity did not decrease.

He thinks that the game won’t become boring as long as there is a maintenance which takes care of the future changes and new cards.

4. What changes do you notice in the company since gamification was introduced?

There clearly a greater willing to do the administration.

More precise short term planning with the daily challenge

Overall better communication within the team - meaning that because of the game everybody had to talk to everybody – so it was good in general to talk with the others

5. What do you think, how did the game influence your individual performance?
The game had effect in his performance: the administration reached the maximum level in comparison to the previous habits, the game made him planning better his daily tasks in order to achieve the certain goal, the Sprint planning made him to think more about the given tasks and by dividing the task into smaller tasks which can be estimated easier, this smaller tasks helped him to finish earlier or better with a task as the tasks was thought through more thoroughly which is very useful for him.

6. **What is your opinion on gamification after this experiment? (Hint: About gamification itself in general, is it a buzzword with real meaning behind?)**

In general it’s a positive disappointment, he would support me in continuing the tradition of this game at the company.

Gamification is an interesting concept, he mentioned that he has a friend working at Company X, which a multinational corporation. There are too many people working on the same task, so nobody really takes the responsibility and sometimes they are not managed well and the tasks are not clear at all. He thinks that gamification could help a bigger corporation to solve issues like this. He thinks that gamification could be a valid scientific approach, and it would very interesting to look behind the psychology of it, and to try to define equations and functions to describe different behaviour.

7. **Can you imagine playing this game after the experiment? (Yes/No)**

Yes

**11.7.6 Thomas interview - 27/04/2018 (15 mins)**

1. **List the 3 best things that come to your mind about this gamification experiment!**

   He really can’t wait for the daily meeting to draw a card or to a challenge.
   He is keen on monitoring what is happening in the game.
   He feels motivated, especially in tasks which he doesn’t find exciting or interesting. He works on these tasks with better mood than without receiving XP for it.
The game helped to organize his tasks better. If he feels lost he just enters the JIRA platform and check what to do next, or what are the deliverables. Moreover, to check how many tasks are left or that how much does a task worth. He likes the fact the we keep track of the task.

2. **List the 3 worst things that come to your mind about this gamification experiment!**

He doesn’t like that there are situations when it can happen that a certain card combination can start to motivate the team not to finish or to postpone a task in order to get a better position in the game. It doesn’t happen often and doesn’t really affects the work, just it should be handled a bit better game wise.

He doesn’t like the cards which give equally more points to all teams (like the tent camp card), because it’s not changing the difference between the teams.

He couldn’t mention anything else, and he also jokes that probably it will be good for my thesis work.

3. **What expectations were met and which were not? (Show Table 2 – Expectations from the Gamification, which contains all the expectations gathered at the beginning)**

He wouldn’t expect anything more or different from this experiment. The funny aspect was there definitely. For the is it a new exciting aspect to work together expectation he said that it is not really a new aspect of working together as the game gave a new level of insight in each other’s tasks and progress, but it didn’t make a difference in a sense that they were not working together on one tasks differently. So yes, they were interested more in each other’s status, but not working together differently.

The Scrum is panned better, for him definitely. The game is not bringing any extra administration that is not required as a basic level. The game is more administration for Alex, it’s question that how much extra administration has to be done by me (Alex).
The game if not affecting the effective workhours negatively as if we wouldn’t play this game we would be just playing darts or chilling more in the kitchen. The productivity is also not decreased because of the game.

The game wasn’t boring or overplayed so far.

4. **What changes do you notice in the company since gamification was introduced?**

   This is the only real common point in the company. Everybody is a part of it, so it’s a really easy topic to talk about, which happens often at lunch and is a good thing for the company’s social life. It feels good to brainstorm about new developments regarding the game.

5. **What do you think, how did the game influence your individual performance?**

   He thinks that in his case it changed positively, and if he should estimate it he would say that the increase is around 10-15% on his case. The motivation that he gets from the game helps him to get through few tasks.

6. **What is your opinion on gamification after this experiment? (Hint: About gamification itself in general, is it a buzzword with real meaning behind?)**

   He believes it’s a good tool for this. It can be done in a lot of ways and he likes that it is an iterative process so there is a potential to adjust it to any kind of group of people.

7. **Can you imagine playing this game after the experiment? (Yes/No)**

   Yes.

### 11.8 Final Interview with the CEO – 30/04/2018

10 minutes open discussion reflecting on the results from the quantitative data (Appendix 11.9)

**Points of discussion:**

Before Sprint 29 the data is outdated

The usage of JIRA wasn’t enforced too much in the past, it was used mostly for just keeping track of the tasks, bugs, and features to develop.
JIRA was used by the developers, and the researchers received tasks in it when it was connected to the app development.

Sprint 33 and 34 doesn’t feel right with the 71% success, it could be that we deleted few tasks along the way or that the Sprints were not closed in time. The time was not always kept, when too many tasks were not closed the Sprints were just prolonged with a week or so. This could lead the misinterpretation of the data collected, so the suggestion is to try to recalculate the success rate normalized to the same time length and then it is better the compare if there is an obvious difference or not. A regular Sprint should contain between 10-15 work days.

The numbers are not really showing any difference, but there is a clearly visible change. The daily challenges created a very strong base in the way of the Scrum at work. The short term estimations are really helping to keep the people on track and focused on their task. The Sprint level planning is still not perfect, but it feels that it’s getting better little by little.

Sprint 36 was terrible JIRA wise for example. During this Sprint there was a major release of a new product, which created many ad-hock tasks based on the customer feedback, which had to be tackled as fast as possible. Then Sprint 38 was also a bit underestimated, because it was not clear how to proceed with few tasks, and also it occurred that there is a major bug in the App which could be only fixed by Christoph, so one goal of the Sprint was to not disturb his attention. But Christoph is needed for few other tasks as the most senior developer in the team, which meant that there were situations when other people had to slow down or wait for Christoph with few tasks. This kind of bottlenecks should be avoided in the future.

Altogether despite the fact that the numbers are not indicating a big change regarding the performance of the team he would say that there is an improvement on the performance and that probably on the long term it will be more visible in the data from JIRA as well.

11.9 Data from JIRA
11.9.1 Team performance

Sprint 1-28: too outdated for this experiment due to major changes in the employees

Sprint: 29-34: The investigated team started to work together. These are the relevant Sprints to take into account as the Sprints before the gamification.

Sprint: 35-38: The Sprints where gamification was introduced.

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<th>Back to the backlog</th>
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<td>3</td>
<td>50%</td>
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<tr>
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</tr>
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</tr>
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</tr>
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<td>32</td>
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11.9.2 Individual performance

Sprint: 29-34: The investigated team started to work together. These are the relevant Sprints to take into account as the Sprints before the gamification.

Sprint: 35-38: The Sprints where gamification was introduced.

<table>
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<td>12</td>
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<td>92%</td>
</tr>
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<td>75%</td>
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<td>3</td>
<td>40%</td>
<td></td>
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<td>17%</td>
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<td></td>
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<td>3</td>
<td>40%</td>
<td></td>
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<td>4</td>
<td>0%</td>
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</tr>
<tr>
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<td>2</td>
<td>4</td>
<td>33%</td>
<td></td>
</tr>
<tr>
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<td>3</td>
<td>5</td>
<td>38%</td>
<td></td>
</tr>
<tr>
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<td>1</td>
<td>50%</td>
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<td>---</td>
<td>---</td>
<td>-----</td>
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<td>100%</td>
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### Peter performance

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<td>100%</td>
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<td>100%</td>
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<td>0%</td>
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### Peti performance

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### Sydney performance

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11.9.3 Estimation performance

Sprint: 35-38: The Sprints where gamification was introduced.

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<td>33%</td>
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<tr>
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<td>0</td>
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<tr>
<td>Sydney performance</td>
<td>Closed issues</td>
<td>Estimated right</td>
<td>Under estimated</td>
<td>Over estimated</td>
<td>Estimation success rate [%]</td>
</tr>
<tr>
<td>--------------------</td>
<td>---------------</td>
<td>------------------</td>
<td>-----------------</td>
<td>---------------</td>
<td>--------------------------</td>
</tr>
<tr>
<td>Sprint 38</td>
<td>1</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>100%</td>
</tr>
<tr>
<td>Sprint 37</td>
<td>2</td>
<td>1</td>
<td>0</td>
<td>1</td>
<td>50%</td>
</tr>
<tr>
<td>Sprint 36</td>
<td>4</td>
<td>4</td>
<td>0</td>
<td>0</td>
<td>100%</td>
</tr>
<tr>
<td>Sprint 35</td>
<td>3</td>
<td>3</td>
<td>0</td>
<td>0</td>
<td>100%</td>
</tr>
</tbody>
</table>

11.10 Game rules

First Sprint rules presentation

Second Sprint rules presentation

Third Sprint rules presentation

Fourth Sprint rules presentation

**In case the links are broken or expired the same presentations can be found under Appendix 11.12 as other attachments**

11.11 Card decks (with explanation)

11.11.1 First Sprint

11.11.1.1 Zone cards

Challenge card (6)

First the team has to agree on how much XP they want to risk for the challenge. This can be a number between 10-50. After that they can draw a challenge card from the challenge card deck. If they manage to complete the challenge they will receive the risked amount of XP, but in case they fail the challenge they lose the amount of XP.
| **Pickaxe (3)** | The people in the team will receive the double amount of the XP they collect until they leave the zone they are in. For example, the team has 55 XP, so this means that this card will be active until they reach Zone 100. This card is valid for all kind of XP that can be collected. |
| **Tent camp (2)** | This card is valid for everyone who is in the same zone as the team that draw the card. This means that if everybody manages to fulfil their daily challenge (which has a value of 10XP), then everybody receives double XP for their daily challenge (which means 20XP/person). |
| **Yeti (1)** | The team has to draw a challenge card for a fixed amount of 50XP to risk. |
**Sugar daddy (1)**

The team who draws this card can choose a team, and that team will receive X% of their collected XP in extra for the next 3 work days. The original team is not losing XP, just the chosen team receives more. The X% is decided based on the darts throws. The chosen team can throw maximum 3 times (doesn’t matter who in the team, and it can be mixed as well). The throwing works on a take or leave base, so the latest value will be the one added. This means that they can stop and accept the first throw or the second throw as well, but if they don’t stop then they lose the previous value.

**Avalanche (1)**

It means that if anyone doesn’t manage to fulfil his/her daily challenge then nobody will receive XP after the daily challenge parts.

**With great power… (3)**

One person in the team will receive double XP for the upcoming 2 workdays. (This is not valid for the challenges).
**Duel of fates (2)**

One person from the team can challenge anybody for a darts duel. In case of winning the XP between the two teams will be swapped, and in case of losing 50XP from the team will be given to the challenged team.

If the card is drawn by the leading team, then it will be only a darts duel with a fixed 50XP bet.

**Get lucky (1)**

This card can be used up when the team draws a challenge they don’t intend to complete. The challenge card can be pushed to another team they choose with risking the same amount as the original team. The card can be used up at a later point as well.

**Back to the future (3)**

This card is useful when there is a task in JIRA which was underestimated. With this card is it possible the re-estimate the time needed for one JIRA task. The card can be used up at a later point as well.
New rule (1)

The team can come with a small rule (for example: swearing is not allowed for a day). The team who breaks the rule before the next daily meeting will lose 20XP.

11.11.1.2 Challenge cards

<table>
<thead>
<tr>
<th>Let’s do it!</th>
<th>Workday = time between two daily meetings</th>
</tr>
</thead>
<tbody>
<tr>
<td>One of you has to send a funny picture/meme to the company e-mail group for the upcoming 5 workdays.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Let’s do it!</th>
<th>Workday = time between two daily meetings</th>
</tr>
</thead>
<tbody>
<tr>
<td>One of you has to send a funny video to the company e-mail group for the upcoming 3 workdays.</td>
<td></td>
</tr>
<tr>
<td>Let's do it!</td>
<td>Workday = time between two daily meetings</td>
</tr>
<tr>
<td>--------------</td>
<td>------------------------------------------</td>
</tr>
<tr>
<td><strong>Let's do it!</strong>&lt;br&gt;The team before you (if you are the first, then the team after you) can change both of your desktop wallpapers (on all screens) for the upcoming 5 workdays.</td>
<td></td>
</tr>
<tr>
<td><strong>Let's do it!</strong>&lt;br&gt;Wear the Fez for 1 workday (You can divide it between each other).</td>
<td>Workday = time between two daily meetings&lt;br&gt;If one leaves early then the other person from the team has to carry on. The person arrives earlier on the morning should start to wear it already.</td>
</tr>
<tr>
<td><strong>Let's do it!</strong>&lt;br&gt;You need to make motivational cards for the team in the last position for the next 3 workdays. If you are the last one, then you need to make motivational cards for each other within the team. (One card per day.)</td>
<td>Workday = time between two daily meetings</td>
</tr>
<tr>
<td><strong>Let's do it!</strong>&lt;br&gt;You need to do one favor for the team with the highest score (1-1 for 1-1). If you are that team, then for the last team. Favor list:&lt;br&gt;- Making tea/coffee&lt;br&gt;- Grab the food for them</td>
<td>Before the next daily challenge.</td>
</tr>
</tbody>
</table>
### 11.11.2 Second Sprint

#### 11.11.2.1 Zone cards

<table>
<thead>
<tr>
<th>Challenge card (9)</th>
<th><strong>Challenge card (9)</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>First the team has to agree on how much XP they want to risk for the challenge. This can be a number between 10-30. After that they can draw a challenge card from the challenge card deck. If they manage to complete the challenge they will receive the risked amount of XP, but in case they fail the challenge they lose the amount of XP.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Pickaxe (3)</th>
<th><strong>Pickaxe (3)</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>The people in the team will receive the double amount of the XP they collect until they leave the zone they are in. For example, the team has 55 XP, so this means that this card will be active until they reach Zone 100. This card is valid only for the XP collected from daily challenges.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Tent camp (2)</th>
<th><strong>Tent camp (2)</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>This card is valid for everyone who is in the same zone as the team that draw the card. This means that if everybody manages to fulfil their daily challenge (which has a value of 10XP), then everybody receives double XP for their daily challenge (which means 20XP/person).</td>
<td></td>
</tr>
<tr>
<td>Yeti (1)</td>
<td>Sugar daddy (1)</td>
</tr>
<tr>
<td>---------</td>
<td>-----------------</td>
</tr>
<tr>
<td>The team has to draw a challenge card for a fixed amount of 50XP to risk.</td>
<td>The team who draws this card can choose a team, and that team will receive X% of their collected XP in extra for the next 3 work days. The original team is not losing XP, just the chosen team receives more. The X% is decided based on the darts throws. The chosen team can throw maximum 3 times (doesn’t matter who in the team, and it can be mixed as well). The throwing works on a take or leave base, so the latest value will be the one added. This means that they can stop and accept the first throw or the second throw as well, but if they don’t stop then they lose the previous value.</td>
</tr>
<tr>
<td><strong>Avalanche (1)</strong></td>
<td>It means that if anyone doesn’t manage to fulfil his/her daily challenge then nobody will receive XP after the daily challenge parts.</td>
</tr>
<tr>
<td><strong>With great power… (3)</strong></td>
<td>One person in the team will receive 1,5*XP for the upcoming 2 workdays. (This is not valid for the challenges).</td>
</tr>
<tr>
<td><strong>Duel of fates (2)</strong></td>
<td>One person from the team can challenge anybody for a darts duel. The bet can be specified between 10-30XP by the challenging team.</td>
</tr>
<tr>
<td>Card Name</td>
<td>Description</td>
</tr>
<tr>
<td>---------------------------</td>
<td>---------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td><strong>Get lucky (1)</strong></td>
<td>This card can be used up when the team draws a challenge they don’t intend to complete. The challenge card can be pushed to another team they choose with risking the same amount as the original team. The card can be used up at a later point as well.</td>
</tr>
<tr>
<td><strong>Back to the future (3)</strong></td>
<td>This card is useful when there is a task in JIRA which was underestimated. With this card it is possible the re-estimate the time needed for one JIRA task. The card can be used up at a later point as well.</td>
</tr>
<tr>
<td><strong>New rule (3)</strong></td>
<td>The team can come with a small rule (for example: swearing is not allowed for a day). The team who breaks the rule before the next daily meeting will lose 20XP.</td>
</tr>
<tr>
<td><strong>Saviour (1)</strong></td>
<td></td>
</tr>
<tr>
<td>-----------------</td>
<td>------------------</td>
</tr>
<tr>
<td>A new zone card can be drawn in the future (or right now).</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Power puff (1)</strong></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>The average of the collected XP will be calculated for the period between the two daily meetings (=total XP/3). This number of XP will be added to each team.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Team up (2)</strong></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Choose a team and the daily challenge and help XP-s will be collected together. This means that if both teams complete their all daily challenges then 40 XP will be added to the both teams.</td>
<td></td>
</tr>
</tbody>
</table>
### One throw to rule them all (1)

Before the daily meeting ends the person has to throw once with the darts. If the darts board is not hit, no points will be added or subtracted.

If the darts board is hit, the number will be added to the throwing team, and half of the number will be subtracted from the other two teams.

### Loki (2)

Choose a team and they can draw the challenge card for the third team for a fixed 50XP to risk.

If the team completes the challenges then you will receive the 50% of the XP (25XP). If the team fails the challenge you will lose the 50% of the XP (25XP).

### Iconic duo (2)

If both of you in team manage to complete your daily challenges for the next daily meeting, then at the end of the next daily meeting both of you can throw once with the darts. The lower value will be added to the team’s XP.
Each team needs two of this card after zone 400. Without this card the team will stay at the border with 399XP until they manage to collect 2 of this card.

When a team already has 2 tauntauns in possession they can just exchange the card for drawing a new zone card (just at the same daily meeting, not in the future).

11.11.2.2 Challenge cards

<table>
<thead>
<tr>
<th>Let’s do it!</th>
<th>Workday = time between two daily meetings</th>
</tr>
</thead>
<tbody>
<tr>
<td>One of you has to send a funny picture/meme to the company e-mail group for the upcoming 5 workdays.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Let’s do it!</th>
<th>Workday = time between two daily meetings</th>
</tr>
</thead>
<tbody>
<tr>
<td>One of you has to send a funny video to the company e-mail group for the upcoming 3 workdays.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Let’s do it!</th>
<th>Workday = time between two daily meetings</th>
</tr>
</thead>
<tbody>
<tr>
<td>The team before you (if you are the first, then the team after you) can change both of your desktop wallpapers (on all screens) for the upcoming 5 workdays.</td>
<td></td>
</tr>
</tbody>
</table>
Workday = time between two daily meetings
If one leaves early then the other person from the team has to carry on. The person arrives earlier on the morning should start to wear it already.

Workday = time between two daily meetings

Before the next daily challenge.

Until both of the players leave the office.
<table>
<thead>
<tr>
<th>Let's do it!</th>
</tr>
</thead>
<tbody>
<tr>
<td>You are only allowed to speak in English to your colleagues who are in the SCRUM for one workday.</td>
</tr>
</tbody>
</table>

Workday = time between two daily meetings

<table>
<thead>
<tr>
<th>Let's do it!</th>
</tr>
</thead>
<tbody>
<tr>
<td>Both of you has to beat one of the testees in arm wrestling to get the XP.</td>
</tr>
</tbody>
</table>

The same testee has to be chosen. The challenge should be done right after the daily meeting.

<table>
<thead>
<tr>
<th>Let's do it!</th>
</tr>
</thead>
<tbody>
<tr>
<td>Choose one person who can throw once with the darts arrow. After that you have 3 tries to throw the same number.</td>
</tr>
</tbody>
</table>

Choose one person from any of the other teams. This person throws once with the darts arrow. The same number has to be hit after 3 tries. Both team members can try, but all together there are 3 tries. If the initial person doesn’t hit the darts board, he/she can try it again. The challenge should be done right after the daily meeting.

<table>
<thead>
<tr>
<th>Let's do it!</th>
</tr>
</thead>
<tbody>
<tr>
<td>Play gaze challenge (Farkasszem) with a person from the game. If you win you can get the XP, if you lose then the person’s team receives the value of the 50% of the risked XP.</td>
</tr>
</tbody>
</table>

Choose one person from any of the other teams. After you play the gaze challenge (the person who blinks first loses). If you win you get the risked XP, if you lose you lose the risked XP, but the opponent team received the 50% of the risked XP.
Before the next daily meeting each share a story that nobody in the company knows about them. If anyone recognizes the story it’s a fail.

### 11.11.2.3 Status cards

| **Combo breaker** | When a team manages to fulfil 3 daily challenges in a row they earn this status (both players in the team has to fulfil the daily challenges). This card can be stolen from the team if another team manages to fulfil more daily challenges in a row. The +50XP from the status card is activated at the last daily meeting of the game. |
| **JIRA Knight** | The team with the most XP collected from JIRA tasks can obtain this card. When a team gets more XP from JIRA tasks they steal the card. The +50XP from the status card is activated at the last daily meeting of the game. |
### 11.11.3 Third sprint

#### 11.11.3.1 Zone cards

<table>
<thead>
<tr>
<th>Tauntaun farmer</th>
</tr>
</thead>
<tbody>
<tr>
<td>The team with possessing the most tauntauns earns this card (at least 3 tauntauns are required). If a team gets more tauntauns then they can steal the card. The +30XP from the status card is activated at the last daily meeting of the game.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Pickaxe (5)</th>
</tr>
</thead>
<tbody>
<tr>
<td>The people in the team will receive the double amount of the XP they collect until they leave the zone they are in. For example, the team has 55 XP, so this means that this card will be active until they reach Zone 100. This card is valid only for the XP collected from daily challenges.</td>
</tr>
<tr>
<td>Tent camp (2)</td>
</tr>
<tr>
<td>---------------</td>
</tr>
<tr>
<td><strong>Tent camp</strong> (2)</td>
</tr>
<tr>
<td>This card is valid for everyone who is in the same zone as the team that draw the card. This means that if everybody manages to fulfil their daily challenge (which has a value of 10XP), then everybody receives double XP for their daily challenge (which means 20XP/person).</td>
</tr>
</tbody>
</table>
they don’t stop then they lose the previous value.

### Avalanche (1)

It means that if anyone doesn’t manage to fulfil his/her daily challenge then nobody will receive XP after the daily challenge parts.

### With great power… (3)

One person in the team will receive 1,5*XP for the upcoming 2 workdays. (This is not valid for the challenges).

### Duel of fates (2)

One person from the team can challenge anybody for a darts duel. The bet can be specified between 10-30XP by the challenging team.
<table>
<thead>
<tr>
<th>Card Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Get lucky (1)</strong></td>
<td>This card can be used up when the team draws a challenge they don’t intend to complete. The challenge card can be pushed to another team they choose with risking the same amount as the original team. The card can be used up at a later point as well.</td>
</tr>
<tr>
<td><strong>Back to the future (3)</strong></td>
<td>This card is useful when there is a task in JIRA which was underestimated. With this card is it possible the re-estimate the time needed for one JIRA task. The card can be used up at a later point as well.</td>
</tr>
<tr>
<td><strong>New rule (3)</strong></td>
<td>The team can come with a small rule (for example: swearing is not allowed for a day). The team who breaks the rule before the next daily meeting will lose 20XP.</td>
</tr>
<tr>
<td>Saviour (1)</td>
<td></td>
</tr>
<tr>
<td>-------------</td>
<td>---</td>
</tr>
<tr>
<td>A new zone card can be drawn in the future (or right now).</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Team up (2)</th>
<th></th>
</tr>
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<tbody>
<tr>
<td>Choose a team and the daily challenge and help XP-s will be collected together. This means that if both teams complete their all daily challenges then 40 XP will be added to the both teams.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>One throw to rule them all (1)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Before the daily meeting ends somebody from the team has to throw twice with the darts. If the darts board is not hit, no points will be added or subtracted.</td>
<td></td>
</tr>
<tr>
<td>If the darts board is hit, the lower number from the two hits will be added to the throwing team, and half of the number will be subtracted from the other two teams.</td>
<td></td>
</tr>
<tr>
<td><strong>Loki (2)</strong></td>
<td></td>
</tr>
<tr>
<td>---------------------</td>
<td></td>
</tr>
<tr>
<td>Choose a team and they have to draw a challenge card for a fixed 30XP to risk. If the team completes the challenges then you will receive the 50% of the XP (15XP). If the team fails the challenge you will lose the 50% of the XP (15XP).</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Iconic duo (2)</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>If both of you in team manage to complete your daily challenges for the next daily meeting, then at the end of the next daily meeting both of you can throw once with the darts. The lower value will be added to the team’s XP.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Tauntaun (9)</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Each team needs two of this card after zone 400. Without this card the team will stay at the border with 399XP until they manage to collect 2 of this card. When a team already has 2 tauntauns in possession they can just exchange the card for drawing a new zone card (just at the same daily meeting, not int he future).</td>
</tr>
</tbody>
</table>
The activity has to be carried out before the next daily meeting.

Muscle up (1)

Muscle up (1)

Muscle up (1)
<table>
<thead>
<tr>
<th>Muscle up (1)</th>
<th>Boss fight (1)</th>
</tr>
</thead>
<tbody>
<tr>
<td>The activity has to be carried out before the next daily meeting.</td>
<td>The boss freezes the game. The task of the teams is to defeat the boss in order to continue the climbing.</td>
</tr>
</tbody>
</table>

11.11.3.2 Challenge cards

<table>
<thead>
<tr>
<th>Let's do it!</th>
</tr>
</thead>
<tbody>
<tr>
<td>One of you has to send a funny picture/meme to the company e-mail group for the upcoming 5 workdays.</td>
</tr>
</tbody>
</table>

Workday = time between two daily meetings
<table>
<thead>
<tr>
<th>Let’s do it!</th>
<th>Workday = time between two daily meetings</th>
</tr>
</thead>
<tbody>
<tr>
<td>One of you has to send a funny video to the company e-mail group for the upcoming 3 workdays.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Let’s do it!</th>
<th>Workday = time between two daily meetings</th>
</tr>
</thead>
<tbody>
<tr>
<td>The team before you (if you are the first, then the team after you) can change both of your desktop wallpapers (on all screens) for the upcoming 5 workdays.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Let’s do it!</th>
<th>Workday = time between two daily meetings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wear the Fez for 1 workday (You can divide it between each other).</td>
<td>If one leaves early then the other person from the team has to carry on. The person arrives earlier on the morning should start to wear it already.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Let’s do it!</th>
<th>Workday = time between two daily meetings</th>
</tr>
</thead>
<tbody>
<tr>
<td>You need to make motivational cards for the team in the last position for the next 3 workdays. If you are the last one, then you need to make motivational cards for each other within the team. (One card per day.)</td>
<td></td>
</tr>
</tbody>
</table>
Before the next daily challenge.

**Let's do it!**

You need to do one favor for the team with the highest score (1-1 for 1-1). If you are that team, then for the last team. Favor list:
- Making tea/coffee
- Grab the food for them

**Let's do it!**

Workday = time between two daily meetings

**Let's do it!**

The same testee has to be chosen. The challenge should be done right after the daily meeting.

**Let's do it!**

Choose one person from any of the other teams. This person throws once with the darts arrow. The same number has to be hit after 3 tries. Both team members can try, but all together there are 3 tries. If the initial person doesn’t hit the darts board, he/she can try it again. The challenge should be done right after the daily meeting.
<table>
<thead>
<tr>
<th><strong>Let’s do it!</strong></th>
<th>Choose one person from any of the other teams. After you play the gaze challenge (the person who blinks first loses). If you win you get the risked XP, if you lose you lose the risked XP, but the opponent team received the 50% of the risked XP.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Let’s do it!</strong></td>
<td>Before the next daily meeting each share a story that nobody in the company knows about them. If anyone recognizes the story it’s a fail.</td>
</tr>
<tr>
<td><strong>Let’s do it!</strong></td>
<td>The category can be changed if the card comes up again.</td>
</tr>
<tr>
<td><strong>Let’s do it!</strong></td>
<td>The plane has to land within the pre-defined area.</td>
</tr>
<tr>
<td>Workday = time between two daily meetings</td>
<td></td>
</tr>
<tr>
<td>------------------------------------------</td>
<td></td>
</tr>
<tr>
<td>If one leaves early then the other person from the team has to carry on. The person arrives earlier on the morning should start to wear it already.</td>
<td></td>
</tr>
</tbody>
</table>

| Torso, leg, shoes, accessories have to match. The other players decide at the daily meeting if the requirement is met or not. |

<table>
<thead>
<tr>
<th>11.11.3.3 Status cards</th>
</tr>
</thead>
</table>

**Combo breaker**

When a team manages to fulfil 3 daily challenges in a row they earn this status (both players in the team has to fulfil the daily challenges). This card can be stolen from the team if another team manages to fulfil more daily challenges in a row. The +50XP from the status card is activated at the last daily meeting of the game.
### JIRA Knight

The team with the most XP collected from JIRA tasks can obtain this card. When a team gets more XP from JIRA tasks they steal the card. The +50XP from the status card is activated at the last daily meeting of the game.

### Tauntaun farmer

The team with possessing the most tauntauns earns this card (at least 3 tauntauns are required). If a team gets more tauntauns then they can steal the card. The +30XP from the status card is activated at the last daily meeting of the game.

### Spanish inquisition

The team with the most XP collected from ad-hoc tasks can obtain this card. When a team gets more XP from ad-hoc tasks they steal the card. The +50XP from the status card is activated at the last daily meeting of the game.
## 11.11.4 Fourth sprint

### 11.11.4.1 Zone cards

<table>
<thead>
<tr>
<th>Challenge card (5)</th>
</tr>
</thead>
<tbody>
<tr>
<td>First the team has to agree on how much XP they want to risk for the challenge. This can be a number between 10-50. After that they can draw a challenge card from the challenge card deck. If they manage to complete the challenge they will receive the risked amount of XP, but in case they fail the challenge they lose the amount of XP.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Double XP (5)</th>
</tr>
</thead>
<tbody>
<tr>
<td>The people in the team will receive the double amount of the XP they collect until they leave the zone they are in. For example, the team has 55 XP, so this means that this card will be active until they reach Zone 100. This card is valid only for the XP collected from daily challenges.</td>
</tr>
</tbody>
</table>
**Tent camp (2)**

This card is valid for everyone who is in the same zone as the team that draw the card. This means that if everybody manages to fulfil their daily challenge (which has a value of 10XP), then everybody receives double XP for their daily challenge (which means 20XP/person).

**Yeti (1)**

The team has to draw a challenge card for a fixed amount of 50XP to risk.
Sugar daddy (1)
The team who draws this card can choose a team, and that team will receive X% of their collected XP in extra for the next 3 work days. The original team is not losing XP, just the chosen team receives more. The X% is decided based on the darts throws. The chosen team can throw maximum 3 times (doesn’t matter who in the team, and it can be mixed as well). The throwing works on a take or leave base, so the latest value will be the one added. This means that they can stop and accept the first throw or the second throw as well, but if they don’t stop then they lose the previous value.

Avalanche (1)
It means that if anyone doesn’t manage to fulfil his/her daily challenge then nobody will receive XP after the daily challenge parts.
<table>
<thead>
<tr>
<th><strong>With great power… (3)</strong></th>
<th><strong>Duel of fate (2)</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>One person in the team will receive 1.5*XP for the upcoming 2 workdays. (This is not valid for the challenges).</td>
<td>One person from the team can challenge anybody for a darts duel. The bet can be specified between 10-30XP by the challenging team.</td>
</tr>
</tbody>
</table>
**Master thief (2)**

This card can be used up when another team draws a challenge, which could be awesome for your team. This card allows you to steal the challenge for the same amount of risked XP.

**Back to the future (3)**

This card is useful when there is a task in JIRA which was underestimated. With this card is it possible the re-estimate the time needed for one JIRA task. The card can be used up at a later point as well.
<p>| <strong>New rule (3)</strong> | The team can come with a small rule (for example: swearing is not allowed for a day). The team who breaks the rule before the next daily meeting will lose 20XP. |
| <strong>Team up (2)</strong> | Choose a team and the daily challenge and help XP-s will be collected together. This means that if both teams complete their all daily challenges then 40 XP will be added to the both teams. |
| <strong>Rule them all (1)</strong> | Before the daily meeting ends somebody from the team has to throw twice with the darts. If the darts board is not hit, no points will be added or subtracted. If the darts board is hit, the lower number from the two hits will be added to the throwing team, and half of the number will be subtracted from the other two teams. |</p>
<table>
<thead>
<tr>
<th>Beat Them! (2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Choose a team and they have to draw a challenge card for a fixed 30XP to risk.</td>
</tr>
<tr>
<td>If the team completes the challenges then you will receive the 50% of the XP (15XP). If the team fails the challenge you will lose the 50% of the XP (15XP).</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Iconic duo (2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>If both of you in team manage to complete your daily challenges for the next daily meeting, then at the end of the next daily meeting both of you can throw once with the darts. The lower value will be added to the team’s XP.</td>
</tr>
<tr>
<td><strong>Cold Resistance (9)</strong></td>
</tr>
<tr>
<td>------------------------</td>
</tr>
<tr>
<td>Each team needs two of this card after zone 400. Without this card the team will stay at the border with 399XP until they manage to collect 2 of this card.</td>
</tr>
<tr>
<td>When a team already has 2 Cold Resistance cards in possession they can just exchange the card for drawing a new zone card (just at the same daily meeting, not in the future).</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Get over 9000 (1)</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>The activity has to be carried out before the next daily meeting.</td>
</tr>
</tbody>
</table>
Get over 9000 (1)

The activity has to be carried out before the next daily meeting.

Get over 9000 (1)

The activity has to be carried out before the next daily meeting.
<table>
<thead>
<tr>
<th><strong>Get over 9000 (1)</strong></th>
<th>The activity has to be carried out before the next daily meeting.</th>
</tr>
</thead>
</table>

| **The Boss (1)** | The boss freezes the game. The task of the teams is to defeat the boss in order to continue the climbing. |
11.11.4.2 Challenge cards

<table>
<thead>
<tr>
<th>Challenge Card</th>
</tr>
</thead>
<tbody>
<tr>
<td>Workday = time between two daily meetings</td>
</tr>
<tr>
<td>If the card is played „too late” then it’s only valid until the end of the sprint</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
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</tr>
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</tr>
</tbody>
</table>
Workday = time between two daily meetings
If the card is played „too late“ then it’s only valid until the end of the sprint.

Workday = time between two daily meetings
If one leaves early then the other person from the team has to carry on. The person arrives earlier on the morning should start to wear it already.
Workday = time between two daily meetings

If the card is played „too late” then it’s only valid until the end of the sprint

Before the next daily challenge.

Workday = time between two daily meetings
The same testee has to be chosen. The challenge should be done right after the daily meeting.

Choose one person from any of the other teams. This person throws once with the darts arrow. The same number has to be hit after 3 tries. Both team members can try, but all together there are 3 tries. If the initial person doesn’t hit the darts board, he/she can try it again. The challenge should be done right after the daily meeting.

Choose one person from any of the other teams. After you play the gaze challenge (the person who blinks first loses). If you win you get the risked XP, if you lose you lose the risked XP, but the opponent team received the 50% of the risked XP.
Before the next daily meeting each share a story that nobody in the company knows about them. If anyone recognizes the story it’s a fail.

The category can be changed if the card comes up again.

The plane has to land within the pre-defined area.
Workday = time between two daily meetings
If one leaves early then the other person from the team has to carry on. The person arrives earlier on the morning should start to wear it already.

Torso, leg, shoes, accessories have to match. The other players decide at the daily meeting if the requirement is met or not.

11.11.4.3 Status cards

**Combo breaker**
When a team manages to fulfil 3 daily challenges in a row they earn this status (both players in the team has to fulfil the daily challenges). This card can be stolen from the team if another team manages to fulfil more daily challenges in a row. The
+50XP from the status card is activated at the last daily meeting of the game.

<table>
<thead>
<tr>
<th><strong>JIRA Knight</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>The team with the most XP collected from JIRA tasks can obtain this card. When a team gets more XP from JIRA tasks they steal the card. The +50XP from the status card is activated at the last daily meeting of the game.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Horse farmer</strong></th>
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</thead>
<tbody>
<tr>
<td>The team with possessing the most Cold resistance cards earns this card (at least 3 Cold resistance cards are required). If a team gets more Cold resistance cards then they can steal the card. The +30XP from the status card is activated at the last daily meeting of the game.</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Spanish inquisition</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>The team with the most XP collected from ad-hoc tasks can obtain this card. When a team gets more XP from ad-hoc tasks they steal the card. The +50XP from the status card is activated at the last daily meeting of the game.</td>
</tr>
</tbody>
</table>
**Speedy Gonzales**

The team collecting the most XP (only work related XP) in one day can obtain this status. The card gives the team +5XP. If a team manages to collect more XP in day then the card is stolen. The +5XP from the status card is activated at the last daily meeting of the game.

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**11.11.5 Lateral Coin**

3 pieces of the coin are hidden in the office at the beginning of each week. The person who finds one can draw a zone card or can exchange it for a Tauntaun/Cold Resistance card.

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**11.12 Scorekeeping and other attachments**

**Sprint 35 (19/02/2018 – 06/03/2018)**

Detailed Scorekeeping was used for the 1st game. The daily progress was noted. For Sprint 36-37-38 only the summary excels were used for tracking the progress.

**19th February**

Game test phase kick off – presentation

Sprint 35

Teams assigned:

Peter+ Sydney
Thomas + Christoph

Peti + Mike

Daily meeting to set up the daily challenges

Peti+Mike: LateralCoin found → Tent camp card → if everybody manages the daily challenge everybody gets double XP for it

20th February

Peter+ Sydney

Daily challenge: 0+10  (→ Tent camp card failed, no double XP for anybody)

Peter helped out Sydney: 5

Original: 15XP

LateralCoin found → Duel of fates card → darts duel for point exchange → Peter plays against Christoph, and wins, so he takes the points of Thomas + Christoph

Final: 25XP

Thomas + Christoph

Daily challenge: 10+10

Christoph helped out Sydney: 5

Original: 25XP

Lost game against Peter

Final: 15 XP

Peti+Mike

Daily challenge: 10+10

Final: 20XP

21st February

Peter+ Sydney
Daily challenge: 10+10

JIRA task: 811 finished and logged: 25+5 (Sydney)

Peter helped Sydney: 5

Final: 80XP

Zone jump → card → Avalanche card → if someone doesn’t fulfil the daily challenge nobody gets the daily challenge points

Thomas + Christoph

Daily challenge: 10+10

JIRA task: 801 finished and logged: 7+5 (Christoph)

Final: 47XP

Peti+Mike

Daily challenge: 0+0

JIRA task: 834 finished and logged 2+5 (Mike)

Final: 27XP

22nd February

Peter+ Sydney

Daily challenge: 10+10

Final: 100XP

Zone jump → card → Challenge card → risked XP: 50 → challenge is to wear the Fez for 1 workday

LateralCoin found → With great power… card → Peter will receive double XP for the upcoming 2 workdays

Thomas + Christoph

daily challenge: 10+0 (Christoph is on a sick leave → error handling needs here)
Final: 57 XP

Zone jump → card → Pickaxe card → double XP until they leave this zone

Peti+Mike

Daily challenge: 10+10

JIRA task: 836 finished and logged 2+5 (Mike)

823 finished and logged 11+5 (Peti)

Final: 70 XP

Zone jump → card → Back to the future → not used up yet

23rd of February

Peter+ Sydney

Daily challenge: 20+10 (Peter has the double XP card active, ½ workday)

Challenge card: challenge done → +50XP

Final: 180XP

Thomas+ Christoph

daily challenge: 20+0 (double XP for pickaxe is active, and Christoph is on sick leave)

Final: 77XP

Peti+Mike

Daily challenge: 10+10

Final: 90XP

END OF 1st WEEK
26th February

Peter+Sydney
Daily challenge: 10*2+10, because spiderman
JIRA Task: 818 completed and logged 50+5 (Peter) *2 because spiderman card
Final: 320 XP
Spiderman card done
2 zone cards: Back to the future + Pickaxe

Thomas+Christoph
Daily challenge: X
Final 77 XP

Peti+Mike
Daily challenge: X
LateralCoin found → Challenge card for 50XP → funny videos for 3 days card
Final 90 XP

27th February

Alex is away → so challenges for 2 days were set

28th February

Peter+Syndey
Daily challenge: 0+10 *2 (pickaxe)
Final: 340XP
Thomas+Christoph

Daily Challenge: 10+0

JIRA Tasks: 815 finished and logged: 6+5
816 finished and logged: 25+5
833 finished and logged: 33+5
Thomas helped out Peter: 5Xp
AND ALL *2, because pickaxe
Final: 295XP

2 zones cards:
Challenge card → 50XP → motivational cards
Spiderman card → active for Thomas

Peti+Mike

Daily challenge 10+0
Mike help out 2 people: 2*5
Final: 120XP

zone card: back to the future card

1st of march

Peter + Sydney

Daily challenge: 0+ 10
JIRA Task 812 → 25 +5 log
pickaxe --# 40*2 XP

183
Final XP: 440

zone card → But duel of fates card → Sydney against Peti → Sydney wins → +50 XP for the team, and -50XP for Peti+Mike

Final XP: 490 XP

2 lateral coins→ Sugar daddy → Peti+Mike → +5% from the next 3 days of work → Challenge card → no laughing until the end of the day for 50XP

Thomas+Christoph

Daily challenge : 10*2+10 (spiderman for Thomas)

JIRA Task: 831 → done a lot faster → vote passed -> 100% points to get → 13 + 5 for log *2 because spiderman

→ zone card → tent camp

Final XP: 361 XP

Mike+Peti7

Daily challenge: 10+0

Helped out Alex: +5

Jira Task: 809 → 10+5 log

Challenge card fulfilled: sending funny videos → +50

Final: 205

But duel of fates → 155 XP

Zone card: New rule → nobody being angry in front of the computer for 1 day

2nd of march

Péter+Sydney
daily challenge: 10+10
Challenge card → not to laugh → failed: -50 XP

Final: 460XP

Thomas+Christoph
daily challenge: 0+10
Christoph helped out Mike: +5

- spiderman card expired
- tent camp card could not be used

Final: 376XP

Mike+ Peti
Daily challenge: 10+0
Sugar daddy card 1st day→ from 20 point 5% → +1

Final: 166 XP

Everybody kept the rule card, no raging in front of the computers

5th of march

Peter+Sydney
Daily challenge: 10+10
Final XP: 480

Thomas+Christoph

Daily challenge: 10+10

JIRA task: 832 → 5 +5
830 → 6+5

Challenge fulfilled: motivation cards for 3 days: +50

Final XP: 465

+LateralCoin: Pickaxe for zone 400

Zone card: challenge card → to make a favor for the best team

Peti+Mike

Daily challenge: 0+10

Peti helped: +5

Suggar daddy active → 20 points, 5% -> +1XP

Final XP: 182

6th of March

Peter+Sydney

Daily challenge: 10+10

Peter helped Thomas, Peti, Mike → 5+5+5

Jira tasks: 819 → 50+5 (Back to the future card used up)
843 → 27+5
Final XP: 607

LateralCoin: To gaze challenge against somebody for 50XP

Lost against Thomas: -50XP

FINAL FINAL: 557

Thomas+Christoph
daily challenge: 10+0
Jira task: 829 → 8+5
Challenge card fulfilled: to make favor → +50Xp
Pickaxe active: *2
Final XP: 611
Won the gaze challenge: **636 XP the FINAL FINAL → WINNER TEAM**

Mike+Peti
daily challenge: 0+0
Helped out: +5
Sugar daddy: 47 points, 5% → +2XP
FINAL FINAL: 189XP

END OF TEST GAME
<table>
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<tr>
<th>Name</th>
<th>Task ID</th>
<th>Estimated day</th>
<th>Estimated hour</th>
<th>Full time in hours</th>
<th>Points per task</th>
<th>Task</th>
<th>Points</th>
<th>Notes</th>
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**Rewards**

- Peter+Sydney: Company T-shirt
- Christoph+Thomas: Movie together, they specify the movie
- Mike+Peti: They can choose the game for the next LAN party
<table>
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<tr>
<th>Name</th>
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<th>Estimated day</th>
<th>Estimated hour</th>
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**Reminders**
- Throw the Hyde Group T-shirt
- Christoph/Mike Company T-shirt
- Peter/Mike Company T-shirt
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<th>Task ID</th>
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**Notes:**
- Points/log (SUM 30)
- Created/Assigned/Daily (Y/N)
- Notes: help+Jira, small help, untrained task, challenge fail, help+Jira, challenge fulfilled (funny vid)
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| **Mike** | 20/04 | 21/04 | 22/04 | 23/04 | 24/04 | 25/04 | 26/04 | 27/04 | 28/04 | 29/04 | 30/04 | 2/05 | 3/05 | 4/05 |
| Task | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 |
| Estimated hours | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 |
| Actual hours | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 |
| Points per task | 40 | 40 | 40 | 40 | 40 | 40 | 40 | 40 | 40 | 40 | 40 | 40 | 40 | 40 |
| Points/log | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |

| **Péter Mike** | 20/04 | 21/04 | 22/04 | 23/04 | 24/04 | 25/04 | 26/04 | 27/04 | 28/04 | 29/04 | 30/04 | 2/05 | 3/05 | 4/05 |
| Task | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 |
| Estimated hours | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 |
| Actual hours | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 |
| Points per task | 40 | 40 | 40 | 40 | 40 | 40 | 40 | 40 | 40 | 40 | 40 | 40 | 40 | 40 |
| Points/log | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |

| **Sugardaddy** | 20/04 | 21/04 | 22/04 | 23/04 | 24/04 | 25/04 | 26/04 | 27/04 | 28/04 | 29/04 | 30/04 | 2/05 | 3/05 | 4/05 |
| Task | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 |
| Estimated hours | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 |
| Actual hours | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 |
| Points per task | 40 | 40 | 40 | 40 | 40 | 40 | 40 | 40 | 40 | 40 | 40 | 40 | 40 | 40 |
| Points/log | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |

| **Holiday** | 20/04 | 21/04 | 22/04 | 23/04 | 24/04 | 25/04 | 26/04 | 27/04 | 28/04 | 29/04 | 30/04 | 2/05 | 3/05 | 4/05 |
| Task | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 |
| Estimated hours | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 |
| Actual hours | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 |
| Points per task | 40 | 40 | 40 | 40 | 40 | 40 | 40 | 40 | 40 | 40 | 40 | 40 | 40 | 40 |
| Points/log | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |

| **Team SUM** | 20/04 | 21/04 | 22/04 | 23/04 | 24/04 | 25/04 | 26/04 | 27/04 | 28/04 | 29/04 | 30/04 | 2/05 | 3/05 | 4/05 |
| Task | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 |
| Estimated hours | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 |
| Actual hours | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 |
| Points per task | 40 | 40 | 40 | 40 | 40 | 40 | 40 | 40 | 40 | 40 | 40 | 40 | 40 | 40 |
| Points/log | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
Climbing Mount SCRUM

Introduction to the rules of the gamified SCRUM

Also 1st testing phase
Agenda

- Background
- Rules
- Expectation
Background

- Thesis
- Gamification
Rules: Layout

• Game goal:
Be the first **team** on the **top**
What happens with the 1st?
What happens with the last?

Climbing Mount SCRUM
Rules: How to collect XP?

Daily quest:
• Set up a daily quest for yourself on the daily meeting
• In case of fulfilling the quest: +10XP
• Discussed on each daily meeting

• VETO: If 3 votes are against the challenge
Rules: How to collect XP?

Sprint planning:
• Estimate your workload: 100 XP/each person
  A) less than 1d or 1d: be in +-1h for full XP
  B) more than 1d: be in +- 4h for full XP
  C) Not completing on time: +40% of full XP
  D) Completing before time: +80% of full XP

+option: vote for +20% in case of C-D (3 votes needed)

• E.g.: 2 tasks for the sprint: 50-50XP each
Rules: How to collect XP?

Other ways:
• Log your performance on JIRA: +5XP/task
• Help out a colleague: +5XP/occasion (max 15XP/day)
Rules: Mount SCRUM cards

With great power...

Choose who of you in the team will receive double XP for the upcoming 2 workdays.

Name: 

Challenge card

Risk between 10-50XP then take a Challenge card.

If you do the Challenge you get the XP, if not, you loose the XP.

Team:

XP:
Rules: Challenge cards and LateralCoin

Let’s do it!

One of you has to send a funny picture/meme to the company e-mail group for the upcoming 5 workdays.
Expectation

Design Thinking Method:

„Shitty prototype phase” → Now it’s time to test

Feedback and improvement → „Ideabox”
Thank you for your attention!
Climbing Mount SCRUM

What changed in the rules?

2nd round

Alexander Pavlov
07/03/2018
Agenda

• Feedback
• Rules update
Feedback

- More focus on work
- Less XP for challenges
- Better error handling
- Statuses
- Leaderboard
- More interaction within the team
Game Goal

First team on the top
Will win the specified reward
Side Game Goal - Leaderboard

The person with most XP
The last team invites the Person for a dessert/beer
Rules: How to collect XP?

Daily quest:
• Set up a daily quest for yourself on the daily meeting
• In case of fulfilling the quest: +10XP
• Discussed on each daily meeting

• VETO: If 3 votes are against the challenge
Rules: How to collect XP?

Sprint planning:
• Estimate your workload: 100 XP/each person
  A) less than 1d or 1d: be in +-1h for full XP
  B) more than 1d: be in +- 4h for full XP
  C) Not completing on time: +40% of full XP
  D) Completing before time: +80% of full XP

+option: vote for +20% in case of C-D (3 votes needed)

• E.g.: 2 tasks for the sprint: 50-50XP each
Rules: How to collect XP?

Other ways:

• Log your performance on JIRA: Total 30XP divided for the tasks

• Help out a colleague: +5XP/occasion (max 15XP/day)

• Attending a meeting: +10X (max 10XP/day)
From Gamification ideabox

If your team mate is on holiday/sick:
+15XP/day

If your work tools are down:
+10XP/day

Handling tasks which come in randomly:
Treated as extra daily challenges
+10 XP/task if can be solved within 1-2 days
+20 XP/task if can be solved in more than 2 days
(max 30 XP/ team/daily meeting)
Zone 400

You need 2 tauntauns/team to survive the cold

How to get it:

Draw card

Use the LateralCoint
NEW Status cards

Combo breaker

JIRA Knight

Tauntaun farmer

After 3 days of fulfilling both the daily challenges in a team your team can obtain the Combo breaker title. This means extra 50XP. The team with the highest daily challenge combo can steal the card.

The team with the most points from the JIRA task can obtain the JIRA Knight title. This means extra 50XP. The team with the most XP from JIRA can steal the card.

When you own at least 3 tauntauns you can obtain the Tauntaun farmer title. This means extra 30XP. The team with most tauntauns can steal the card.
Other

LateralCoins placed every week once

Once a week you can try your luck with the „Surprise boxes“ for 10XP
(counted individually)
Thank you for your attention!
Climbing Mount SCRUM

What changed in the rules?

3rd round

Alexander Pavlov
26/03/2018
Agenda

• Winners
• Feedback
• Rules update
Winners

- Team: Thomas+Sydney
- Individual: Sydney
Feedback

• Ad-hock task handling
• JIRA handling
• Cards should keep the teams moving
• Help XP – rethink
• Include not only darts
Game Goal

First team on the top
Will win the specified reward
Side Game Goal - Leaderboard

The person with most XP
The last team invites the Person for a dessert/beer
Rules: How to collect XP?

Daily quest:
• Set up a daily quest for yourself on the daily meeting
• In case of fulfilling the quest: +10XP
• Discussed on each daily meeting

• VETO: If 3 votes are against the challenge
Rules: How to collect XP?

Sprint planning:
• Estimate your workload: 100 XP/each person
  A) less than 1d or 1d: be in +/-1h for full XP
  B) more than 1d: be in +/- 4h for full XP
  C) Not completing on time: +40% of full XP
  D) Completing before time: +80% of full XP

+option: vote for +20% in case of C-D (3 votes needed)

• E.g.: 2 tasks for the sprint: 50-50XP each
Rules: How to collect XP?

Other ways:

• Log your performance on JIRA: Total 30XP devided for the tasks

• Help out a colleague: +5XP/occasion (max 15XP/day)

• Small help: +2XP/occassion (max 10XP/day)

• Attending a meeting: +10X (max 10XP/day)
From Gamification ideabox

If your team mate is on holiday/sick:
+15XP/day

If your work tools are down:
+10XP/day

Handling tasks which come in randomly:
Treated as extra daily challenges
+10 XP/task if can be solved within 1-2 days
+20 XP/task if can be solved in more than 2 days
(max 30 XP/ team/daily meeting)
Zone 400

You need 2 tauntauns/team to survive the cold

How to get it:

Magic dice
Use the LateralCoin
NEW Status cards

Combo breaker

JIRA Knight

Tauntaun farmer

Spanish inquisition
Other

LateralCoins placed every week once

Once a week you can try your luck with the „magic dice” for 10XP
(counted individually)
1,3,5 → Tauntaun
2,4,6 → Challenge card

*If you fall back a zone because of magic dice purchase, you can not draw a zone card again
Thank you for your attention!
Individual XP leaderboard

Sydney: 256
Thomas: 176
Christoph: 151
Peter: 122
Peti: 113
Mike: 112
Climbing Mount SCRUM

What changed in the rules?

4th round (Final round?)

Alexander Pavlov
13/04/2018
Agenda

- Winners
- Feedback
- Rules update
Winners

• Team: Thomas+Peter
• Individual: Thomas
Feedback

• Game master should decide instead of voting
• New status card
• More muscle up
• Compensation strategy
Game Goal

First team on the top
Will win the specified reward
Side Game Goal - Leaderboard

The person with most XP
From challenge+help:
The last team invites the Person for a dessert/beer
Rules: How to collect XP?

Daily quest:
• Set up a daily quest for yourself on the daily meeting
• In case of fulfilling the quest: +10XP
• Discussed on each daily meeting

• VETO: If the game master is against the challenge
Rules: How to collect XP?

Sprint planning:
• Estimate your workload: 100 XP/each person
A) less than 1d or 1d: be in +-1h for full XP
B) more than 1d: be in +- 4h for full XP
C) Not completing on time: +40% of full XP
D) Completing before time: +80% of full XP

+option: game master can decide for +20% in case of C-D

• E.g.: 2 tasks for the sprint: 50-50XP each
Rules: How to collect XP?

Other ways:
- Log your performance on JIRA: Total 30XP divided for the tasks
- Help out a colleague: +5XP/occasion (max 15XP/day)
- Small help: +2XP/occasion (max 10XP/day)
- Attending a meeting: +10X (max 10XP/day)
From Gamification ideabox

If your team mate is on holiday/sick:
+10XP/day

If your work tools are down:
+10XP/day

Handling tasks which come in randomly:
Treated as extra daily challenges
+10 XP/task if can be solved withing 1-2 days
+20 XP/task if can be solved in more than 2 days
(max 30 XP/ team/daily meeting)
Zone 400

You need 2 Cold Resistance cards/team to survive the cold

How to get it:

Magic dice

Use the LateralCoin
Status cards

Combo breaker (50XP)

JIRA Knight (50XP)

Horse farmer – Cold Resistance card (30XP)

Inquisitor (50XP)

Most XP in one day (5XP)
**Other**

LateralCoins placed every week once

Once a week you can try your luck with the „magic dice” for 10XP (counted individually)
1,3,5 → Cold Resistance
2,4,6 → Challenge card

*If you fall back a zone because of magic dice purchase, you can not draw a zone card again*
Thank you for your attention!
Individual XP leaderboard

Thomas: 260
Sydney: 234
Mike: 195
Christoph: 185
Peter: 182
Peti: 73
The Bartle Test

Name: Christoph

1. Which is more enjoyable to you?
   A) Killing a big monster
   B) Bragging about it to your friends

2. Which do you enjoy more in quests?
   A) Getting involved in the storyline
   B) Getting the rewards at the end

3. Which would you rather be noticed for in an online game?
   A) Your equipment
   B) Your personality

4. Which do you enjoy more in an online game?
   A) Getting the latest gossip
   B) Getting a new item

5. Which would you rather have, as a player in an online game?
   A) A private channel, over which you and your friends can communicate
   B) Your own house, worth millions of gold coins

6. Which would you enjoy more as an online game player?
   A) Running your own tavern
   B) Making your own maps of the world, then selling them

7. What's more important in an online game to you?
   A) The number of people
   B) The number of areas to explore

8. What's more important to you?
   A) The quality of roleplaying in an online game
   B) The uniqueness of the features, and game mechanic

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11. Would you rather
    A) Vanquish your enemies
    B) Convince your enemies to work for you, not against you

12. Which is more exciting?
    A) A well-roleplayed scenario
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13. Which would you enjoy more?
    A) Winning a duel with another player
    B) Getting accepted by a clan

14. Is it better to be:
    A) Feared
    B) Loved
15. Would you rather:
   A) Hear what someone has to say
   B) Show them the sharp blade of your axe

16. In an online game, a new area opens up. Which do you look forward to more?
   A) Exploring the new area, and finding out its history
   B) Being the first to get the new equipment from the area

17. In an online game, would you rather be known as:
   A) Someone who can run from any two points in the world, and really knows their way around.
   B) The person with the best, most unique equipment in the game

18. Would you rather:
   A) Become a hero faster than your friends
   B) Know more secrets than your friends

19. Do you tend to:
   A) Know where to find things
   B) Know how to get things?

20. Which would you rather do:
   A) Solve a riddle no one else has gotten
   B) Getting to a certain experience level faster than anyone else

21. In an online game, would rather be known for
   A) Knowledge
   B) Power

22. Would you rather:
   A) Defeat an enemy
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23. If you’re alone in an area, do you think:
   A) It’s safe to explore
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   A) Go to an area your opponent is unfamiliar with and prepare there
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26. In an online game, would you rather:
   A) Have a sword twice as powerful as any other in the game
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   A) How many other players you’ve killed
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28. Would you rather have:
   A) A spell to damage other players
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29. Would you rather receive as a quest reward:
   A) Experience points
   B) A wand with 3 charges of a spell that lets you control other players, against their will.

30. When playing a video game, is it more fun to:
   A) Have the highest score on the list?
   B) Beat your best friend one-on-one?
The Bartle Test

Name: Mike

1. Which is more enjoyable to you?
   A) Killing a big monster
   B) Bragging about it to your friends

2. Which do you enjoy more in quests?
   A) Getting involved in the storyline
   B) Getting the rewards at the end

3. Which would you rather be noticed for in an online game?
   A) Your equipment
   B) Your personality

4. Which do you enjoy more in an online game?
   A) Getting the latest gossip
   B) Getting a new item

5. Which would you rather have, as a player in an online game?
   A) A private channel, over which you and your friends can communicate
   B) Your own house, worth millions of gold coins

6. Which would you enjoy more as an online game player?
   A) Running your own tavern
   B) Making your own maps of the world, then selling them

7. What's more important in an online game to you?
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The Bartle Test

Name: Peter

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   B) Bragging about it to your friends

2. Which do you enjoy more in quests?
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   A) Getting the latest gossip
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5. Which would you rather have, as a player in an online game?
   A) A private channel, over which you and your friends can communicate
   B) Your own house, worth millions of gold coins

6. Which would you enjoy more as an online game player?
   A) Running your own tavern
   B) Making your own maps of the world, then selling them

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The Bartle Test

Name: Peti

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3. Which would you rather be noticed for in an online game?
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   B) Your personality

4. Which do you enjoy more in an online game?
   A) Getting the latest gossip
   B) Getting a new item

5. Which would you rather have, as a player in an online game?
   A) A private channel, over which you and your friends can communicate
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6. Which would you enjoy more as an online game player?
   A) Running your own tavern
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The Bartle Test

Name: Sydney

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   (A) Killing a big monster
   (B) Bragging about it to your friends

2. Which do you enjoy more in quests?
   (A) Getting involved in the storyline
   (B) Getting the rewards at the end

3. Which would you rather be noticed for in an online game?
   (A) Your equipment
   (B) Your personality

4. Which do you enjoy more in an online game?
   (A) Getting the latest gossip
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5. Which would you rather have, as a player in an online game?
   (A) A private channel, over which you and your friends can communicate
   (B) Your own house, worth millions of gold coins

6. Which would you enjoy more as an online game player?
   (A) Running your own tavern
   (B) Making your own maps of the world, then selling them

7. What's more important in an online game to you?
   (A) The number of people
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The Bartle Test

Name: Thomas

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