Customer Acquisition and Retention by Gamifying User Experience
- Gamifying the team messaging app Briteback

Liska Cersowsky Weström

Tutor: Rachel Ellis
Examiner: Carine Signoret
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ABSTRACT

Studies have shown that many problems office workers face today arise from digital communication and collaboration, with information overload being the biggest obstacle to being effective and productive. Briteback is a new messaging app for teams, which was launched in November 2015, and which aims to solve these problems by providing users with a platform where they can manage all their work-related communication, in an attempt to structure office workers’ communication and to relieve communication related stress. As the app is a new competitor on the market, Briteback is evaluating the possibility of using different marketing strategies to position itself against competition, and to deepen their customer’s engagement and loyalty. According to several studies, gamification is a promising marketing strategy which can be applied to all kind of contexts. Given this background, this study examines what elements a gamification concept could include to assist Briteback with its marketing strategy to acquire new customers, as well as to deepen customer engagement and loyalty. The gamification concept resulted in an achievement based model, where users of the app can collect badges and learn more about the app and its features, as well as how to use these most effectively. Users can compete against each other for a leaderboard position and earn a VIP club membership to gain early access to new features. Usability tests at the end of the design process showed that study participants rated the overall usability of the gamification concept with a score of 75.6. It is concluded that the developed gamification elements have great potential of assisting Briteback with its marketing goals.
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2 INTRODUCTION

“Games have begun to influence our lives every day. They affect everything from how we vacation to how we train for marathons, learn a new language, and manage our finances. What we once called “play” at the periphery of our lives is quickly becoming the way we interact. Games are the future of work, fun is the new ‘responsible’, and the movement that is leading the way is gamification.” (Zicherman & Cunningham, 2011, p.13)

The world has become small and connected. Once office workers sent letters, telegrams and faxes around the world to reach business partners or customers. Nowadays they communicate through social media, email and chat clients, as well using online telephony. Office workers are used to SMS, MMS, Skype, Outlook Express, WhatsApp, Facebook, and many more services. Also, they are not just talking to customers and business partners, but even colleagues, who are located all around the world.

Studies have shown that one of the biggest problems office workers face today arise from digital communication and collaboration, with information overload being the biggest obstacle to being effective and productive. In other words, today’s office workers receive more messages than they can handle and process effectively (Dabbish & Kraut, 2006).

With an increasing amount of received messages – foremost emails – (Grevet et al., 2014) office workers are forced to switch their attention between several tasks and tools (Belotti et al., 2005), as most of today’s emails convey important work related information which is delivered through all kind of channels.

Furthermore, office workers allow themselves to continuously check incoming emails as quickly as if they had to answer a telephone call (Jackson, Dawson, & Wilson, 2001). As a consequence of this, the average office worker gets constantly interrupted in his/her work at hand and is losing time for effective work (Jackson, Dawson, & Wilson, 2001). This in its turn leads to increased perceived stress levels (Kompier & Cooper, 1999), which can be argued decrease office worker’s ability to cope with information overload.

Therefore it can be argued that office workers would benefit from solutions that help them organize and handle digital communication and collaboration.
One such solution is the web based messaging app Briteback, which integrates several communication media, such as email, chat and voice/video, as well as project management tools, customer relationship tools (CRM) and social media.

By collecting all communication tools in one app, Briteback’s vision is to minimize office worker’s need for multi-tasking several apps and software, as well as minimizing the amount of received emails, and by this, ultimately increasing an office worker’s time for actual work.

The app is specifically built for teams and enterprises, and allows its users to ascribe roles to each individual on a team which determines what can be done in the app, and with the aim of only including individuals in work related conversations which are relevant to their role. For example, in an enterprise there might be a marketing team, a sales team and a development team. Not all individuals on each team benefit from engaging in communication with everyone else. Based on their team roles in the app, it is possible to connect individuals who benefit from communicating with each other, at the same time as they are protected them from irrelevant information.

Furthermore, the app also allows it’s users to set up communication policies which determine the framework of a team’s digital communication and collaboration, with the goal of structuring communication and thereby making teamwork more effective.

Briteback is an IT startup which was founded in 2014, and which launched its app in November 2015. Due to their recent entry on the market, Briteback is evaluating the possibility of using different kinds of marketing strategies in order to gain awareness of potential users, and to position itself against competition. Gamification could be one possible solution, as none of Briteback’s direct competitors (Weström, 2016) seem to include this kind of a strategy, to make their users communication more effective\(^1\).

Over the past couple of years, gamification has been a wildly debated topic among scientists and practitioners, with a large consensus, that if implemented and designed the right way, it has a huge potential to be an effective marketing strategy (Deterding et al., 2011), which can help businesses to raise awareness of their products and services, as well as to deepen customer engagement and loyalty (Lucassen & Jansen, 2014).

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\(^1\) This information refers to the time the business requirements (p. 25) were examined.
Given this background, this study examines what elements a gamification concept could include to assist Briteback with its marketing strategy to acquire new customers, as well as to deepen customer engagement and loyalty.

This study was conducted according to well established design methods within the field of interaction design (Goodwin & Cooper, 2009), which firstly includes the process of examining the stakeholders’ and users’ requirements, as well as understanding the existing system, followed by a design process were ideas and possible solutions are sketched and evaluated. Finally, wireframes and a prototype of the design concept are developed and tested at potential users of the system, with the aim of understanding the design concept’s overall usability.

In iterative design processes like this (Goodwin & Cooper, 2009), the results of the usability tests are commonly used as a method to improve and further develop the design concept, which is ideally iterated and tested several times. However, given the time frame and the scope of this work, only one iteration was possible. Therefore, the results of the usability test are not being treated as the final result of the design process in this report, but as a method. This report concludes with design recommendations for the further development of the gamification concept.
3 THEORY

In this chapter, all relevant theory needed for developing a gamification concept will be described. This includes theories about gamification itself, as well as theories regarding the methods used for the development of such a concept.

3.1 GAMIFICATION THEORY

The following sections will focus on gamification theory. Several definitions and examples of gamification will be presented to describe the broad perspective that exists among scientists and practitioners today. Following this, a general gamification framework will be presented, as well as principles and cognitive theories about motivation, which may help a designer to develop a successful gamification concept. Lastly, player types will be described in order to understand what drives different people to engage in a gamified experience.

3.1.1 Gamification defined

When speaking about gamification, researchers and practitioners refer to the application of game-like elements in traditionally non-game contexts, with the purpose of adding gamefulness to an existing system, instead of designing a complete game (Deterding et al., 2011). These contexts can vary, ranging from business processes to services and products. Furthermore they may include a company’s employees and/or it’s customers (Robson, Plangger, & Kietzmann, 2015).

But, gamification can also be regarded as an umbrella term which includes complete games, as well as loyalty programs, persuasive technologies and all kind of choice building mechanisms, e.g. nudge (Hamari & Koivisto, 2013).

Despite being different, both perspectives agree that the purpose of gamification is to directly influence and change an individual’s motivation and behavior towards a desired direction (Deterding et al., 2013; Hamari & Koivisto, 2013). From a marketing perspective, this can include the goal of acquiring new customers, as well as increasing customer engagement and loyalty (Robson, Plangger, & Kietzmann, 2015).
Lucassen & Jansen (2014) even describe the objective of raising awareness about a brand or business, as well as deepening customer engagement and loyalty to be the most important purposes of gamification.

Aside from using gamification for product and service marketing, there are also promising outlooks for it being used within business processes and at workplaces. According to Oprescu, Jones, & Katsikitis (2014), here gamification can help to make the working environment and employee’s duties more fun and thereby help decrease various problems that employees may experience. Rightly designed, gamification can help reduce stress levels, increase the sense of community, loyalty and productivity, which benefit the individual employee as well as the organization as a whole (Oprescu, Jones, & Katsikitis, 2014).

In this thesis gamification will be regarded according to Huotari & Hamari (2012), who define gamification as:

“A process of enhancing a service with affordances for gameful experiences in order to support user’s overall value creation.” (p. 19)

3.1.2 Gamification examples

Given this broad definition of gamification there seems to be no context, where gamification could not be used. This is why its application can be found within educational contexts, healthcare, transportation and even governmental contexts (Robson, Plangger, & Kietzmann, 2015).

Indeed, there is a wide range of businesses that include gamification in their marketing strategy, and which can be found in all kind of industry sectors. For example, StackOverflow (Badges, 2016) which is an online help forum for programmers rewards its users with badges for particularly helpful answers. These badges appear on user’s profile pages and their posts in the forum, together with a reputation score.

Other companies that have successfully implemented gamification for the mass market are Nike+ (sports brand), HealthMonth (lifestyle service), Khan Academy (educational non-profit organisation) and many more (Deterding et al., 2013).

One of the most referred to case study regarding gamification concerns the online service Foursquare, which is claimed to have spurred marketer’s interest in gamification all over the world (Deterding et al., 2013). Foursquare (Foursquare About, 2016) is an online map service, which lets its users discover new places and which provides information about possible activities at that specific location.
The service allows users to check in at places using their mobile devices and share their location with other people. The experience of exploring new places has been gamified so that users can earn stickers for their actions and see their ranking on leaderboards. Also, when a user has checked in at a place more often than any other user, this person is assigned a “mayor” status which is publicly visible.

Yet another example is the social network game Farmville (Zicherman & Cunningham, 2011) which gradually leads its users to spend increasing amounts of money, the further users have come into the game and the more they want to increase their gaming experience. To be able to play the game, users need to register a Facebook account, where game achievements and actions are made visible to the user’s social network.

3.1.3 MDE Framework

Now, that gamification has been defined and examples have been presented, one can ask how a gamified experience is constructed generally. Robson, Plangger & Kietzmann (2015) have developed the MDE framework which contains three principles that are the building blocks of a gamified experience – Mechanics, Dynamics and Emotions (see figure 01).

![Figure 01: Illustration of the MDE framework developed be Robson, Plangger & Kietzmann (2015).](image)
Mechanics
According to the MDE framework (Robson, Plangger, & Kietzmann, 2015), mechanics describe the goal of the gamification concept, its rules and context, as well as what types of interaction it allows to occur. Mechanics are the basic set up which must be developed before the game can be played. They apply to each and every user and do not change throughout the game.

There are three types of mechanics, which can be divided into setup, rule and progression mechanics. According to Elverdam & Aarseth (2007) set up mechanics refer to those elements that are used to shape the player’s experience, by defining which objects can be acted upon and how they are distributed among the players. The designer has to decide wether the game shall be played in single player or multi player mode. Shall the game take place in the real or virtual world, will players compete with other humans or a computer, is the game open ended, turn based, real-time, and so on.

Rule mechanics (Elverdam & Aarseth, 2007) describe the goal of the game, what actions are allowed, if rules are deterministic, time-based, objective-based or topological, and so on. In other words, what happens when a player reaches a certain goal within the game, when can a player reach the goal, what kind of goal is reached, and so on.

Progression mechanics (Elverdam & Aarseth, 2007) refer to all the elements a designer uses to keep the player going into the right direction and keep playing. Providing feedback which guide the player towards a goal and distributing rewards are progression tactics, which may include progress bars, scores, badges or leaderboards.

Dynamics
Within the MDE framework, dynamics are described as different types of player behavior as a consequence of game playing (Robson, Plangger, & Kietzmann, 2015). Players develop strategies which help them to achieve their goals and which can be of positive or negative nature. Cheating, cooperating and conspiring are just a few examples.

Emotions
Unlike dynamics, emotions refer to the player’s affective states (Robson, Plangger, & Kietzmann, 2015), which emerge as a consequence of playing a game. They are the product of both the game’s mechanics and its dynamics.
Emotions can be positive, such as in joy, excitement and triumph, or negative, like disappointment of losing or sadness of not achieving a desired reward. For gamification to work it should aim to evoke positive emotions to be able to deepen user engagement and loyalty.

Zicherman and Cunningham (2011) conclude:

“When done well, gamification helps align our interests with intrinsic motivations of our players, amplified with the mechanics and rewards that make them come in, bring friends and keep coming back.” (p. 10)

3.1.4 Gamification principles
Research by Lucassen & Jansen (2014) shows a bright future for the integration of gamification in marketing contexts. Their study on marketing executives showed that all brand executives where convinced that gamification fit their current marketing activities and that the use of gamification becomes increasingly more relevant. The study subjects also believed that the increase in customer engagement will be the foremost benefit of using gamification in their marketing strategy.

But despite the promising outlooks, there are also concerns regarding the effectiveness of gamification to help businesses achieve their marketing objectives. Gartner (2012) predicted that 80% of gamified applications will fail to meet business objectives because of their poorly implemented design. Another reason is that marketing executives lack an accepted industry standard for measuring the effectiveness of gamification (Lucassen & Jansen, 2014).

For gamification to have the desired effects, its design has to be thoroughly understood by the people who are involved in the creative process of gamifying a product, service or business process (Robson et. al., 2015). But even then it is argued that there are no guarantees for success (Huotari & Hamari, 2012), because it is dependent on the individual’s perception of the gamified experience.

Even though there is no standard method of how to develop a gamification concept, there are well documented principles that can be taken into account, and which will be explained further in the following sections from the perspective of designing a gamification concept for any kind of digital system.
3.1.5 Motivational system

According to Gartner (2011), there are three important ingredients to ensure that a gamification concept will be successful. First of all, motivation needs to be balanced between intrinsic and extrinsic elements. Secondly, a momentum has to be established, which balances challenge difficulties with the skill levels of the user, and which usually is referred to by the term flow (Deterding et al., 2011). If challenges in the game are too difficult, the user may get frustrated. If challenges are too easy, the user may get bored. Lastly, Gartner (2011) argues that rewards and incentives within the gamification concept must be meaningful to the user.

Ryan & Deci (2000) describe the term motivation as inherent attitudes to goals which ultimately lead to action. Motivation is not a constant by this definition, and varies in its degree for each individual and different types of actions. According to Ryan & Deci (2000) and their formulated self-determination theory, there are two fundamental kinds of motivation: extrinsic and intrinsic motivation.

Intrinsic motivation refers to actions which are merely carried out for their inherent satisfaction. According to the cognitive evaluation theory (Deci, Koestner, & Ryan, 2001), intrinsic motivation is innate and positively influences an individual’s perception of self-determination and competence, also called mastery. Activities that are undergone for fun or challenge are described as being of intrinsic nature.

On the contrary, actions that are done for any kind of instrumental value (Ryan & Deci, 2000) are described as extrinsic motivation and are typically regarded as impoverished. It also argued that most of people’s activities in life are of extrinsic nature, with going to work for earning money as the foremost example.

In a meta study, Deci, Koester and Ryan (2001) examined the effects of extrinsic rewards on intrinsic motivation and found that those can undermine intrinsic motivation in educational settings. However, the study also shows that scientific results largely vary.

However, Ryan & Deci (2000) also offer a more nuanced perspective and argue that extrinsic motivation can both have and not have negative effects on intrinsic motivation, based on the degree of autonomy involved in the activity. The researchers exemplify their theory by comparing a student doing homework because of fear for parental sanctions, with a student doing homework because of a personal belief that this action might help a future career. In both settings the student does homework for some external rewards, and not because the student is intrinsically motivated.
However, in the first setting the student’s perceived degree of autonomy of his/her choice of doing homework is low, whereas the student’s choice in the second setting is marked by a high level of autonomy. It is therefore less likely to diminish the negative effects of extrinsic rewards on intrinsic motivation. Based on this reasoning, an individual’s perceived level of self-determination dictates if an external reward has positive or negative effects (Deci, Koestner, & Ryan, 2001).

Furthermore, Deci, Koester & Ryan (2001) argue that external rewards can be of informational or controlling nature, which influence an individual’s perceived self-determination and competence. Rewards with an informational character seem to enhance intrinsic motivation, whereas those perceived as controlling diminish it.

Material rewards (e.g. money, prizes, trophies) which are offered to an individual with the aim of engaging this person in actions which he/she otherwise would not have performed, are described as being controlling. However, if those very same rewards are handed out unexpectedly to the individual, they are less likely to decrease intrinsic motivation, because they are not experienced as being controlling in such a context.

According to Huotari & Hamari (2012) the most important aspect for ensuring autonomy from on beginning is to make an individual’s participation and commitment to the gamified concept voluntary.

3.1.6 Purposeful rewards
Gartner (2011) argued that rewards and incentives provided by the gamified concept must be meaningful to the user. This can be a true challenge for the people involved in designing a gamification concept, because each individual has it’s own idea of what a meaningful reward is. However, Judd & Churchill (2011) offer guidance with their study on the most widely used gamification element – badges. According to Judd & Churchill (2011), badges can be described as virtual medals, which are awarded to the user after completing certain tasks. With regard to the previously mentioned gamification examples, FourSquare uses badges to promote location sharing, whereas StackOverflow uses badges to motivate its users to being helpful and active forum participant. Judd & Churchill (2011) argue that badges are powerful rewards especially in social settings, because they inhere several positive qualities which makes them purposeful to different user types.
The researchers state (Judd & Churchill, 2011) that the foremost function of a badge is to serve as a goal-setting tool, which challenges users to achieve the goal that has been made visible to them through the badge. Goal-setting in itself is reported to be motivating and most effective when goals are just slightly out of reach (Ling, et al., 2005) and when the user is able to see his/her progression towards the goal (Fox & Hoffman, 2002). In other words, feedback should be provided to keep the user motivated to reach a goal. Fox & Hoffman (2002) also show that users increase their efforts to reach a goal, the closer they get to it, and that task completion in itself is implicitly satisfactory. In their study, Fox & Hoffman (2002) interpret the Lewinian theory of motivation and state that the human mind builds mental maps of goals and the steps leading to it. According to Fox & Hoffman (2002), elements which are ambiguous or unclear will be perceived as more difficult to reach.

Ling et al. (2005) agree that goal-setting is a powerful motivator, but also found that there are more or less effective ways to set them. For example, the researchers argue that individuals given specific goals and challenges were more likely to contribute than those who had been given unspecific goals. Also, individuals who were made aware of their uniqueness were more likely to contribute compared to those, who were not. Lastly, individuals who were given group goals were more likely to participate in the challenge than those who were presented only with individual goals. Giving instructions is another quality of badges (Judd & Churchill, 2011) which users can benefit from even when they are not playing. Simply by viewing what kind of badges are possible to earn, new users can be instructed about important features of a system, whereas experienced users can be helped to deepen their understanding of the system and diversify their actions.

Additionally, badges help reputation assessment among users (Judd & Churchill, 2011). By viewing another user’s badge collection one can determine whether this person is a dedicated or casual player, which allows users to draw conclusions about each other’s engagement with the system, as well as skill-level and competences. Badges also serve as status symbols (Judd & Churchill, 2011) which make users’ achievements visible and give affirmation. Badges which have been gained by completing more difficult tasks tend to be viewed as more valuable and are therefore of a higher status, no matter if the user’s interest lays in the individual benefits of affirmation or the social ones. Lastly, badges also promote group identification (Judd & Churchill, 2011). Users who play the game share actions with each other which are communicated through badges. This can be beneficial for gamifying business processes, as an increased group identification may boost employee cooperation (Kramer et al., 2001).
Zicherman & Cunningham’s (2011) developed reward system SAPS (Status Access Power and Stuff) also indicates that status rewards are the most desired ones among players. They define the term status as the relative position of one player in relation to another player, within a social group. By earning badges or receiving a ranking on a leaderboard users can compete with each other, and by these means get ahead of each other. However, for this to work achievements must be made visible to the players.

According to SAPS, the second most desired reward is the gain of access, such as being given early access to discounts and offers, the invitation to a meeting with a celebrity, or VIP treatment. Lastly, the least desired rewards are stated to be free giveaways.

3.1.7 Player types

As mentioned before players have different ideas about what motivates them and what kind of rewards they find meaningful. Zicherman & Cunningham (2011) have asked themselves why people enjoy games in the first place and found that mastery, stress relief, fun and socializing are some of the main reasons.

Also, Bartle (1996) has identified four different player types, which are heavily referred to in game design, and which differ in their degree to which they either interact within or upon the game world and other users (see figure 02). Bartle (1996) distinguishes between explorers, achievers, socializers and killers.

![Player Types Diagram](image-url)

**Figure 02: Bartle’s (1996) player types.**
According to Bartle (1996), explorers are motivated by discovering how the game works and what features there are. They tend to know the game in a very detailed manner and enjoy finding hidden levels. They are proud of their knowledge and happily share it with others.

Socializers (Bartle, 1996) participate in games mostly for social interaction. They view the game merely as a common ground for their interest in engaging with other people. Entertaining fellow players, as well as observing and listening to others are perceived as rewarding. Socializers like to attend to their in-game network and enjoy the influence they have on others.

Achievers (Bartle, 1996) are of competitive nature with the foremost goal of mastering the game. Their motivation lays in achieving rewards, such as points or levels. They are proud of their formal in-game status, especially when they mastered challenges in a short amount of time. However, achievers more often than any other player type tend to lose interest in the game when they cannot win.

Killers (Bartle, 1996) can be compared to achievers with the difference that winning alone is not motivational. For killers it is important to defeat other players. Furthermore, they want others to witness the defeat and for their victims to show respect.

Fortunately killers are believed to be the smallest amount of player types, with only 5% of a population if player types were mutually exclusive (Zicherman & Cunningham, 2011), and a player could only be described in terms of one player type. According to this estimation, about 75% of all players are supposed to be socializers, with explorers and achievers somewhere in between. Zicherman & Cunningham (2011) also argue that a breakdown of player types for the average individual makes her 80% socializer, 50% explorer, 40% achiever and 20% killer. In other words, the average person is mostly driven by social activities and motivated by autonomy, as well as interacting with the world.

This could be one explanation why social board games like bridge or multi player online games are so successful (Bartle, 1996). Also, the previous given examples show a strong tendency to social game elements. Zicherman & Cunningham (2011) even argue that if a user’s loyalty towards a product is not represented in social media then it is basically non-existent.

Recent studies support Bartle’s player types, but also added two more to the spectrum. For example, Marczewski (2015) argues for six player types, including socializers, philanthropists, free spirits, players, achievers and disruptors, based on their receptivity to different gamification strategies.
Marczewski’s (2015) typology is the first of its kind in the domain of gamification and agrees with Bartle’s (Bartle, 1996) description of socializers, achievers and killers, even though it names the latter as disruptors. What Bartle (1996) characterizes as explorers are described as free spirits in Marczewski’s (2015) typology, a player type which is predominantly driven by autonomy and self-expression. Additional to this player type, there are also so called philanthropists who are largely motivated by purpose and meaning, as well as showing altruistic character traits. Lastly, Marczewski (2015) mentions the player type, which is mostly motivated by receiving extrinsic rewards.

Figure 03: Interpretative summary of all six players types according to Bartle (1996) and Marczewski (2015), with regard to their motivational forces.

3.2 Method theory

This chapter will describe the theory behind the methods used for developing the gamification concept for Briteback’s team messaging app. First, the existing conditions have to be determined on which the gamification concept can be based upon. This process will be referred to as the gathering of requirements. Next, a design will be developed based on these requirements. The final stages of the process include the building of a prototype which illustrates the gamification concept, as well as testing the prototype on potential users of the app, with the goal of determining the concept’s general usability potential.
3.2.1 Requirements
The gathering of requirements is a well-established method within the field of user experience and interaction design (Maquire & Bevan, 2002) and critical for the success of a design concept. Requirements can be gathered in many different ways, for example by the analysis of documentation, by conducting user interviews or field observations. No matter the method, the aim of gathering requirements is to understand the problems of the target audience who shall be designed for, to be able to formulate goals that can be answered with the design.

3.2.2 Design
Designing is a creative process which happens iteratively. For the design process the method of sketching can be used (Greenberg et al., 2012), which can take very different forms, including everything from sketching with paper and pencil to producing digital mockups and/or wireframes. To be able to generate design solutions, Greenberg’s et al. (2012) “10 Plus 10”-method can been used for sketching. This method helps the designer to free the mind and develop 10 variations of a solution to a problem.

Then, these ideas can be critically evaluated by identifying their advantages and disadvantages. This way the number of ideas can be reduced, and the most promising idea can be further developed. It is important to keep in mind that the developed design ideas should eventually lead to the development of solutions that meet the requirements (Foley, 2007).

3.2.3 Prototype
Once design ideas have been sketched, a prototype of the design can be developed to help visualize these ideas, as well as to enable the designer and the stakeholders to discuss them.
There are several kinds of prototypes which can range from simple paper wireframes and mockups to advanced, fully programmed prototypes. They can also contain all parts of a system or focus on selected parts (Foley, 2007). Whatever the shape, by developing a prototype sketched ideas are brought together and can be properly evaluated, e.g. with the help of usability testing.

3.2.4 Usability tests
Usability testing (Foley, 2007) is a method to determine if the developed design is usable by the intended user population. Usability tests are commonly conducted in a controlled environment. Participants are presented with a prototype of the design with the help of which they are asked to fulfill pre-planned tasks, and for which there are one or several possible solutions. It is important to know that although human performance is measured with usability testing it is not the user’s capabilities which are focused on. Possible measurements, like the time it takes for the user to fulfill a task, how many tasks are completed or the number of errors which occur during the process, are solely used to evaluate the quality of the design. To collect this kind of data (Foley, 2007) users are usually observed by one or two present test leaders, who guide the participant through the test. They may take notes and/or evaluate task performance with the help of video, audio or screen recordings. Additional structured or semi-structured interviews may also be used to determine the quality of the design.

To understand the participants’ comprehension and interpretation of the design, the designer may additionally use the “think aloud”-method (Greenberg et al., 2012), which involves asking participants to verbalize their thoughts and actions while they are solving the tasks. By doing so, the designer can understand how participants think and plan, what their expectations are, as well as understanding their problem solving strategy.

After the test scenario, participants are usually given the well-established System Usability Scale (SUS) questionnaire (Brooke, 1996), which contains ten statements that measure the participant’s subjective assessment of the usability of the tested system. The SUS questionnaire uses a Likert scale to measure responses, ranging from “disagree completely” to “agree completely”. The scale may either include five or seven response alternatives.
The results (Brooke, 1996) for each individual participant are calculated by attributing a score to each of their answers. Then, for odd statements the value 1 is subtracted from the participant’s answer score. For the even numbered statements the participant’s answer score is subtracted from the value 5. This results in a statement score between 0 and 4 for each question. These scores are then summed up and multiplied by 2.5. This leads to a SUS score between 0 and 100, which should not be confused with a percentage value. The meaning of the score has long been studied (Bangor, Kortum, & Miller, 2008) and has shown that a score in the 90s indicates exceptional design. Scores in the 80s indicate good design, while every score below 70 indicates bad design. However, recent studies by Bangor, Kortum and Miller (2009) show a slight shift which describes scores in the 90s as best imaginable, scores in the 80s as excellent and scores in the 70s as good, while everything below 50 is described as ok, poor, awful or worst imaginable.

The SUS questionnaire has proven itself to be a reliable measure for usability (Foley, 2007) as it is defined by the International Organization for Standardization (ISO). Its regulation ISO 9421-11 (1998) describes the ergonomic requirements for office work with visual display terminals (VDTs), with special focus on guidance on usability. ISO 9241-11 (1998) determines how to identify the information necessary for usability of a system. Here, usability is described as the “extent to which a product can be used by specified users to achieve specified goals with effectiveness, efficiency and satisfaction in a specified context of use.” (p. 3.1) Effectiveness is further described as the “accuracy and completeness with which users achieve specified goals” (p. 3.2), whereas efficiency is equal to “resources expended in relation to the accuracy and completeness with which users achieve goals” (p. 3.3). Lastly, satisfaction is described as the “freedom from discomfort, and positive attitudes towards the use of the product” (p. 3.4).

To understand if users with different player types regard the gamified system as usable, their player type has to be determined. There are no other questionnaires for this available at the moment, except for the HEXAD gamification user type questionnaire, which recently has been developed by Marczewski (2015). This questionnaire consists of 30 statements with which the user can agree or disagree on a 7-point Likert scale. Each statement represents one of six different player types – ranging from socializer, philanthropist, free spirit, player and achiever to disruptor. Each answer on the Likert scale is attributed a value, ranging from the most negative answer (entirely disagree) with a value of 1, to the most positive answer (entirely agree) with a value of 7. The user’s answer value for each player types is summed up, resulting in a total value of 35 at maximum (100%).
4 METHOD

The following sections describe how previously presented methods were implemented for the development of a gamification concept. To be able to design a meaningful gamification experience for the user, which also aligns with Briteback’s marketing goals, the following questions were examined:

a) What does Briteback’s marketing strategy look like?

b) What kind problems arise for office workers from digital communication and collaboration?

c) How is Briteback’s app structured and how well does it solve the user’s problems?

First, Briteback’s marketing strategy has been analyzed by studying business documentation (see page 25), as well as the information given on their homepage, with the goal of gaining an understanding of what business goals can be supported by using gamification.

To understand the user’s problems a non-formal literature study has been conducted (see page 28), which focused on how office workers manage their digital communication to be keep track of their tasks and how they feel about digital communication. It should be mentioned that the purpose of this pre-study was not to conduct a formal literature study. The literature used was provided by the stakeholders of Briteback, as these were used for developing the company’s business strategy.

The results from the literature study of user problems have then been used to formulate user requirements (see p. 31). Thereafter the messaging app has been analyzed with focus on its features and what the user is able to do in the system (see page 31).
Following this, the user requirements have been categorized and matched onto the available features to evaluate how well the app fulfills the user’s requirements and to gain a deeper understanding of what parts of the system could benefit from being gamified (see page 39).

**Figure 06: Overview of the individual method stages used for developing the gamification concept.**

Next, the design process started with an unstructured brainstorming of all ideas that had come to mind by then, and developed in parallel with the process of gathering requirement. Sketches were produced (see attachment 12.2) with the help of a sketch book and a selection of coloured pencils.

The most promising sketched ideas have been marked in a green color, and decisions have been made visible with an exclamation mark. Ideas of such kind could be those which were regarded as being implementable or ideas which followed common usability guidelines, interesting ideas, and so on. Important to know is that the evaluation of ideas’ advantages and disadvantages is purely based on the designer’s knowledge within the field of interaction design and user experience design, as well as the theoretical knowledge about gamification and the requirements gathered.
The least promising ideas have been marked in red, and ideas to be abandoned have been marked with the word No. Wherever there are question marks in the sketches, there were uncertainties about an idea that had to be solved in order to be able to further explore this certain idea.

The sketched ideas have been regularly discussed with the stakeholders of Briteback, in order to achieve a mutual understanding of the design.

Despite sketching with paper and pencils, some sketches have been produced with the Microsoft software PowerPoint for presentational purposes.

After having sketched possible ideas and solutions these were used to design mockups with the wireframing software Balsamiq, in order to illustrate the elements included in the gamification concept.

After the design process, two digital prototypes have been developed with the help of the wireframing software Balsamiq. For the prototypes, mockups were created which visualize the different stages and elements of the gamification concept. All mockups were then linked together with the help of hyperlinks. Finally all interlinked mockups were exported to two clickable PDFs.

Lastly, the developed gamification concept has been tested on 12 participants (eight male and four female) who fit Briteback’s target audience of early adopters. Each participant was presented with the two earlier described prototypes, as well as six tasks which were used to gain an understanding of the participants’ interaction with the gamified experience. After having completed all tasks, users were given the SUS and HEXAD questionnaire. In the following section, the usability test scenario will be described in further detail.

4.1 Requirements

The following three sections present the results for the gathering of the business, user and system requirements, on which the gamification concept will be based. This chapter opens with the results from the evaluation of business documentation, followed by the results from the literature study for the user requirements and the app analysis. Each section concludes with a summarized requirement specification.
4.1.1 Business requirements

Briteback is a start up company which has been founded in 2015. It launched its app in November 2016, which makes the company a new competitor on the market. The business strategy for 2016 focuses on raising awareness about the app, as well as converting visitors on their homepage into customers. A feature analysis of Briteback’s direct competitors revealed that none of those use a gamification strategy to improve their users’ digital communication and collaboration, at the time this report was written (Weströöm, 2016).

![Image of Briteback’s marketing strategy model]

**Figure 07: Briteback’s marketing strategy model.**

**Awareness**

Briteback targets a worldwide audience (Åberg, Briteback Business Plan 2016 - v.4, 2016) which can be described as *early adopters*, meaning that these people are prone to adopting new techniques before most people do. The company anticipates that this user group can be found in the IT industry, therefore targeting their marketing campaigns towards people working on all kind of IT projects, reaching out to developers, designers, IT project leads and so on. Due to these people working with technology on a daily basis the app is developed for people who are anticipated to have *good* to *expert* computer skills (Åberg, Verticals - Development teams, 2016). Briteback is also approaching the educational and research sector by addressing teachers and scientists who could benefit from digital communication and collaboration (Åberg, Verticals - University Teachers, 2016). Briteback’s marketing strategy (Åberg, Briteback Business Plan 2016 - v.4, 2016) includes several ways to gain potential user’s attention, both online and offline. The company advertises and posts editorial content in social media, as well as on their website’s blog.

The marketing strategy (Åberg, Briteback Business Plan 2016 - v.4, 2016) further includes cooperation with traditional media (print media, TV, radio, etc.) and web editors (blogs, internet magazines, podcasts, video casts, etc.). Offline marketing strategies include events like workshops, as well as attendance at industry fairs and networking events.
Consideration
To stimulate consideration to sign up for a free Lite account, Briteback relies on its website (Åberg, Briteback Business Plan 2016 - v.4, 2016), which should provide the potential user with all necessary information and an intriguing service presentation. When it comes to stimulating consideration for upgrading from a free to a payment account, Briteback is working with product virality (Åberg, Briteback Business Plan 2016 - v.4, 2016), meaning that the app’s features are designed in a way as to promote the app to non-users, or users with a free account. For example, users can make external voice/video calls to people belonging to another team or who are not yet registered on Briteback. This way app specific features can reach out to non-users and raise interest about the app, which can lead to consideration of registering an account. Most importantly all features are being constantly evaluated to improve usability and user benefits.

Figure 08: Briteback’s marketing strategy model.

Lite & Plus
At the time this report was written, Briteback offers its users four different accounts (Pricing, 2016). The Lite version of the app is free and includes email, chat and video calls, as well as a calendar and cloud storage integrations. Teams of all sizes can use this version, but are restricted to 5k regarding their searchable chat history. Users can also connect project management and customer relation management tools to the app.

Business & Enterprise
The Business account (Pricing, 2016) is offered at a cost of USD 15 per user/month and allows users to tailor the app to their business structure. This includes a communication policy set up, an internal info channel and a company cloud storage integration. However, the Business account is not fully set up yet, with many features still in development.
The Enterprise (Pricing, 2016) account includes everything in the Business deal, but also offers its customers to make special demands which are then developed by Briteback’s team, specially tailored to the user’s needs.

While the Lite and Plus (Pricing, 2016) accounts focus on communication and collaboration within a team, Business and Enterprise also enable users to communicate across teams.

**Integrations and Power Ups**

At the time this report was written, Briteback was re-designing its business model (Åberg, Briteback Enterprise Redesign, 2016). In the future, users will be able to use all app features when signing up for a Lite account. However, functionality of these features will be limited in one way or another, giving users extended access when upgrading their accounts. It is most likely that the future business model will only include the chat and the internal voice/video as its core features. But, so far the business model has just been roughly sketched and its final shape cannot be foreseen yet.

To summarize, currently the app is being developed with a focus on the Lite and Plus version, while the Business version is still largely underdeveloped, which means that it cannot be included into the gamification concept due to too many uncertainties. As a consequence the gamification concept can only focus on the individual user within a team, as most team related features – such as communication across teams – are included in the Business version of the app. This naturally shifts the focus of the gamification concept to the Lite and Plus version of the app, as well as focusing on assisting Briteback in their marketing efforts of raising awareness.

**Therefore, the gamification concept will:**

1. Assist Briteback in their marketing strategy to raise awareness and increase the level of consideration for registering a Lite or Plus account.
2. Assist Briteback in their marketing strategy of raising awareness and increase the level of consideration for features that manually have to be connected to the app by the user.
3. Focus on addressing the individual user, as most team features are still largely underdeveloped.
4.1.2 User requirements

Literature regarding problems that occur with digital communication has been studied, with the aim of assessing the user’s requirements. The results show that information overload is the biggest obstacle for office workers to be effective and productive. With an increasing amount of received emails, office workers are forced to switch their attention between several tasks, as most of today’s emails convey important work related information. Furthermore, office workers allow themselves to continuously check incoming emails as quickly as if they had to answer a phone call. As a consequence of this the average office worker gets constantly interrupted in his/her work and is losing time for effective work. This in its turn leads to increased perceived stress levels, which decrease the office worker’s ability to cope with information overload.

![Diagram: Interpretative model of problems that arise from information overload.](image)

**Figure 09: Interpretative model of problems that arise from information overload.**

**Information overload**

Dabbish & Kraut (2006) define information overload as the user’s perception of their email usage, which has seems to have become unmanageable. Users receive more emails than they can handle, find or process effectively. Interestingly, this definition was given in 2006, with newer studies showing that this has increased the past couple of years.
In 2014, a qualitative study (Grevet et al., 2014) has been conducted on Google Gmail which showed that users are overwhelmed with the amount of emails they receive on a daily basis. Indeed, the scientists state that the email amount in user’s inboxes has doubled with approximately 3000 emails since 2006. An explanation for this could be that users nowadays write and receive emails both privately and for business purposes. Also, users struggle with managing emails by determining their status, such as to do, to read or important. Grevet et al. (2014) call this the classification problem, which describes the cognitive workload that arises from the user’s perceived need to categorize emails to be able to keep track of their communication. In other words, users also feel overwhelmed regarding the status overload of emails.

Grevet et al. (2014) also showed that users who do not organize their emails have a larger amount of unread emails in their inbox, which results in users being stressed about not being able to keep up with their communication. Another drawback is that an increased amount of unread emails may lead to the user missing information from other individuals in the organization.

**Multitasking and work interruption**

Through communication working tasks are distributed and generated. As previously mentioned, Belotti et al. (2005) argue that people organize their working tasks through email management, by categorizing those, as to do, to read, undefined, important, and so on. But it is not always easy for users to identify the category to which an email belongs. Also, users who do not organize their emails experience the problem of an increased memory workload. Users would have to remember where work related information is to be found or who had answered when to whom about what. According to Belotti et al. (2005) users are at risk of forgetting important information, spending precious working time on searching for information. All this worsens when users have to manage interdependent tasks, which involve at least on other individual on who the receiver of the email is dependent on to be able to finish a task.

Belotti et al. (2005) argue that the more interdependent tasks an individual has to manage, the sooner they feel overwhelmed by incoming emails. Also, the more users who contribute to an email conversation and the longer an email thread gets, the higher is the user’s perceived workload. Also, the more time passes between answers from all participants within the thread the more difficult it is for users to remember what has been stated earlier in the conversation.
The researchers (Belotti et al., 2005) also observed users constantly multi-tasking between several active emails and switching their attention between different kinds of software, at the same time as they monitored the incoming flow of emails. For example, for each new incoming email the office workers were seen to open, close or re-arrange opened desktop windows, such as email programs, web browsers or calendars.

Jackson, Dawson & Wilson (2001) examined the cost of email interruption at work places. They argue that office workers react to incoming emails as quickly as if they would have answered an incoming telephone call. 70% of all incoming emails were reacted to within 6 seconds, whereas 85% of all incoming emails were reacted to within 2 minutes. Each time office workers allowed themselves to get interrupted by an incoming email, it took them approximately 1 minute and 44 seconds to open the email, due to software multi-tasking. Furthermore it took them 6 seconds to shift their attention from the email back to their task at hand, and even longer to reach the same efficiency with which the task had been conducted before the working process had been interrupted.

With regard to the amount of incoming emails each day, the conclusion can be drawn that office workers lose a lot of effective working time, due to constantly checking their emails, as well as having to multi-task different kinds of softwares and because feel they need to spend time on categorizing their emails.

Jackson, Dawson & Wilson (2001) also found that office workers increased their working tempo after having been interrupted in their work, as a consequence of the perceived pressure to work up lost time. This led to an increased cognitive workload, stress, frustration and pressure of time, which ultimately altered office worker’s working pace, working strategies and mental states. There is a wide range of studies (Kompier & Cooper, 1999) which examined the negative outcomes of stress on mental health, productivity, efficiency and operational rationality. It is not unlikely to assume that increased stress levels lower office worker’s ability to cope with information overload. Therefore it can be concluded, the more office worker struggle to keep up with the constant flow of information, the more they are at risk of becoming unproductive and burning out. This of course will have an impact on a company’s success, as information distribution is crucial to organizational performance (Mark, Gudith, & Klocke, 2008). The more people an organization employs the more individuals are involved in sharing information – hence, the more information is produced and distributed. If information sharing is not structured in a way that reduces employee’s mental workload enterprises are at risk of becoming uneffective and unproductive at the cost of their employees mental health.
**User requirements specified**

With regard to the user’s requirements (see attachment 12.1 for detailed specification) the gamification concept shall:

(4) Help users minimize communication related stress, so they can better cope with information overload.

Also, with regard to the business requirements, the gamification concept shall:

(5) Help users to minimize workload, by educating the user how to most effectively use the app’s features for improved digital communication and improved mental health.

**4.1.3 System requirements**

Briteback is an online based messaging app for teams and enterprises, which allows its users to digitally communicate and collaborate. The app can be described as a platform for cooperation between several individuals and teams. Its main features are include a chat, email, voice/video and calendar (figure 10).

![Figure 10: Model of the app’s features and their main functions.](image-url)
Aside from these four main features – which can be regarded as standalone communication media – there are other features that promote team communication and collaboration, but which cannot be described as two way communications tools in a direct sense. These features include a unified search, availability status, file storage and sharing, communication policies and the integration of social media, project management tools (PMT) and customer relationship management tools (CRM). These features span over several of the main features and cannot be used alone. Figure 11 illustrates the expanded structure of features in Briteback.

Figure 11: Model of the extended app structure of features in Briteback.

However, as described earlier, Briteback’s future business model foresees a shift to viewing the chat as the core feature of the app. The remaining features will either be excluded from the default version of the app or they will be limited in one way or the other. As the business model is not fully developed yet, the focus on evaluating the app’s features with regard to the user’s requirements has mainly been on the chat feature. The remaining features have been evaluated in their overall functionality in order to gain a deeper understanding of the app, but the user’s requirements have not been matched to them. It should also be mentioned that the chat has been evaluated with regard to the Lite and Plus account only, according to the previously determined business requirements.
Chat

The most important app feature is the chat function. Users can communicate with each other in public channels, where content can be viewed and contributed to/by all users within a registered team. Private channels can be described as closed channels, to which only invited team members have access. Direct messages serve 1-to-1 communication between two individuals only.

Figure 12: Different kind of chat channels available in the app.

In the chat, users may send messages to each other, but also share files, emails and links. Furthermore, users can connect project management and customer relationship tools, as well as social media accounts, whose purpose will be described in the upcoming section about integrations (see page 36).

Also, users can refer to each other by mentioning their co-workers username in connection with the @-sign (e.g. @username). Every mention is displayed in a special chat channel where each individual user can see who has referred to them on what topic.
Figure 13: Screenshot of the chat screen showing public and private channels, as well as direct messages in the left column; the active chat in the middle section of the screen and the chat directory in the right column. It shall be noted that screenshots which are used to illustrate the app features do not belong to real users of the system. For the purpose of this study test accounts have been registered and communication between those test users has been staged.

The evaluation of the chat feature shows that it only partly enables the user’s need to work with organized information and qualitative information. Only if the chat is correctly used it will enable users to stay on top of information exchange and provide the transparency they seek.

It can be presumed that the chat is preferably used for internal communication among team members, which allows them to quickly provide feedback on each other’s messages. Also, users can easily follow up who said what at which time, simply by checking each message’s meta data which is displayed alongside with the message and the user’s avatar. Furthermore, the user can check what files have been uploaded and shared in the chat by using the chat’s file directory.

However, it cannot be guaranteed that the chat is used in the right way. For example, information may get stuck in direct channels, whereas they should be shared in certain public or private channels. Messages can also be ignored and left unanswered, regardless of which channel they have been written in.
Furthermore it can be presumed that it is common for users to miss information in extensive chat threads with several participants. Messages risk getting drowned out by many other messages, as more and newer messages get stacked upon each other, pushing older messages further down the thread. Also, there is no transparency regarding whether chat participants actually noticed their team member’s messages, as there is no like function or other message labeling provided. However, this could be of importance especially for team leaders and managers who need feedback about who they reached with their messages, without needing to address an issue with every team member individually. The risk of missing information increases when chat participants do not use the comment function to respond to each other messages. This results in information chaos, rather than information being structured in threads, making it very difficult for users to see who responded to what.

As stated in the user requirements, users also want to work with relevant information. Even though the chat allows users to set up channels according to their needs, it cannot be guaranteed that users write messages that are valuable to their team members, or that they post them in the right channel.

Email

Email integration is a central part of Briteback’s app which enables users to connect email accounts such as Gmail, Microsoft Exchange and Office365. Users may send and receive emails, reply to one or several recipients, forward emails, as well mark them as favorites or as done. Also, emails may be deleted or organized in personal folders. Email conversations are organized in threads and users can share their emails to public and private chat channels, as well as direct messages.

Calendar

Just like for email, users can connect their calendars to the app (Gmail, Microsoft Exchange and Office365) to plan, create and view events or schedule voice/video online conferences. Events can be edited and the updates are distributed by email notifications to all invitees. Also, users can announce if they are attending an event by confirming or cancelling their participation. Individuals who have been invited to an event will receive an email with the event specification and are enabled to view the attendee list.
Voice/Video

The voice/video feature can be used to make internal calls within the team, as well as for external calls to non-registered users who will receive an email with a web link to the call. Also, participants can be invited individually or as part of a whole team. As previously mentioned, voice/video calls can be scheduled in the calendar.

File sharing

Users can choose to connect the cloud storage service Dropbox to the app, so that files can be shared as virtual paths in the chat or email, meaning that instead of sending the file as an attachment, the app generates a link which includes the path to the document’s position in Dropbox. Whenever a file gets updated in Dropbox, all users with access permission to this file receive an update notification. Users can also share website links, Youtube videos, Giphy memes, Wikipedia articles and much more within the chat. This can be done either by posting a link in the chat or by using the slash command (see figure 44a, p. 70), which offers the possibility of embedding information automatically.

Integrations

Users are given the possibility to connect several kinds of integrations to the app. One of the most important integration is the project management tool Trello, which allows users to transform chat messages into tasks, which then can be shared with other users. The integration also enables users to ascribe responsibilities to tasks, as well as to set deadlines for them and to monitor their progression by setting up a so called Trello stream in the chat. Also, users may connect their Twitter account to the app, which allows them to transform chat messages into social media posts, as well as to monitor social media content, such as Twitter hashtags. Furthermore, with the help of integrations, users can share their location, YouTube videos, Spotify albums and songs, but also Giphy images and much more.
Unified search
The search feature in Briteback enables users to search through all email and chat content, except for file names or calendar events. At the time this report was written the search feature was still not yet fully developed.

Status settings
In Briteback users can choose to display their current availability status. If users do not want to be interrupted in their work or otherwise are absent they can change their status from available to busy. By doing so, users will not receive any notifications about incoming chat messages or emails. If users are taking time off from work, they can change their status to on vacation. In both cases, users may leave a status message for the chat and/or an email auto-reply to let co-workers or business partners know that they are currently unavailable.

Communication policies
Part of the business account of Briteback is the integration of communication policies. Users may choose default policies from a library or implement their own. For example, users may set a personal character limit for the recommended maximum email length or use the default setting of 1000 characters. By activating this policy the app will count and display how many words have been written in an email. When the recommended maximum email length is about to be exceeded the app warns the user and asks if this email shall be sent anyway.

The business account also allows users to try communication policies to different roles in the company, which makes it possible for the administrator of a team to choose if this policy shall apply to all team members or only some. However, as earlier mentioned, the business account is still underdeveloped, with the recommended maximum email length being the only available communication policy at the moment.
Social components

The analysis of app features clearly shows that they lack social components. The app’s focus is on functionality, regarding structuring digital communication and collaboration, but the user’s themselves are missing. For example, except for their avatar and username there is no personal information available about registered users. As previously argued the most common and predominant player type is the socializer, which makes social components very important. Moreover studies within team management (Hewstone, Stroebe, & Jonas, 2013) show that group performance is highly depended on what kind of people are brought together. Therefore, users’ personalities should not be ignored.

System requirements specified, with special focus on the chat

According to these findings, the gamification concept shall include...

(5) ...mechanics that promote message sharing across channels and among team members, to prevent information from getting stuck in channels and to increase communication transparency.

(6) ...mechanics which help the user establish the habit of commenting on other’s messages, to enable the app to properly string together chat messages in distinct threads.

(7) ...mechanics that foster the use of integrations like project management and customer relationship management tools in connection with the chat.

(8) ...mechanics that bring co-workers closer to each other by revealing something about their personality.
4.2 The Milestone Concept

Figure 14: Photo of the sketch book and pens used for the design stage.

As a result of all iterations\(^2\) of sketched ideas the Milestone Concept has emerged, which has the purpose of introducing Briteback’s features to the user, as well as to promote and foster beneficial usage of the app and to assist Briteback with its marketing strategy – with regard to previously gathered requirements.

The title for this concept has emerged because it is based on the calculation of quantitative tasks, which are rewarded in one way or another once a certain milestone is reached.

The following sections in this chapter will describe the framework of the Milestone Concept, followed by a presentation of the game mechanics, set up mechanics and progression mechanics, according to Robson, Plangger, & Kietzmann’s (2015) MDE framework. Lastly the game dynamics and anticipated emotions are accounted for. For each part of the framework it will be described what player types are most likely to be interested in it.

\(^2\) See attachement 10.7 for the preceding design concept, called the Educational Model.
The gamification framework

The concept’s framework includes Briteback’s website, the app itself, the company’s social media accounts and the players of the game. Each of these parts will be accounted for in the following sections.

![Gamification framework diagram]

**Figure 15**: Gamification framework illustrating the involved parts of the system.

**GAME MECHANICS**

The *Milestone Concept* lets users collect four different types of badges which are accompanied with informational value. The more badges a user has collected, the higher the likelihood for the user to appear on a leaderboard. If users are rated among the top 20 players with most badges, they are invited to join a VIP club, which allows them to gain early access to new features. They are also given the chance to actively influence the way Briteback develops its features. Furthermore, users in the top 20 positions on the leaderboard are given the chance to present themselves and their work on Briteback’s blog by writing a guest article, or by being interviewed by Briteback. Lastly, users may share their achievements on their personal social media accounts, such as Twitter or Facebook.
SET UP MECHANICS: Players

The *Milestone Concept* is a single player game, where each user plays for themselves. The concept enables users to play on two different levels. Individuals who have registered an account, but who have not invited people to their team yet, can explore the game on their own and compete against other individuals (see figure 16). Once users have invited other people to their team, or are invited by someone else to join an existing team, they may also compete with each other within their team (see figure 16).

Figure 16: The illustration to the left shows individual users competing against each other. The illustration to the right shows users competing against each other within their own team.

Earlier versions of the gamification concept suggested that also teams could compete against each other, e.g. different departments within an enterprise. However, problems arise when teams of different sizes compete against each other by collecting badges. If the total amount of badges is the goal of the game, then teams with more members would have much higher chances of collecting more badges compared to competitors with fewer players.

If instead the goal was that all members of a team collect all of the available badges (making the team the winner who achieves this goal most quickly), then small teams would be at advantage compared to larger ones, because they have a greater chance of communicating more quickly with each other. The more individuals there are on a team, the more complex communication gets and the more get motivational work would be needed to encourage all team members to play the game.
It can be concluded that the more team size varies, the more complex the game mechanics become, with increasing comparison difficulties. To engage teams of different sizes in a competition, challenges other than focusing on the amount of collected badges should be developed, which enable all competitors to play on equal terms.

**SET UP MECHANICS: Settings**

The game settings enable users to decide on which terms they want to play the game. The settings can be found under *Account & Profile* in the *Settings* section (see figure 17), which is displayed as a cog icon in the right corner of the top navigation of the app, and where the users generally manage their account (e.g. setting a password, uploading their avatar, connecting integrations, and so on). To ensure users’ autonomy and giving them control over the game, they may decide for themselves whether they want to play the game, as well as if they want to compete against other individuals. Users can choose if they want to make their achievements public on leaderboards and thereby to other users.

![Figure 17: Settings pop-up where users can choose the terms of collecting badges and playing privately or publicly.](image)
By providing the option to play privately or publicly, different player types can be addressed. Achievers, players and killers are extrinsically motivated and enjoy the attention they gain from other players for their achievements, while intrinsically motivated player types, like explorers, free spirits and philanthropists preferably play games for their personal pleasure, which does not necessarily require appraisal from others. Users may also decide if they want to receive push notifications about their badge achievements and whether they automatically or manually want to share their achievements on their social media accounts. The reason for these settings is the fact that although the game should be promoted, it should not interrupt users in their work. By providing the user with game setting options, each player can use the app on their individual terms. However, to promote the game and to make newly registered users aware of the possibility to collect badges, the game is activated by default, as well as achievements are made public on the leaderboard (see page 56) and push notifications (see page 68) automatically appear in the app. By doing so, users’ needs to manually turn the game off if they do not want to collect badges. If users deactivate the game a pop-up window appears double checking with the user if the action was intended and making the user aware of the amount of collected badges which will be lost, once the game is turned off (see figure 18).

Figure 18: Pop-up window double checking if the user really wants to quit playing, making him/her aware of the amount of achievements that will get lost.
This pop-up includes two action options. The highlighted button in green promotes the option of continuing playing, while the grey, less notable button, allows the user to quit the game. Usually the preferred action is highlighted, rather than the other way. However, these decisions have been made to make it slightly more difficult for the user to quit the game, as the goal is to gain as many players as possible to achieve the desired goals with the gamification concept. Of course, making it difficult for the user to quit should not be the only reason why users keep playing – this functionality should be merely seen as an intervention of unconsidered choices, giving the user the possibility to re-think their decision of quitting the game. Also, this enables the app to only store information for active players, thereby minimizing the amount of data storage. It can furthermore be anticipated that users who once decided to quit playing want to resume playing after a while. It is not unlikely that users start playing again when they realize that some of their peers or colleagues are playing, or that they have heard others recommend the game. So, if the user decides to start playing again after a while he/she will have to start at the very beginning, re-earning all previous achieved badges.

PROGRESSION MECHANICS: Badges

Users can earn four different type of badges (see figure 19) which differ in the meaning of their purpose, as well as how common they are and how easily they can be earned. By collecting badges user can climb up the leaderboard and gain a top position, as well as become VIP club members.

Figure 19: Illustration about the four badges types, indicating how common they are and how easy or difficult they are to achieve. Action badges are the most common badge type.
Action badges

Among badges that can be earned, so called action badges are the most common badge type. Their purpose is to make the user aware of the app’s different features and they can be earned simply by interacting with the app and one’s team members (see figure 20). Each feature in the app comes with its own badge set, which can be earned once the feature is connected to the app. Some of the features, like the chat are available to each user from on the moment they register an account, whereas the use of other features has to be integrated manually, e.g. the integration and use of the project management tool Trello. Action badges may have a tutoring character, educating users in how to use the app, as well as how to most effectively use the app. Some action badges make this purpose explicit, while others implicitly promote user beneficial behavior, by rewarding different amounts of quantitative action repetitions (see figure 20 and attachment 12.3). Action badges differ with regard to how difficult it is to earn them, resulting in some badges being more easily and more often achieved than others. The reasoning behind this is to provide different challenge levels so that users can find and earn badges that match their individual need for challenge, and by doing so, keeping players motivated.

Figure 20: Examples of different Action badges, with rising levels of difficulty purely for illustration of the Milestone concept. According to the business requirements no complete badge system could be developed. However, some suggestions have been made regarding badges that can be earned for using the chat (see attachment 12.3).
Each action badge has a unique design and carries a title that reflects which tasks need to be done to achieve the badge or represents what informational value the badge contains (see figure 21).

![Figure 21: Examples of action badges. From left to right: welcome badge, socializer badge and endeavor badge.](image)

While it may differ for users what kind of badges they collect, the welcome badge is earned by default by all users for registering an account. The welcome badge is an introductory badge carrying information about the game rules. It describes the four different badge types, as well as the leaderboard and the VIP club membership. Its purpose is so make users aware of the game and inform about how it works. To make the game experience more personal, each user is welcomed with their name.

There are several ways for the user to learn about each badge’s value. Users may click on each individual badge on the badge board (see page 57) or other users’ profiles (see page 70) to gain more insights. Users may also click on push notifications (see page 68) to learn more about their achievements.

When the user clicks on a badge on the badge board or uses the push notification, a pop-up window will appear on the screen displaying the badge’s informational value and what has been done, alternatively still needs to be done to achieve it (see figure 22). Each badge pop-up, except for the welcome badge, also informs the user about how many players have earned this badge so far. This knowledge can be used to play strategically and makes badges which are difficult to get more attractive.

The welcome badge does not include this information because it would reveal how many registered users there are in Briteback, and should be handled carefully during the first years of the company’s existence. A large number could add extra value to the app. However, a low number could have the opposite effect.

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3 When users sign up for an account the app automatically extracts a possible username from the registered email address.
Figure 22: Welcome badge pop-up window informing the player about the game rules.

Also, all available action badges are displayed to the user on the badge board (see page 57). Action badges can have three different states. They may be either unlocked, locked or earned (see figure 23).

Locked badges are not available to the user because they belong to a feature which has not been connected by the user yet. These badges are marked with a question mark icon, which aims to make the player curious about them. The user may click on these badges to learn more about the feature they belong to (see figure 24).

Unlocked badges on the other hand are badges which can be earned by the user, but he/she has not started yet to complete the tasks which are attached to them. Unlocked badges are displayed with their unique icon and form, but are not colored yet (see figure 23).

Earned badges are simply badges which have been earned by the user and are displayed completely colored (see figure 23).
Figure 23: Action badges three different states. To the left: A locked badge which cannot be earned yet. In the middle: the unlocked socializer badge which can be earned. To the right: the earned socializer badge.

Figure 24: Display of a locked badge belonging to the Survey PowerUp feature, which is currently under development.

By not making all badges available to the user from the beginning, users are explicitly made aware of features they may not know about yet. Also, they may gain a better understanding of what they can do in the app so far, playing the game step by step and not being overwhelmed by a huge amount of possible badge achievements.
Player types which are addressed by this may be explorers and philanthropists who like to get to know all aspects of a system or game and gain insights which they can share with others. Also, achievers who want to conquer a game might be triggered to connect more features to the app to be able to earn all badges. Free spirits, who seek self-expression can choose among all kind of badges which ones they want to profile themselves with. Players might collect badges merely for the rewards they lead to (see page 54).

Once a badge set is unlocked users can start to earn them by fulfilling the tasks that are associated with each badge. To be able to keep track of their progress, users can monitor the different progress stages an unlocked badge is displayed in (see figure 25). Grey badges symbolize badges which are unlocked but where no task has been completed so far. The more tasks are completed for each badge, the more the badge gets filled in with its color. Badges which are completely colored symbolize earned badges.

According to previously mentioned motivational theory, by providing feedback, players who are closer to their goal make greater efforts to quickly achieve it. Therefore unlocked badges are gradually filled in with color, the more badge specific tasks a user has completed.

The process of coloring activated badges happens automatically, which also means that once the user has started interacting with the app, there will be one or more action badges that are automatically partly earned. This means, users do not necessarily need to actively decide which badge to collect, as they will receive these automated suggestions.

This way, user’s attention will be drawn to the partly colored badges and made aware of them, because they are more salient than grey badges. This method also allows less active players to make achievements even though they are not actively playing. Active players on the other hand can play strategically.

**Figure 25:** Display of the different progress stages an unlocked badge can be in. To the left: The unlocked socializer badge. In the middle: 1/3 of the socializer badge have been achieved. To the right: The badge has been completely earned.
Loyalty badges

*Loyalty badges* (see figure 26) are badges which cannot actively be earned by the user, but which are rewarded to them for their engagement and commitment to the app over time. Loyalty badges are rewarded to the user for each year he/she has been registered. The purpose of loyalty badges is to show appreciation to the user for their commitment, as well as providing users with a sense of time, for how long they have been part of a certain team and what they have achieved so far.

![Example of the spree day badge](image)

*Figure 26: Example of the spree day badge – a loyalty badge rewarded for the user’s first anniversary in the app.*

Explorer badges

*Explorer badges* (figure 27) are the second most difficult badges to be earned, but can strategically be very valuable. The purpose of *explorer badges* is to make users aware of Briteback’s social media accounts, as well as to promote followership. These badges shall also motivate the user to explore the app’s features and functions and to take time to read what is being presented on their homepage. *Explorer badges* are hidden on the company’s website, in the app and appear occasionally on their social media accounts. They do not stay hidden in the same place for too long and the user cannot tell when or where they will appear. In this regard, *explorer badges* differ from action badges as they require Briteback’s marketing department to actively work with them, whereas action badges are automatically set up in the system.

![Example of a possible design for the explorer badge](image)

*Figure 27: Example of a possible design for the explorer badge.*
Whereas all other badges are earned within the app, *explorer badges* can be localized outside the app and have therefore to be secured by bringing them into the app one way or the other. For example, an *explorer badge* might be hidden at the very end of a tutorial video and be secured by clicking on a special link which guides the user into the system. This way the badge could be automatically added to the badge board (see section 61) for users with a registered account. Users who find an *explorer badge* but who have not yet registered would be asked to sign up for an account and be guided through the onboarding process to secure the badge. In each step of the onboarding process the badge would be made visible to keep the user on track and to remind them of their goal of collecting the badge (figure 28 to 30).

![Mockup illustrating Briteback’s homepage with an instructional video being played.](image)

**Figure 28:** *Mockup illustrating Briteback’s homepage with an instructional video being played.*

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4 The onboarding process refers to registering an account, which happens in three steps. First, each user has to enter an email address. Then, they are sent a verification code to this email address, which they have to enter in the next step in the process. Finally users have to set a password.
Figure 29: Mockup of a hidden explorer badge at the end of the instructional video on Briteback’s homepage. By clicking on the link “Get your Explorer badge here” the user will be re-directed to the onboarding process, shown in figure 30.

Figure 30: Mockup of the first step for registering an account. Users without an account are re-directed to the onboarding process together with the badge.
Users who monitor Briteback’s digital appearance and who are actively using the app have therefore greater chances of collecting *explorer badges* than less active users, who are more likely to find these badges only by chance.

User who have collected five *explorer badges* are invited to become lifetime VIP club members (see page 54), due to their commitment of frequently using the app and following Briteback on Facebook, Twitter and Instagram.

This way *explorer badges* can be used strategically by players who want to become VIP members, but who do not have collected enough action badges to position themselves among the top 20 users on the leaderboard (see page 56). *Explorer badges* may therefore be seen as short-cuts, even though they are not easily achieved.

*Explorer badges* are always displayed in a set of five badges to make the user’s progress visible and to spur motivation to collect all five badges (see figure 31) that are needed for a VIP club membership.

![Figure 31: Pop-up badge window showing one of five achieved explorer badges and informing the user about their 20% gained VIP status.](image)
**Explorer badges** are aimed at several player types, such as **explorers** themselves, as they like to discover new features and want to learn all about the game. **Socializers** might be attracted to **explorer badges** because they can tell their peers where they have spotted such a badge and by doing so, bring team members closer to each other. **Achievers** and **players** might want to collect **explorer badges** merely for the tactical advantages of quickly becoming a VIP member, without having to earn a top position on the leaderboard.

**VIP badge**

The **VIP badge** is the most difficult badge to earn and can only be achieved by few people. Most importantly, users may either have or not have a VIP badge and can never own more than one. As long as users are members in the VIP club they own a VIP badge. However, when they leave the club or lose their VIP membership status, the badge will be lost as well. This makes the badge valuable and should motivate users to actively work to keep their VIP status.

Users can become VIP members in two ways. Users in the top 20 positions on the leaderboard and those who have collected five **explorer badges** are invited to become VIP club members. However, users on the leaderboard are only VIP members for as long as they can keep their leading position, while users with five **explorer badges** are VIP members for as long as they have a Briteback account. This is due to the fact that users on the leaderboard can gain a top 20 position already for a small amount of badges, if there are only a few active players in the app. The more players there are, the more difficult it will get to achieve and keep a top position. However, earning five **explorer badges** might be just as hard and also requires the user to publicly follow Briteback in social media and to frequently check their website and use the app. Finding five **explorer badges** requires great commitment and shall therefore be rewarded with a lifetime membership in the VIP club.

Users in the VIP club are given the possibility to gain early access to new features, which are not yet made publicly available. In other words, these users are given the unique chance of using features long before anyone else. Also, besides from being treated in a VIP manner these users will also be invited to actively test these new features and establish a relationship with Briteback which allows them to have influence on the future development of the app. This can be regarded as a win-win situation for both parties. Briteback as a company will have the chance to test their features with committed users of the app, and VIP members may take this chance to help the company to develop a product that fits their needs.
It shall be stressed out that this does not mean that Briteback will ignore non-VIP users’ feedback about the app, but it will focus on establishing a reciprocal relationship with a group of committed users. This could also include offering VIP members access to free webinars, app demonstrations and workshops.

Furthermore, VIP members are given the chance to write articles about their projects, team or work, which will be published on the website’s blog and marketed in the company’s social media accounts. This way, VIP members can promote their business and gain attention by users they might not have reached otherwise. Briteback may also conduct interviews with VIP members and present them on their blog and social media.

To make non-VIP users aware of the possibility to become VIP players their membership status is displayed with a top hat on their avatar (see figure 32). Also, users in the top three positions on the leaderboard are displayed with either a golden, silver or bronze crown on their avatar. However, this will only be the case if the user chose to make their achievements publicly visible. Users who do not want to share their achievements will not be able to receive a hat or crown.

![VIP Gold Silver Bronze](image)

**Figure 32:** Users with VIP status are displayed with a top hat on their avatar, or with a golden, silver or bronze crown, according to their position among the top 3 users on the leaderboard.

It can be assumed that a VIP membership is most attractive to *achievers* whose motivation it is to conquer a game. *Players* might want to achieve a membership merely for being rewarded with early feature access. *Explorers* might want to join the VIP club due to their willingness of sharing their insights and thoughts with others, as well as knowing every aspect of the game. Finally it can be anticipated that *socializers* would enjoy belonging to a special group of people who are bound together through their engagement in the game.
PROGRESSION MECHANICS: Leaderboard

Users who agree to make their achievements publicly visible have the chance to gain a top position on the leaderboard (see figure 33). Here, users with the highest amount of collected badges are displayed with their username, avatar and the amount of badges they have earned.

Also, a trend indicator lets other users know if the player on the leaderboard is on the rise – soon reaching a higher position – or on the fall, losing their position. Rising statuses are symbolized with an upwards arrow, whereas falling positions are displayed with a downwards arrow. Stable positions are shown as a dash. These status changes are calculated daily and based on statistical evaluations of the amount of badges achieved by the user over time, enabling users to play strategically.

Figure 33: Mockup of the leaderboard displaying the top seven positions.
By clicking on the user’s avatar other players are presented with pop-up window (see page 71) containing profile information, as well as which badges the individual has collected to gain this status. It can be anticipated that changes on the leaderboard are more frequent shortly after the gamification concept has been launched in the app, when top positions can be achieved with only a few collected badges.

The longer the app exists and the gamification concept is being used, the higher the stakes get and the more difficult it will be for users to achieve a top position. Users who have been registered for a longer period of time have a greater chance of earning a top position if they are active players. However, users who have not been registered for a long time, but who use the app more frequently have an equally good chances of achieving a top position.

As previously mentioned, users in the top 20 on the leaderboard are invited to join the VIP club and earn a VIP badge for as long as they can keep their top position. Also, users on the top 3 positions are rewarded with a golden, silver or bronze colored crown to make their leading position more salient and to address these player’s uniqueness.

It can be assumed that the player type most attracted to achieving a top position on the leaderboard are achievers, who are motivated by mastering the game. It might also happen that explorers and players can be found among the top players, but this would merely be a result of their engagement in the game, rather than their striving for a top position. Socializers might use the leaderboard for communicative reasons of applauding their fellow team members and talking about achievements, with the purpose of knowledge sharing.

🎉 PROGRESSION MECHANICS: Badge board

A badge board (see figure 34) has been designed for users to be able to learn about their game status, e.g. how many and what kind of badges have been collected so far or information about their individual leaderboard position.
Figure 34: Mockup of the badge board showing the leaderboard in the left column, current achievements in the middle of the screen and the game stats in the right column.

The badge board is displayed in the app’s top navigation as a badge icon and placed next to the app’s key features, which are the chat, email and calendar (see figure 35).

Figure 35: Close-up of the app’s top navigation.
The badge board is displayed by default for all new registered users, due to the game being activated as a standard. If the user chooses to de-activate the game, the badge board icon will disappear from the top navigation. This way, the badge board and the game behave like other integrations that can be connected to the app, and which are only displayed when they are activated. Also, by only displaying the badge board to users who want to play, those who do not, will not be exposed to a feature they do not want to use. With this, the gameplay can be compared to any other feature that is offered by Briteback, with the difference that is activated by default and has to be manually deactivated by users who are not interested in playing the game. It cannot be anticipated how many users choose to (not) play the game, as the author of this report has not found any literature that includes reliable estimates of this.

On the badge board itself users can learn more about the leading top 20 users on the leaderboard. They can also gain information about all available action badges, which are displayed most prominently in the middle of the screen (see figure 36). To enable users to gain insights into specific badges, they may filter among earned badges, unlocked badges and locked badges. When the user filters earned badges, only those which have been 100% achieved are being shown. If the user filters unlocked badges, those which have not been achieved yet, but which are possible to get are displayed. If the user filters locked badges, those are shown which cannot yet be earned because they belong to integrations which have not been connected to the app yet.

Figure 36: Close-up of the achievements section on the badge board, showing the filter function for earned, unlocked and locked badges, as well as the earned explore and welcome badge, the unlocked socializer badge and three locked badges.
The user may click on each individual badge to learn what they stand for, regardless of whether they have been earned, are locked or unlocked. For clicks on earned badges, a pop-up window will open and display what the user has done to achieve them, accompanied with a personal congratulation. Unlocked badges will display what tasks have to be done to earn this badge, and which of those already have been completed. Locked badges will only display information about what integration has to be connected to the app, to be able to unlock and earn the associated badge set.

The achievements section in the middle of the screen also informs the user about each badge’s title, when the badge was achieved and how many tasks for unlocked badges have already been completed. As explained earlier, earned badges are displayed as fully colored, whereas partly achieved badges are somewhat colored according to how many tasks have been completed. Badges with unfulfilled tasks, or badges which are locked, are displayed in grey.

In the right column on the badge board the user can gain insights on various game statistics, which go beyond the achievement of action badges. In the section Your leaderboard position users can learn about their current leaderboard position and see if they are on the rise or falling (see figure 37). They can also read about how they are doing compared to players who have a lower leaderboard position. This shall motivate the user to keep on striving for a better position, as well as providing strategical information and enabling them to make better evaluations about how well they are doing. Furthermore, this gives the user a sense of how many individuals are playing the game.

![Your leaderboard position](image)

**Figure 37**: Close-up of the leaderboard position-box in the game stats column on the badge board.

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5 Not to be confused with how many users there are registered in the app. Also, it is possible that several players share one leaderboard position due to the exact same amount of achieved badges. This means that the number of players is not equal to the number of users of the app.
However, it shall be stressed that the higher the number of players, the more attractive the game appears and the higher users will rate their own performance. On the contrary, the lower the number, the less attractive the game may become and the worse the user will rate their performance. It should be kept in mind that this could be demotivating.

In the section Your VIP status users can see if they are on their way to become a VIP club member (see figure 38). Players who have earned one of five explorer badges will automatically become 20% VIP, with the percentage rising as they collect more explorer badges. Here, they can also read about how many people currently are VIP members.

It can be anticipated that this number will be held low as only a few people will be able to collect all five explorer badges, and only users on the top 20 positions on the leaderboard are invited to join the club. A low number of VIP members shall make the VIP club seem more exclusive, addressing the uniqueness of their members. By making the VIP club exclusive to only a few members this shall help to increase its value as a reward of collecting badges.

**Your VIP status**

20% VIP

Become one of current 22 V.I.P.S.

Figure 38: Close-up of the VIP status-box in the game stats column on the badge board.

In the right column users can also see how many explorer badges have been collected, alongside with brief information and links as to where they can be found (see figure 39). This includes links to Briteback’s Facebook, Twitter, Instagram and LinkedIn accounts, which are displayed as social media icons.
Below the *explorer badge*-section the user can see when they will be rewarded with the next loyalty badge. The section informs users about their upcoming spree day, which is rewarded to the user each year at their registration day. For each spree day the user is rewarded with a badge, which is successively colored the closer the registration date gets. The badge is accompanied with motivating quotes of all kinds. For example, if the user has just been registered it can be suggested that he/she may learn about patience.

The design of the badge board is aimed at all six player types as it has an informational character which can be used for each individual user’s gaming strategy. *Achievers* might use the badge board to learn more about their competitors and their own game status, while *explorers*, *philanthropists* and *free spirits* might use it to determine what they want to learn about the app and the game.
Socializers might use the badge board to inform themselves about other players as well as sharing their achievements with their team members or peers outside the app. Players on the other hand can gain information about how close they are to their rewards, whereas killers and disruptors can use the badge board for strategical planning about what other player they aim to defeat, even if they will not be able to do so without truly engaging themselves in the game.

**PROGRESSION MECHANICS: Sharing badges**

Sharing badges is one of the core features of the gamification concept. By sharing badges within the team chat or in social media, other registered users and not yet registered users shall be made curious about the app and its features. Sharing badges give players the possibility to show what they like or know, implicitly making them ambassadors for the app.

Badges can be shared in two different ways. Users may either share their achievements directly from the badge board or by using the slash command in the chat. On the badge board users can share badges simply by hovering over them (see figure 41). By doing so respective badge will be softly highlighted with a grey background and a share icon appears. It was reasoned that this will make the sharing option more salient as it will be easier perceived due to the motion of the mouse and the appearance of the subtle background coloration. Also, a sharing icon which is constantly visible to the eye for each and every badge, would clutter the view. It is more important to always make the badge’s titles, achievement days and badge status visible as these are core information regarding the game.

When the user clicks on the share icon, a pop-up window will appear that informs the user about the possibility to either share the badge in the team chat or on the user’s social media accounts. If no social media accounts are connected to the app yet, the user is given the option to that, and will be re-directed to the earlier mentioned settings pop-up window (see page 42). Once one or more social media accounts are connected to the app, the user may close the settings window and continue with the sharing process. Depending on which social media account the user chooses to share the badge to, he/she will be able to add a comment to the post. For example, Facebook allows comments to be made additional to the shared content, whereas Twitter does not.
Figure 41: By hovering over a badge it will get highlighted and a share icon appears.

Figure 42: Mockups of pop-up windows for sharing badges. To the left: No social media accounts have been connected yet. To the right: Twitter and Facebook have been connected.
Figure 43: Example mockup of a shared welcome badge on a user’s Facebook profile.

Achievements can also be shared with the team or on social media accounts by using the slash command in the chat, which is displayed right in front of the text input field in each chat channel (see figure 44). The slash command allows users to complete all kinds of tasks, e.g. sharing songs and videos from Spotify and YouTube. In the very same way badges can be shared by tabbing through a sharing wizard.
To share a badge users simply have to click on the slash command icon and then choose to share their achievements. This will in its turn show the user’s earned badges, which can be shared one at a time. When users have chosen their badge of interest, they are given the option to share it in the team chat or on their social media accounts, in the very same way as they are being shared from the badge board (see figures 44a - 44e).

Figure 44: Chat input field showing the slash command.

Figure 44a: Step 1 of sharing a badge by using the chat’s slash command. The user clicks on the slash and is presented with a list of possible actions, such as sharing achievements.
Figure 44b: Step 2 – the user can now choose what badge to share.

Figure 44c: Step 3 – the user chooses where he/she wants to share the badge.

Figure 44d: Step 4 – the user chooses to share the badge to a connected social media account.
Step 44e: Step 4 – in the last step the user has to click the send button to confirm that the badge shall be shared.

When a badge has been successfully shared on a social media account the user receives a push notification in the app confirming this.

PROGRESSION MECHANICS: Push Notifications

Feedback is an integral part of user experience, no matter what action is performed in a system. Feedback provides the user with valuable information for when their actions succeeded or failed. This gamification concept therefore includes push notifications as feedback providers (see figure 45).

Push notifications are small pop-up windows which serve as some kind of alert. They may slide in from one side of the screen or fade in and out. They are small, but draw attention to themselves as the eyes periphery easily detects motion.

In this case, push notifications appear in the lower right corner of the screen and alert the user about currently achieved badges, as well as successfully or unsuccessfully shared badges in social media. Push notifications may also include information about successfully connected integrations and carry information about the unlocked badge set these come with.
Some push notifications carry additional information about an event, which is made visible by an added link to the message. E.g. notifications about currently achieved badges contain detailed information about what the badge is about, as well as the badge design. Those notifications include the link View your badge here, which triggers the appearance of a pop-up window containing respective badge information (see figure 31, page 52). Push notifications are only visible for a few seconds and will disappear automatically, if no action is taken upon them. They can also be closed manually.

As earlier described users can choose whether or not they want to receive push notifications about badge achievements (see page 68).
User profiles

The way the app looked at the time this report was written and the gamification concept was developed it did not foresee any profile page for the user, his/her team(s) or enterprise. To design a fully adaptable profile page has not been possible due to timely restrictions, and as it would exceed the extent of this report. However, it was reasoned that a social component is crucial for the success of the gamification concept, as the most prevalent player type – according to gamification theory – is the socializer. Also, gaining insights about other player’s game status enables users to play strategically, which could be most valuable for achievers and disruptors who like to win the game and conquer other players.

With regard to the restrictions the question was asked how to make other players’ achievements visible, with focus on a players’ team members, and without the need of an alone-standing profile page?

Inspiration came from social media, like Facebook and Twitter, where a click on a user’s avatar often reveals more information about an individual. This concept could be used for the app as well, as user’s avatars and usernames are prominently displayed next to messages in the chat. A concept was designed which enables users to click on their team member’s avatar or username, both in the chat and in the chat’s directory in the right column in the app. By doing so, a pop-up window appears (see figure 46) containing information about the team member’s collected action badges, explorer badges, as well as their current VIP status and leaderboard position. It is also shown for how long the user has been playing the game.
Figure 46: Profile pop-up window displaying a player’s game status.

GAME DYNAMICS

With regard to the game mechanics assumptions can be made about player’s behavior. Action badges may fit all player types as they differ in what tasks are connected to them, as well as in their informational value. Explorers, philanthropists and free spirits might use action badges with a tutorial character to learn more about the app and share their knowledge with their team members. Achievers might collect badges simply to master the game and to become a VIP club member, as well as showing that they are doing better than other users. Disruptors and killers might monitor other player’s achievements on the leaderboard or on the user profile to strategically collect badges and make it harder for their fellow players to gain top positions. In the same way, socializers might more often than any other player type use the user profile as a form of starting conversations around each other’s achievements and checking back on how their team members perform, as well as to better understand what kind of knowledge they can share with other players.

Furthermore, it can be presumed that the VIP club membership is attractive for several player types. Achievers might want to become VIP members, simply as a status declaration of having conquered the game, explorers might want to become a member to be able to be one of the first users who get to test new features and to have an impact on how the app is being developed.
Socializers, free spirits and philanthropists might want to join for being part of a special social group and for sharing their knowledge and giving feedback on new features. It is most likely that a VIP club membership does not appeal as much to disruptors and killers, more than that they might want to reach this goal simply to prevent other players from gaining this membership.

This might also apply for collecting explorer badges. Disruptors and killers cannot gain much from these kind of badges and they cannot prevent others from finding them. Socializers might more naturally be inclined to hunt explorer badges as they are part of social forums like Facebook or Twitter. Also, when socializers have spotted an explorer badge they might use this knowledge to interact with fellow team members and reveal this position simply for communicative reasons. Explorers, philanthropists and free spirits might find explorer badges less attractive, because they do not contain any additional informational value, except for their social character. Also, achievers and players might not be inclined to hunt explorer badges other than for strategical reasons.

Loyalty badges can be described as surprise badges which will be rewarded to players on the day they registered an account. If they are combined with a gift it can be anticipated that players are the ones who are most happy about them. However, it can also be presumed that most people are glad about being shown appreciation for their commitment to any cause.

The leaderboard is most likely most attractive to achievers and players as those types play the game to conquer it and other players. It might also be used by explorers, philanthropists and free spirits to learn more about badge achievements they personally have not made yet, but want to know more about.

Finally it can be anticipated that sharing badges is most suitable for socializers, as well as explorers, free spirits and philanthropists, who all enjoy sharing their knowledge with their peers and who seek communication. Players, achievers, disruptors and killers on the other side will most likely not share badges if it is not required in association with an achievement.

GAME EMOTIONS

Anticipating each player type’s emotions is crucial for the gamification concept to be successful and to achieve its goal to turn users into loyal customers who recruit peers to join their team and the app. In other words, the more fun players think the game is the more likely they choose to play publicly and share their achievements on their social media accounts.
Therefore game elements have been designed which can be presumed to appeal to all player types, with special focus on socializers, philanthropists, free spirits, as well as achievers and players.

The VIP club membership will address the individual sense of feeling special and being unique. Users in the VIP club are also given extra attention, which might give them the feeling of being an important member of the Briteback community.

Users who have collected five explorer badges might feel empowered, as they now belong to a group of only a few members who have made this achievement. Finding five explorer badges is difficult and requires true commitment, which is why it can be assumed that this achievement will be more valuable to the ones who earned it.

The leaderboard also enables players to show off their achievements and gain a sense of strength and admiration from other users who have not yet achieved a top position among the top 20 players. Players in the top 3 positions might also feel special due to wearing a crown which highlights their achievements on the leaderboard and on their team.

If the difficulty level is well balanced, the wide variety of possible action badges also prevents players from developing negative feelings, such as boredom or frustration about too easy or too difficult tasks.

Also, the more players use the app, the easier it will become for them to achieve badges which had been perceived as hard at first hand.

Overall it shall be noted, that the gamification concept also works with a lot of editorial picture material to address to the player’s emotions. The app has so far not used any pictures at all, which makes it seem rather sterile. For example, when users decide they want to quit playing and therefore in-activate the game they are presented with a picture of a crying child and asked if they are sure they want to quit playing. The purpose of this picture is to make the user think twice about his/her decision by appealing to their emotions (see figure 18, page 42).

Another example is the use of photos for each badge type. The explorer badge is presented together with an image of a night sky and a large telescope which represent the badge’s meaning and evoke feelings that remind the user of adventures and conquests. The welcome badge on the other hand shows colorful lollipops which represent the fun nature of the game. By using pictures users might enjoy the game even more as their fantasy is being stimulated.
4.3 Prototype

Two prototypes have been designed which show different aspects of the gamified system. The most comprehensive prototype is designed to simulate what the gamified experience looks like for newly registered users. It contains all the earlier described gamification elements and different stages of the gamification concept (figure 47). In this prototype the user can make three badge achievements – they may earn an explorer badge which can be found on Briteback’s homepage, a welcome badge for registering an account and a socializer badge for connecting a social media account to the app.

Whenever users have earn a badge in this prototype they will receive an interactive push notification which can be clicked upon to learn more about the achievement.

Users are also enabled to either share a badge directly from the chat or from the badge board. Regardless which way they choose, in both cases they will first have to connect a social media account, before being able to actually share the badge. If users choose to share a badge to Facebook they are given the chance to check on a fictive Facebook account if they succeeded. In the same way, they can check their Twitter account if they chose to share a badge to Twitter.

Figure 47: Model of the included elements in the most comprehensive prototype.
However, this prototype does not allow interactions with email, voice/video calls or the upload of files and remaining settings, as those are not gamified. And even though users may change their game settings, such as choosing between playing publicly or privately, those changes will have no effect.

The second prototype focuses solely on the chat and simulates the situation of a registered user who is part of a larger team and has been using the app for a while.

In this prototype the user can only click on other team member’s usernames and avatars to gain information about their game status (see previous figure 46, page 70).

4.4 Usability Testing

In the last stage of the design process the developed gamification concept has been tested on potential users of the app. The following section therefore describe the design of the usability test series, its participants, what materials have been used, as well as how the pilot study and the following tests have been conducted. This chapter concludes with the account of the results.

4.4.1 Participants

A convenience sample of 12 people participated in this usability study, with their age ranging from 22 to 41 years, with an average age of 30.5 years and a standard deviation of 5.46.

To determine whether the chosen participants fit Briteback’s target group of early adopters they were given a short questionnaire with the goal of determining their computer skills and interest in mobile applications, as well as their knowledge about Briteback.

Five of the participants were web developers, four participants were designers, including UX designers, art directors and visual designers. One participant was a public relations officer, and there were also an IT project manager and a student. It has to be mentioned that the web developers were also Briteback employees who have developed the app themselves.

Only the web developers were very familiar with the Briteback app and used it daily, whereas the remaining participants have never used or even heard of Briteback before.
Nine participants stated they worked in teams consisting of six to 10 members, two stated they worked in a team of two to five members and one participant stated to work alone.

All participants declared they were familiar with the concept of apps and used them daily on either iOS or Android mobile phones. Six participants stated that they foremost used the Android operating system, whereas four participants were more familiar with Apple’s iOS. Two participants stated that they used both operating systems daily.

Six participants described themselves as experts with regard to their computer skills, whereas five described their computer skills as good and one participant as ok. With these results all participants were included in this study.

Participants were not offered any compensation or reward for their participation in this study.

4.4.2 Material

The usability study was conducted with the help of the two earlier mentioned PDF prototypes, as well a laptop. 10 out of 12 participants were also presented with an additional larger monitor screen, as the laptop screen was fairly small and the prototypes not resizable.
All participants were handed a printed consent form, as well as the SUS and HEXAD questionnaires (see attachments 12.5 and 12.6). All but one user test have been conducted in quiet conference rooms at different locations, whereas one test was conducted in an undisturbed home environment.

4.4.3 Pilot study
A pilot study with one participant had been conducted in order to measure the time it takes for the tests to be done and to eradicate any mistakes in the test set-up or prototype. The pilot study was conducted in the participant’s home. No changes to the prototype or test situation had to be made, which is also why the pilot test results were included in the study and the procedure kept alike.

4.4.4 Procedure
Before the actual tests could start, each participant had been given a consent form (see attachment 12.4) to fill in. They were also given the possibility to ask questions about the test scenario and were verbally informed about their ethical rights, which are also stated in the consent form. It was explained to each single participant that they would be asked to solve six tasks and thereafter fill in the SUS and HEXAD questionnaires (see attachments 12.5 and 12.6). It was also stressed out that it is not their performance that would be evaluated, but the system’s design. According to the earlier mentioned think aloud-method, the participants were asked to verbalize their thoughts and actions during the test.

Participants were also informed that they could click on everything they believed was clickable in the prototype, but that scrolling was not an option. Furthermore participants were told that if they wanted to fill in any text area they could click on the area to simulate writing.

When the participants had assured the test leader that they understood their rights and had no more questions, an audio recording was started on the test leader’s mobile phone. By recording what was being said during the test scenario, the test leader could focus on observing what was being done on the screen, as well as taking notes of the most important key actions.
Users were then given one task at a time to solve. Using the first prototype, the following tasks have been given:

(1) **Find the hidden badge and secure it. Tell the test leader when you think you are done.**

The purpose of this question was to see if users understood they had to register an account, which would allow them to integrate the badge. This task could only be solved in one way, by using the special link “Get your Explorer badge here” which was displayed at the end of the instructional video on the start page of Briteback’s website. If users clicked on any other visible sign up link on the website this would lead to registering an account without earning the badge. It should be stressed that users were given instructions on where they could find the badge, as this tasks purpose was not to see where users would be looking for the badge. It was more important to understand if users would recognize the badge as such.

(2) **Find out how many badges you have earned in total so far.**

The purpose of this task was to see if users recognized the badge board icon in the top navigation of the app and identify it to enable them to solve the task. This task was solved when users verbally announced that they had earned two badges.

(2.1) **Description task**

When the participants had clicked on the badge board for the first time, they were also asked to describe what they could see on the screen and what they thought all those elements meant. If they did not know the meaning of what they saw, they were asked to describe where or how they thought they could find more information about it. As this task has a descriptive nature there is no solution to it, and it merely gives the test leader insights in the user’s idea about the game.

(3) **Share your welcome badge on Facebook and announce when you think you are done.**

The purpose of this task was to find out where users would try to find a share icon/option and where problems with connecting a social media account occur.
There are several ways of solving the task. Users may either click on the *welcome badge* and use the share icon, or they may go to the chat to use the slash-command. Regardless which method they choose, users will in both cases have to understand that they first have to go through the process of connecting their Facebook account to the app and then share the badge.

**4) Where can you find general information about how to collect badges, what badge types there are and what they mean?**

The purpose of this task was to understand if users would recognize the *welcome badge* as a possible source of game rule instructions and use it for solving the task. Only the *welcome badge* contains all information regarding the game rules, even though the user also can obtain part of this information by exploring the badge board in general. However, the task is only solved successfully when the user chooses to click on the *welcome badge* and verbally explains the game rules.

**5) Find out what it takes to earn the *socializer badge* and how many people have earned it?**

The purpose of this task was to find out if users would click on the *socializer badge* to gain this information, as well as to see if they would understand what part of the information presented with the badge referred to the tasks that need to be fulfilled.

After these tasks, the design leader switched from prototype 1 to prototype 2 and revealed the final task:

**6) Find out how many badges your team mate Michael Han has earned so far?**

The purpose of this task was to see where users would try to find this information. This task could be solved in three different ways. Either users click on 1) their colleague’s avatar in the chat, 2) click on his username in the chat or 3) click on his username in the team member directory in the right column of the chat.
During the test scenario the test leader observed what was happening on the screen and listened to what was being said. When users turned quiet the test leader tried to motivate them to speak loudly by asking questions about their thoughts and actions.

When each participant had been asked to solve all of the tasks, they were given the SUS and HEXAD questionnaires to fill in. They were informed that they could take as much time as they needed and could ask questions where clarifications regarding the statements in the questionnaires were needed. Furthermore, those participants who were familiar with the Briteback app were asked to try and review what they just had tested, instead of the app in general, when they filled in the SUS questionnaire. For the HEXAD player type questionnaire, participants were only told that this is a test to determine personality traits, while its purpose was not disclosed.

At the end of the test situation the test leader thanked each participant for his/her time and commitment to the test. Participants who knew somebody who would be invited to the test afterwards, were asked not to speak to them about the test situation.
5 RESULTS

The results for the usability test series show that the self-assessed user experience was in average rated with 75.6 on the SUS scale (figure 49) for all test participants and regardless their player type.

![Each participant's SUS score graph](image)

**Figure 49:** SUS score given by each participant, with an average SUS score of 75.6.

There was no significant difference for the rating of the SUS scores between test participants who used the app daily (N=5, mean=69, s=13.3) and those who have never used the app (N=7, mean=80.36, s=9.73): t(11)=-1.625, p=.15 95% CI.

Also, there was no significant difference for the SUS ratings between users with expert data skills (N=6, mean=84.17, s=6.45) and users with good data skills (N=5, mean=71, s=5.18): t(10)=3.752, p=.99 95% CI.

**Player types and SUS score**

The player type distribution (figure 50) shows that the most dominant player type for all test participants were the free spirit (N=6), the philanthropist (N=4) and the achieve (N=2).
Among the three most often occurring player types for each individual test participant (figure 51) were the **philanthropist** (10 occurrences), **free spirit** (9 occurrences), **achiever** (8 occurrences), **socializer** (6 occurrences), **player** (5 occurrences) and **disruptor** (1 occurrence).

**Figure 50:** Most dominant player types among test participants.

**Figure 51:** Distribution of the three most frequent occurring player types for each individual test participant.
No significant difference for the SUS ratings has been found for the top two dominant player types – *philanthropists* (N=4, mean=81.88, s=9.87) and *free spirits* (N=6, mean=69.75, s=13.22): t(9)=0.9, p=.934, 95% CI.

**Figure 52:** Average SUS score for the most dominant player type for all test participants.

**Figure 53:** Average SUS score for the three most frequent player types for all test participants. There was only one occurrence of the disruptor player type, which is why no mean could be calculated for this type.
Task completion

Regarding task completion, the results (figure 54) show that all test participants solved tasks 1, 2, 5 and 6. 10 participants out of 12 solved task 3, and only two out of 12 participants successfully solved task 4.

Figure 54: Task completion shows that all users completed tasks 1, 2, 5 and 6. 10 users solved task 3 and only 2 users completed task 4.

In the following sections the qualitative results from the observation during the usability test series will be accounted for:

Task 1: Find and secure the explorer badge.

The usability test showed that 11 out of 12 participants solved this task directly by clicking on the link “Get your Explorer badge here”, followed by the onboarding process. One person tried to secure the badge by clicking on the Try it now-button below the video, announcing that he believed he had to register an account before being able to secure it. When this did not work, even this person used the “Get your Explorer badge here”-link to solve the task.
Eight participants announced they had secured their *explorer badge* when they saw the push notification in the lower right corner on the screen, but without clicking on it. Four participants additionally clicked on the push notification and then announced that they had succeeded with this task.

Four participants were hesitant before trying to solve the task, asking the test leader what a badge was. When asked what they imagined a badge could be, one person announced that it could be some sort of a sign, whereas three people answered that it might be some kind of reward. However, all of these participants correctly identified the *explorer badge* as their reward when they found.

**Task 2: Find out how many badges you have earned.**

All test participants solved this task the way it should be completed, by clicking on the badge board icon displayed in the top navigation. Seven out of 12 participants clicked on the badge board as their first action choice, whereas four users gave a quick answer based on their actions up until this point, and without clicking on the badge board. All of these users corrected themselves once they spotted the badge board icon and clicked on it. 11 out of 12 users discovered the badge board by scanning the screen. One user announced that he knew that he would find the solution on the badge board, because he had learned about it when he read the information given on the *welcome badge*.6

By solving this task, two users had missed that they also had received a *welcome badge*, but correctly answered the task, by announcing that they had earned two badges. When asked what kind of badge they thought the *welcome badge* was and why they thought they earned it, one person answered that it must have been earned by registering an account, while the other user stated that it was earned together with the *explorer badge*. The remaining users had spotted the *welcome badge* notification, and four of them clicked on it – two *free spirits*, one *philanthropist* and one *achiever* – even though the task did not require them to do so.

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6 When users registered an account in order to secure the *explorer badge* in task 1, they were simultaneously rewarded with a *welcome badge*, which is a default badge for newly registered users.
**Task 3: Share the welcome badge to Facebook.**

10 out of 12 participants solved the task to share the welcome badge on Facebook by correctly identifying the share icon when clicking on the welcome badge and stepping through the connecting wizard.

One user did not see the share icon when clicking on the welcome badge and therefore tried to share it with the help of the Facebook icon in the explorer badge-box, in the game stats column. Yet another user did not click on the welcome badge at all and also tried to use the Facebook icon in the explorer badge-box.

Seven out of 12 participants discovered that they had started to earn the socializer badge, making verbal announcement of their discovery, even though the task has already been completed. Most users missed the push notification for the successful shared welcome badge, with only three users stating that they received feedback.

**Task 4: Find out about the game rules.**

Test participants had the most difficulties with task 4, trying to find information about the game rules. Out of 12 test participants, only two individuals completed this task. Eight test participants thought they solved the task by clicking on each individual badge that they could see on the badge board. Four of these participants tried to find an answer by clicking on the locked badges, which displayed a question mark, and which these users initially interpreted as some form of help. Also, four participants clicked on the game stats box, even though they stated that this somehow felt wrong. One of these users also stated that he knew he had read this information before, but could not remember where. One participant tried to click on the settings icon to find an answer.

**Task 5: What does it take to earn the socializer badge and how many people have earned it.**

All users solved the task by clicking on the socializer badge and verbally stating how many people had received this badge so far. Three users had given an answer to this task when solving a previous task and were therefore not asked to complete this task again.
Task 6: Check how many badges your colleague Michael Han has earned.

All users successfully completed this task. Five users solved this task by clicking on Michael Han’s avatar in the chat. Another five test participants chose to click on Michael Han’s username in the chat, whereas the remaining two individuals clicked on Michael Han’s username in team directory in the chat’s right column.

Despite correctly identifying how to gain access to this information, only two participants answered that Michael Han had earned four badges, whereas the remaining 10 users stated that he had gotten three badges, ignoring his explorer badge achievement.

Description task: Describe what you see on the badge board.

When asked to describe what they thought could be seen on the badge board, 10 out of 12 participants correctly interpreted the leaderboard, realizing that it showed the 20 best players in the Briteback community. However, one user stated that he felt it was scary to see the leaderboard, because he did not know if he was playing publicly as well, not having been given the possibility to decide for himself.

Two users said that they thought it would be fun to be able to compete against team members and see their colleague’s position instead. Two people mentioned that they would not strive for a leaderboard position but that they thought it could be fun to see who else has earned a top position.

According to a previous task, all participants correctly recognized their badge achievements, which can be seen in the middle column “My achievements” on the badge board. The main challenge for this section was to understand the differences between each filter option – earned, locked and unlocked badges. 11 out of 12 participants correctly understood their meaning and recognized their design as a filter function.

Half of all test participants were initially hesitant when thinking about each option’s meaning and clicked on the different badges to gain a better understanding of their difference. This being said, users realized that earned badges were colored, unlocked badges were displayed with a grey color and their badge icon, and locked badges were displayed in grey color together with a question mark icon. Some of the test participants announced that they wondered if it was possible to click on the locked badges, as they believed these could not be achieved yet.
They all clicked on several locked badges and stated that they now understood that these badges could only be achieved when a certain feature has been connected to the app.

One of the 12 test participants understood the meaning of unlocked badges, but interpreted locked badges as *explorer badges* and responded that those badges are spread out all over Briteback’s website. This user did not explore the badges nor did they click on any locked badges.

Two users announced that they felt overwhelmed when they saw that they had earned only two out of 120 possible badges. However, one of these participants also said, that he felt he was “on the go” nevertheless, which he said felt good. The other user said that he felt stressed about knowing that he had to earn so many badges. However, this test participant also stated, that he thought that it was a “good thing” one could play for a longer period of time.

When users were asked to describe the game stats column on the badge board, most users correctly interpreted the *My Position*-box as their position on the leaderboard. One user understood its meaning from having carefully read all information on the *welcome badge*, whereas the others tried to convey its meaning from the badge board. All but one user stated that their leaderboard position was connected to how many badges they had achieved so far and how much they have been playing the game. However, one user thought that the leaderboard position was connected to how many features had been used so far. Also, one user tried to convey the value of the leaderboard position by comparing his own position with all other player’s position and stated that he felt he was in the middle field of all players.

Yet another user wondered if the given number of 260 other players referred to people in his city, state or on his team.

Regarding the VIP status only three out of 12 test participants fully understood its meaning and made the connection to the amount of earned *explorer badges*, as well as their purpose. Two of these users retrieved its meaning from reading the *welcome badge* and one user from having played the game so far. However, most remaining users where unsure about how to become a VIP and what it means to be a VIP member. One user announced to have read about the VIP status but could not remember where he learned about it and what he learned exactly.

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7 The number 120 is a fictive amount of possible achievements and has only been included to be able to study users’ reaction to a high number.
Yet another user asked if there was a difference between being 20% VIP, 50% or 80%. Eight users did not know what would happen once they became 100% VIP, and one participant expressed that it was likely he would be given a VIP badge.

When the test participants were asked how they would go about to gain the missing information about their VIP status, eight users said that they wanted to click on the VIP badge icon.

Eight out of 12 test participants correctly interpreted how they could earn an explorer badge when asked to describe the explorer badge-box. Two of these users had learned about their meaning and how to get them by reading information on the welcome badge. One user explained that explorer badges could be earned by sharing them in the social media and referred to the social media icons in the explorer box. Yet another user said that explorer badges could all be achieved in time, without the need of actively doing something to earn them. Even though most participants correctly understood how to earn explorer badges, all but three users were somewhat hesitant when giving their answer and wanted to click on the explorer badges for more information.

Test participants had the greatest difficulties with understanding the spree day badge, with zero users correctly identifying its meaning. Only one user thought this could be one of the loyalty badges he had read about on the welcome badge, but was unsure about what that would mean for him. One user thought there were 364 days left until a payment request of some sort would be made. Yet another user believed the term spree day had something to do with receiving a special offer or discount. The majority of seven users clicked on the badge in an attempt to gain more information about it, while one user clicked on the welcome badge to learn more about the meaning of the spree day badge.
6 DESIGN RECOMMENDATIONS

In this section, design recommendations will be made for the further development of the gamification concept. These recommendations are partly based on the results of the user tests or derive from time restrictions, which did not allow all gamification elements to be designed for. However, all of these design recommendations are perceived as crucial for the gamification concept to succeed.

The following design recommendations are based on the results of the user tests:

1. It has become clear that most users do not take their time to carefully read the extensive instructions and tips and tricks which are associated with each badge. This might lead to a poor understanding of the game and may reduce the impact a badge can make on the user’s interest in the game. Therefore it is recommended to keep instructions for each badge as short as possible and enable users to grasp their core meaning simply by quickly scanning them. Instead of text, images or very short tutorial videos could be included to clarify each badge’s meaning.

2. Users had great difficulties interpreting the meaning of the Spree Day. However, most users wanted to click on the badge in the game stats column to learn about its meaning. Therefore the name need not necessarily be changed if its meaning can be made clear in the badge description.

3. As a consequence of the previous recommendations, it is advised to make badge icons in the game stats column clickable, so users can learn about their value, without having to select the welcome badge, where all this information also is available. More importantly, the user tests showed that most users tended to click on each badge to gain information about it, which shows that this behavior can be advantageously used for the game stats column as well.

4. When asked to find out about the game rules for collecting badges most users were looking for some kind of button or help section on the badge board, ignoring the fact that they have been given this information in connection with the welcome badge. Only a few users remembered they had already seen this information, and even fewer users remembered the welcome badge.
This could be due to the badge carrying a lot of information which was not regarded to be purposeful at the time the badge was achieved. Therefore it is recommended to include the game rules at a more prominent position on the badge board, clearly labeled as such.

5. Most users did not make the connection between the number of collected explorer badges and their VIP status. Those users who had read about the game rules on the welcome badge were able to correctly interpret their relation, which shows that the instructions themselves are not unclear and can be understood. However, as earlier stated, most users did not take the time to read a lot of information, which is why it is recommended to break it down into smaller parts and provide this information when it is needed. This does not mean that the welcome badge is redundant, but additional information should be provided on the badge board for each individual achievement.

6. Most users used the push notifications to learn more about their current achievements as long as they had not discovered the badge board. However, the push notification about the successful shared welcome badge on Facebook was missed by the majority of users. This might be due to the static nature of the prototype which did not show movements, or because the badge board is visually rich, which may blur the sight of push notifications. It is therefore recommended to conduct further testing on an animated prototype.

7. Users have not been asked about their thoughts regarding the use of editorial photos and what they felt when they saw these. To learn if those images have the desired effect, users could be asked to rate these pictures as well as verbally explaining what they are associating them with.

Due to time restrictions not all elements of the gamified experience could have been designed for. There are missing elements, some of which are perceived as crucial for the gamification concept to fully succeed:

8. **Team focus** – It is recommended that the action badge system should be developed further with special focus on joint team activities and challenges, as well as team leaderboards.
As earlier described, studies show that people are more likely to engage in working for their team than doing so alone. Also, letting teams within an enterprise or the Briteback community compete against each other may help to spur knowledge sharing among individuals and promote digital fellowship, as well as adding a new and exciting dimension to the gamification concept.

9. **User profiles** – The app was completely lacking social elements at the time this report was written. Users are largely anonymous to each other, except for their username. Scattered teams with members all across a country have little or no chance to learn about each other, unless they are explicitly talking to each other, making personal attempts to get to know each other. Therefore, implementing user profiles is highly recommended, where users can add personal information, such as their contact details, preferable online office hours, information about interests, work competences, earlier workplaces and so on. These user profiles could also include each user’s badge collection to make it more personal and an integral part of a user profile. In the same way each team could have a profile page, where administrators can add a team avatar, contact details, as well as an overview about its team members and which roles they inhabit. This becomes even more important if the badge system includes team activities and challenges.

10. **Homepage** – Even though the gamification concept mostly includes activities in the app it should be advertised and explained on Briteback’s website to inform users about the possibility of playing, as well as that playing is voluntary. The game’s and its badges’ purpose should be described. If badges and the game rules are being viewed as attractive or exciting users might decide to register an account out of pure curiosity. Also, by making the game visible there are no unexpected surprises for new users. Finally, users who have visited Briteback’s website because they have seen a shared badge on one of their peer’s social media accounts, will recognize that they have come to the right website address and are not left wondered if this is the app their peer had joined.

11. **Feature and merchandise shop** – So far nothing else can be done with badges other than collecting enough of them to join the VIP club. Depending on Briteback’s future business model, a feature and merchandise shop could be developed, which allows players to trade in badges in order to gain access to all kind of features for free.
Another option would be to offer users discounts or special price offers for features and merchandise. This could give the gamification concept one more dimension and make it even more valuable to players and achievers.

12. **Badge design** – An attractive badge set should be developed which represents the different types of badges, as well as to which feature they belong. The badge design should be held consistent within the badge type and feature category. Special badges like loyalty badges or the VIP badge could differ in form and design to be more outstanding and unique. Also, badges are displayed in a rather small format on the badge board, which is why they should not be too complex in their design, so that they are easily recognizable by the user. The badge design should also be carefully tested and evaluated to make sure that they are perceived as attractive and collectable. It is also recommended to carefully develop and study each badge’s challenge level to enable users to make achievements according to their abilities.

Also, the amount of possible badge achievements should be carefully considered. As the usability tests showed some of the participants expressed the feeling of being overwhelmed and stressed simply by knowing there were 120 badges which could be achieved. Even though both users also stated that they thought it could be fun to know that the game possibly would last a while, it should be carefully studied when the displayed badge amount evokes negative feelings.

13. **Offline badges** – The gamification concept does not have to be completely digital and could be extended to the real world. For examples, users could earn physical and/or digital badges when participating at Briteback’s events, such as visiting the company’s fair booth, participating in a workshop and so on.
7 DISCUSSION

In the following sections, gamification as a marketing strategy will be discussed, as well as the method of this design process and the results from the usability test series. This is to shed light on how future design processes could be improved and how the results can be interpreted for a better understanding on the impact of the gamification concept.

7.1 GAMIFICATION DISCUSSION

Gamification is still a wildly debated topic, with many scientists and practitioners arguing for its promising outlooks within the area of marketing. However, the author of this report has not found any literature which could provide estimates of how many people can be expected to enjoy a well implemented gamification experience and who actually play the game. On the other hand, there seem to be so many examples of products and services which use gamification as a marketing strategy, which is why it can be argued that it must address enough people to be value adding. Also, it can be anticipated that only a small amount of active players can have positive effects on the revenue for any company that implements such a strategy. If for example a small amount of socializers uses the game as a platform of communication then they automatically become ambassadors of the gamified product or service and attract more users. If only a small amount of explorers, philanthropists or free spirits appreciate the informational value of collecting badges, then this will also spur their willingness of talking about their discoveries with their peers and/or colleagues. No matter the reason why each player type talks about their experience with the gamified product, this can quickly lead to a snowball effect, where more and more people get attracted to the product because their peers are implicitly or explicitly motivating them to do so.

Of course, a company that implements such a marketing strategy has to constantly monitor how users are reacting to the game, to prevent unforeseen negative effects that could lead users to turning their back on the product.
7.2 Requirements Discussion

The better the designer’s understanding of the problem, the higher the chances of the design reaching its goals. There are several different methods which can be applied for gathering requirements. Each designer has to decide what methods are suitable given the project’s extent and restrictions.

For this study, it was decided to examine some literature to determine the user’s needs, to analyze the app’s features and study existing business documentation to gain a deeper understanding what elements the gamification concept could include and where it could create benefits for the user and Briteback.

The literature studied was provided by Briteback’s stakeholders with the motivation that they also had been used for developing the current business model. Also, due to the extensive amount of existing research within the field of digital communication and collaboration, it was decided that conducting user interviews was not necessary, as they most likely would not reveal any new information.

In hindsight, user interviews could have been conducted with people who are known to use apps which are gamified to ask them about their experiences with this. This could have given valuable insights about user behavior in gamified systems, which could have supported or contradicted the motivational theory used, as research within the field of gamification is still somewhat controversial and scarce. However, this would have been an ultimate design scenario providing the designer with additional information, but is basically not essential for the design process. Information like this can also be obtained by conducting user tests.

It should also be stressed that the app’s features have been analyzed by setting up several test accounts staging user interaction. Here it could have been of value to observe real user interaction. However, due to the fact that this is a rather time consuming study method, it has not been included. Also, at the time the study was started, there were not enough users on each team in the app which could have been approached and asked for their participation for such a study. According to previously given argumentation, even here it was reasoned that the app could be evaluated without the involvement of real users.
7.3 DESIGN DISCUSSION

Designing is a creative and iterative process which is based on each designer’s experiences and design knowledge. For this study “10 Plus 10”-sketching method has been used which allows the designer to free the mind and explore different possible perspectives of the design. Each design option has been evaluated by determining its advantages and disadvantages according to the designer’s knowledge about the gathered requirements and his/her design expertise within the field of user experience in general. To improve the design according to the best of abilities, it has been iterated several times together with Briteback’s stakeholders.

The design is also influenced by time restrictions and the existing conditions. For example, when this design study was started Briteback’s business model was of such that email, chat and external voice/video were part of the standard version of the app. In future however, the app will only provide the chat and internal voice/video as a default. This influenced the way the gamification concept was developed. For example, a complete badge system could not be developed due to uncertainties regarding the future structure and content of the app, as well as the company’s business model. Therefore the gamification concept has been developed in more general terms, using the designed badge ideas merely to exemplify the concept’s overall structure.

Also, due to time restrictions it had been decided to design a gamification concept which focuses on the individual user, even though the team aspect is of great importance. It was that the gamification concept could be built step by step, ranging from the individual user, to a team perspective all the way up to an enterprise perspective. In the end it is the individual who is using the app, no matter if they are part of a team with several members or not.

Even though anticipations have been made regarding the user dynamics and emotions, it has to be stressed that these cannot be entirely foreseen, as the app will be used by many different teams and in many different contexts. This applies also to the game, which might evoke all kind of user dynamics and emotions, depending on these contexts. However, making assumptions regarding the user dynamics has been an important aspect of developing this gamification concept, as they guided the reasoning behind many of the developed game mechanics.
7.4 Prototype discussion

The way the prototypes have been designed might have had an impact on each user’s performance in the usability test series. Both prototypes have been very simple, only allowing interactions with mouse clicks. There were no animations in the prototype for functions like incoming push notifications and hover effects. This could have had the effect that users missed the welcome badge for which a push notification was shown directly after users had closed the explorer badge when completing the first task. However, most users did notice the push notification for the welcome badge, which is a good indicator that even more users will notice it, once notifications are animated (Wickens et al., 2012).

Also, not all icons and features which were displayed in the app could be interacted with. This could have led users to think that those features were not relevant for solving a task, and which in its turn could have led users to merely screen the prototype for places that were clickable. However, to minimize the risk for solving tasks strategically, the user’s actions were observed and users were often asked about their behavior and their thoughts.

However, even though fully interactive prototypes are the ultimate choice for user testing, clickable prototypes are sufficient for the very first iterations of the design.

7.5 Usability tests discussion

The results of the usability test series showed an average SUS score of 75.6. According to previously mentioned theories, a score between 70 and 80 indicates good to excellent design (Bangod, Kortum and Miller, 2009).

For this study, there were two main groups which had been tested. On the one hand, there were users who were very familiar with the app, as they are employed as developers at Briteback.

On the other hand, there were participants who did not know the app at all. Even though the developers had not seen or heard anything about the designed gamification concept, it could be argued that they were biased in their judgement, tending to be overly positive, because they want things to go well for their workplace. However, the results were consistent over both user groups, showing no significant difference in their rating, which is why it can be concluded that this was not the case.
The other group on which the gamification concept was tested were people who had not heard about Briteback or used the app before. It was anticipated that these people would rate their user experience lower as they would have trouble understanding what the app was about, and because they could not test the app’s features, before testing the gamified design. However, as previously mentioned there was no significant difference regarding the SUS score ratings between developers and this group.

Also, there was no significant difference between test participants with expert data skills and those with good data skills, which is promising as Briteback’s target group are so called early adopters – people who embrace new technology before most other people do, and who therefore can be anticipated to have these computer skills. However, computer skills as the only criteria may not be sufficient to determine whether or not a person actually is an early adopter. To validate these findings, future studies should also ask users about their perception and usage of new technology.

When looking at the average SUS score for the most dominant player types among user participants, it can be seen that philanthropists rated their user experience with 81.88, free spirits with 69.75 and Achievers with 88.25. Those are promising results for philanthropists and achievers who both rated their user experience above 70 and made up half the sample size. Free spirits, who are the most dominant player type, with 6 users in total, rated their experience close to 70, which is still a positive result. The results for the three most often occurring player types for all test participants are similarly positive, ranging from 72.2 up until 80.83 for philanthropists, free spirits, achievers, socializers and players. Only one participant also included the disruptor player type. This person positively rated the overall usability of the system with a score of 90.

Regarding the reliability of these test results, it has to be mentioned that the sample size was fairly small, which does not allow for any general conclusions to be made about the results, especially regarding the user’s player types, which would have benefited from a larger sample size. According to earlier mentioned player type theory, 75% of all players are supposed to be socializers (Zicherman & Cunningham, 2011), with only 5% disruptors, if each person could only be of one player type.

Though the results for this study do not even include the socializer player type as the most dominant player type, giving away the lead to the free spirit player type instead, which is represented by 50% of all users, followed by 33% philanthropists and 17% achievers.
This opens for a discussion whether those estimates by Zicherman & Cunningham are reliable. For example, for his case study, Peréz (2015) examined whether the statements used for the HEXAD questionnaire were reliably determining student’s player types and concluded that this was only the case for inferring philanthropists, achievers and socializers. However, it can also be questioned if the sample size for this study simply was too small and/or to limited, mainly focusing on people with good and expert computer skills. It is also important to know that the HEXAD questionnaire is the first of its kind and has not been used in many empirical studies yet. Therefore it can be argued that time will have to tell whether or not it is reliable and valid.

Regarding the validity of this study, it could be discussed whether the SUS questionnaire was the right method for evaluating the gamified experience. The SUS questionnaire is generally used to determine the overall impression a user gains from interacting with a digital system (Brooke, 1996), e.g. a homepage, an app and so on. However, in this case users were only presented with a small part of a larger system where the connection between both might not have been entirely understood. This could have led users to wonder what exactly it is they are judging. Even though the developers were asked to try and rate their interaction with the prototype and not the app as they know it, it cannot be excluded that the overall judgement for the app came into mind anyway. On the other hand, people who did not know the app at all could have had trouble rating their experience exactly because they did not know what it was about and how exactly it works.

Also, to determine how engaging, motivating or fun the gamification concept is, only a longitudinal study can give meaningful results. A gamified experience is about collecting badges and interacting with the system and other users over a longer period of time. Users might enjoy a gamified experience in the beginning because it is new to them and seems promising, but it is just as likely that users will get tired of it once the novelty effect fades away. Also, the emotional impact the gamified system has on the user should be studied to determine if the overall design of the game, as well as the badges have the desired emotional effects on the user.

Another aspect which could have had an impact on the study results is how comfortable the users were with the test situation and how well they understood the tasks they were presented with. A test situation using the think aloud-method requires the user to speak up and verbalize their thoughts. If users do not feel comfortable with the test leader they might not dare to do so. Also, people might be more or less verbal in general, which defines what thoughts they choose to share with the test leader.
This could lead to important information being lost and only more trivial thoughts being shared. Also, people who do not feel comfortable with the test leader or who are insecure in themselves might choose to preferably share positive thoughts or act in a different way than they usually would if their behavior were not observed.

The same reasoning can be applied to the evaluation of the SUS questionnaire, which bases its results on each user’s personal assessment of their experience. Users unfamiliar with test situations like these or users who are insecure in themselves might be very conscious of their answers, rating their experience according to what they want it to be or what they believe the researcher wants to see, instead of what they actually feel. Even though each participant in this study has been told beforehand that they cannot do anything wrong and that it is the quality of the design which is tested, there is always the possibility that self-assessment questionnaires do not mirror the user’s actual thoughts. Furthermore, it is also possible that users do not know how they feel or think about a given statement on the SUS questionnaire, and therefore choose and answer which they simply believe would be plausible.

Furthermore the test leader’s interpretation of the observed and heard could lead to misconceptions about the user’s behavior. Recording what is being said and what happens on the screen can therefore be of help to the evaluation of the study results. For this study the test leader’s focus was on what has been observed on the screen, while the dialogue between test leader and the study participant was recorded.

During the tests it sometimes became clear that user’s did not fully understand the tasks they were given, which could have led to misleading results. For example, users were asked to find out about how to play the game, which made most of the users hesitant. When re-phrased the question to “Where can you find information about how to collect badges, what badge types there are and what they mean?” users more clearly understood that they should find information about the game rules. It cannot be ruled out that other tasks were similarly difficult to understand by the user, which could affect the overall results, and which could make tasks more difficult for the users to solve. This in its turn could influence the overall evaluation on the SUS questionnaire, possibly resulting in lower scores.

Regarding the test results it can be said that those users who read the game rules presented with the welcome badge had less difficulties solving the tasks. They also gained strategical insights about their game status, by interpreting the information they were presented with on the badge board. This is a good indicator that the game itself is understandable and that it allows for individual playing strategies.
However, most users did not read the game rules on the *welcome badge* and therefore missed valuable information on how to improve their performance. Regarding the purpose of the game, to help users cope with information overload, it can be concluded that users who are already receiving more information than they can handle, will most likely not take their time neither to read extensive game instructions.

If information about the game rules is not presented in another way, this could lead to users losing interest in the game, due to a higher learning curve.

Given the results it can also be concluded that the badge board was engaging, as the majority of all test participants freely clicked on the different badge types, avatars on the leaderboard, as well as the game stats boxes. By doing so users gained more insights about the game rules. Also, some users gained strategical insights, which is a good indicator that the game offers different ways of playing it, and which will suit different player types.
8 CONCLUSION

The goal of this thesis was to examine what elements a gamification concept could include to assist Briteback with its marketing strategy to acquire new customers, as well as to deepen customer engagement loyalty. This meant that the gamification concept had to be developed from a business perspective, as well as the user’s standpoint. Therefore Briteback’s marketing strategy has been examined, and a non-formal literature study has been conducted to learn more about the users’ goals regarding digital communication and collaboration.

The developed gamification concept resulted in an achievement based model, which allows users to collect different kind of badges, as well as to achieve a leaderboard position and to become a VIP club member who is given early access to new app features. The gamification concept focuses on individual users with good to expert knowledge skills, as well as Briteback’s Lite and Plus accounts.

According to scientific theories, what motivates people is highly individual. Therefore, the gamification concept has been developed with regard to different player types, and it includes elements which allow users to play for different reasons, such as gaining recognition from peers and/or team members, exploring the app out of curiosity or playing for conquering the game itself. The gamification concept also includes several social components, such as a user profile and functionality for sharing badges on social media accounts or in the chat, which gives players a platform for social interaction within and outside their registered team.

Another key aspect of user motivation is the level of perceived autonomy. Therefore, the gamification concept enables users to decide whether or not they want to play the game, and if so, to what extent. Users can individually choose which badges they want to collect or learn more about. By presenting users with a badge board – which provides players with information about their own and other players’ game status – possibilities are given for users to play strategically.

From the user’s perspective, the purpose of the gamification concept is to educate the player how to most effectively use the app in an engaging way. Therefore, a proposal of a badge system has been made for the chat feature, which is the app’s core function.
Focus is on rewarding actions within the app which match the user’s goals according to the user requirements, with the ultimate goal of helping users to cope with information overload. The longer users are playing the game, the less they need to think about how to use the app in an efficient way, minimizing the mental effort it takes to manage digital communication, and at the same time increase the efficiency of teamwork. However, a complete badge system could not be developed due to the current re-design of Briteback’s business strategy.

If user’s find the gamified experience engaging, they can be assumed to share and/or talk about their achievements on their social media accounts and with their team members and/or peers, which helps raise awareness of the app and its’ features.

The usability test series resulted in an average SUS score of 75.6, which refers to good system usability. There was no significant difference in the SUS score rating between users with good and expert computer skills. Furthermore, there was no significant difference between the ratings between the different player types, which indicates that the system was equally usable by all test participants.

Also, the observations made regarding the user interaction with the prototype, indicate that users were engaged, clicking on badges and exploring the badge board even though there were not specifically asked to do so, and which was not part of the tasks asked to be solved by them. Therefore, conclusions can be drawn that the elements included in the gamification concept have good potential of assisting Briteback with achieving its marketing goals. However, it is advised to conduct further testing, especially with regard to the long-term effects of the gamified experience and the user dynamics and emotions involved.
9 References


10 ATTACHMENTS

In this last section the following attachments can be found:

10.1 Detailed user requirements
10.2 Five example sketches
10.3 Proposal badge system for the chat
10.4 Consent form for participation on the usability test series
10.5 SUS questionnaire
10.6 HEXAD questionnaire
10.7 The Educational Model
10.1 User requirements according to the literature study

| Information organization | • Wants to know where information is stored  
|                         | • Wants to find information quickly  
|                         | • Wants to quickly access instructions and procedures  
|                         | • Wants to organize information themselves  
|                         | • Wants to work with organized information (labels, types, status) |
| Information quality     | • Wants to receive relevant information  
|                         | • Wants transparent communication (who said what at which time)  
|                         | • Wants to receive quick answers to emails and messages |
| Work focus              | • Wants to focus on one task at a time  
|                         | • Wants to spend time on work instead of email management  
|                         | • Wants to work without getting interrupted  
|                         | • Wants to work in a non-stressful pace |
| Effectiveness           | • Wants to remember important information which involves co-workers  
|                         | • Wants to be able to keep up with incoming emails  
|                         | • Wants to stay on top of information exchange  
|                         | • Wants to stay on top of task information |
| Task management involving others | • Wants to delegate tasks through communication  
|                         | • Wants to share task information with co-workers  
|                         | • Wants to see co-worker’s schedules  
|                         | • Wants to assign clear responsibilities to tasks  
|                         | • Wants to see what co-workers are working on |
| Personal task management | • Wants to document work progress  
|                         | • Wants to see if task fulfillment slacks behind  
|                         | • Wants to monitor several projects at once  
|                         | • Wants to prioritize tasks due to importance or urgency  
|                         | • Wants to be able to see a task’s status  
|                         | • Wants to set clear task deadlines |

User's needs sorted into meaningful clusters of goals.
Sketches exploring how to onboard the app with an explorer badge, as well as sketching different interaction options for Briteback’s homepage where explorer badges could be hidden.
Sketches exploring how to share badges on social media accounts, such as Facebook, focusing on the flow of actions as an awareness cycle.
Sketches exploring possible game mechanics, which resulted in the Educational model, which has been abandoned because it was perceived as too complicated.
Sketches exploring how to counteract churns with gamification mechanics. Churns can be described as the number of users who leave the Briteback’s homepage or the app for any reason.
Sketches exploring different progression mechanics and rewards.
## 10.3 Proposal badge system for chat

<table>
<thead>
<tr>
<th>Feature</th>
<th>Badge no</th>
<th>Badge name</th>
<th>Easy</th>
<th>Medium</th>
<th>Hard</th>
</tr>
</thead>
<tbody>
<tr>
<td>GAME</td>
<td>1</td>
<td>Welcome</td>
<td>Successful registration of account</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CHAT</td>
<td>2</td>
<td>Visionary</td>
<td>Create a new public or private channel</td>
<td>Invite at least two people to your channel</td>
<td>The badge will only be won if invited accept</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>Pen Pal Lite</td>
<td>Use the @-mention 5 times when addressing people in the chat</td>
<td>Receive at least 5 mentions back</td>
<td></td>
</tr>
<tr>
<td></td>
<td>4</td>
<td>Pen Pal Pro</td>
<td>Use the @-mention 20 times</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>5</td>
<td>Pen Pal Hardcore</td>
<td>Use the @-mention 50 times</td>
<td>Receive 50 mentions back</td>
<td></td>
</tr>
<tr>
<td></td>
<td>6</td>
<td>Buddy Lite</td>
<td>Write 10 helpful or informative comments that receive at least one like</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>7</td>
<td>Buddy Hardcore</td>
<td>Write 10 comments on others chat messages that receive likes by your whole team</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>8</td>
<td>Buddy Pro</td>
<td>Write 50 comments on someone else's chat messages that receive at least two likes</td>
<td>Like 20 received comments on your chat messages, if you found them helpful</td>
<td></td>
</tr>
<tr>
<td>CHAT/DROPBOX</td>
<td>9</td>
<td>File sharer Lite</td>
<td>Connect Dropbox Share a file from Dropbox in chat using the slash command</td>
<td>Share a file from Dropbox in chat using the upload icon</td>
<td></td>
</tr>
<tr>
<td></td>
<td>10</td>
<td>File sharer Pro</td>
<td>Share 50 files from Dropbox in the chat using the slash command or upload icon</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>11</td>
<td>File sharer Hardcore</td>
<td>Share 50 Dropbox files in the chat and share 10 messages across channels</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CHAT/TRELLO</td>
<td>12</td>
<td>Endeavorer Lite</td>
<td>Connect Trello to the app Share a Trello card directly in the chat using the slash command</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>13</td>
<td>Endeavorer Pro</td>
<td>Create 20 Trello cards in chat Share 5 Trello cards in chat</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>14</td>
<td>Endeavorer Hardcore</td>
<td>Complete 80% of this week's Trello assignments and move them to the done folder Set up a Trello stream</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Proposal of possible badge achievements that can be made in the domain of the chat.
10.4 CONSENT FORM FOR PARTICIPATION IN USABILITY STUDY

Background and purpose study

This study is conducted within the framework of a bachelor thesis in the field of cognitive science. For this study a design for some new features have been developed for the Briteback messaging app.

This study contains of two parts:

1) Solve tasks
For this study you will be asked to solve six tasks in an PDF prototype. There will be one more person in the room with you, handing out the tasks and observing your interaction with the app. Notes will be written down during the process and the conversation will be recorded.

You are encouraged to think aloud and talk about your actions and thoughts that occur during the test. You may try to solve the problems in your own pace. There is absolutely nothing that you can do “wrong” in this study. It shall be made clear that your performance is not rated or judged in any way. The purpose of this study is to determine the quality of the design - and the design only!

2) Questionnaires
You will then be asked to fill out a short questionnaire about your user experience and personal traits.

Ethical rights

Your participation is voluntary and you may terminate it at any time without any kind of reason and there will be no consequences whatsoever.

The results from your participation in this test will be anonymous and cannot be traced back to you.

Personal data

I understand English: ☐ Yes ☐ No
I understand my rights: ☐ Yes ☐ No

My gender: ☐ Female ☐ Male

My age: _____ years
My occupation: ________________________________________________________________

Have you used Briteback before?
- Never  - Once in a while  - Several times a week  - Daily

Do you work in a team?
- Work alone  - 2-5 people  - 6-10 people  - 11-20 people  - 20-50 people  - 50-99  - >100

How often do you use apps on your mobile phones?
- Never  - Once in a while  - Several times a week  - Daily

What kind of mobile phone do you use most frequently?
- iOS (e.g. iPhone)  - Android (e.g. Samsung)  - Other (e.g. Windows Phone)

How would you personally rate your computer skills?
- None  - Bad  - Ok  - Good  - Expert

Do you agree that results from your participation will be used in this study?
- Yes  - No

Do you agree that this conversation will be recorded?
- Yes  - No

Thank you for your participation!
## 10.5 SUS QUESTIONNAIRE

Please take your time to answer these questions by marking one that best describes your experience.

Your results will be fully anonymous and cannot be traced back to your person.

<table>
<thead>
<tr>
<th></th>
<th>strongly disagree</th>
<th>disagree</th>
<th>neutral</th>
<th>agree</th>
<th>strongly agree</th>
</tr>
</thead>
<tbody>
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<tr>
<td>I found this website unnecessarily complex.</td>
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<td>○</td>
<td>○</td>
</tr>
<tr>
<td>I thought this website was easy to use</td>
<td>○</td>
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<td>I think that I would need assistance to be able to use this website.</td>
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<td>I found the various functions in this website were well integrated.</td>
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<td>I thought there was too much inconsistency in this website.</td>
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<td>I would imagine that most people would learn to use this website very quickly.</td>
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<td>I found this website very cumbersome/awkward to use.</td>
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<td>I felt very confident using this website.</td>
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<tr>
<td>I needed to learn a lot of things before I could get going with this website.</td>
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</table>
10.6 HEXAD QUESTIONNAIRE

Please take your time to answer these questions by marking one that best describes your experience.
Your results will be fully anonymous and cannot be traced back to your person.

<table>
<thead>
<tr>
<th></th>
<th>entirely disagree</th>
<th>mostly disagree</th>
<th>somewhat disagree</th>
<th>neutral</th>
<th>somewhat agree</th>
<th>mostly agree</th>
<th>entirely agree</th>
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<tbody>
<tr>
<td>Interacting with others is important to me</td>
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<td>It makes me happy if I am able to help others.</td>
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<td>It is important to me to follow my own path.</td>
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<td>I like being part of a team.</td>
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<td>I like to provoke.</td>
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<td>I am very ambitious.</td>
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<td>I like competitions where a prize can be won.</td>
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<td>It is important to me to feel like I am part of a community.</td>
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<td>I often let my curiosity guide me.</td>
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<td>I feel good taking on the role of a mentor.</td>
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<td>I like to question the status quo.</td>
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<td>It is more fun to be with others than by myself.</td>
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<td>Rewards are a great way to motivate me.</td>
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<td>I like to try new things.</td>
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<td>I like defeating obstacles.</td>
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<td>I look out for my own interests.</td>
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<tr>
<td>I like helping others to orient themselves in new situations.</td>
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<td>I see myself as a rebel.</td>
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<td>I enjoy group activities.</td>
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<td>It is important to me to always carry out my tasks completely.</td>
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<td>I prefer setting my own goals.</td>
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<td>I dislike following rules.</td>
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<td>Statement</td>
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<td>I like sharing my knowledge.</td>
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<td>It is difficult for me to let go of a problem before I have found a solution.</td>
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<td>Return of investment is important to me.</td>
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<td>Being independent is important to me.</td>
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<tr>
<td>I like mastering difficult tasks.</td>
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<tr>
<td>The well-being of others is important to me.</td>
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<tr>
<td>I like to take changing things into my own hands.</td>
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<td>If the reward is sufficient I will put in the effort.</td>
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</table>
10.7 THE EDUCATIONAL MODEL

During the design process two different gamification concepts have been created, which mainly differ in their game mechanics. The first model that had emerged is titled as the *Educational Concept*. Its design idea was to guide the user into the system through a game funnel, which enables users with little or no knowledge about digital communication and collaboration to become skilled team players (figure 55).

![Diagram showing the Educational Concept](image)

**Figure 55:** The *Educational Concept* starts with many easy quantitative tasks and leads up to the development and fine-tuning of qualitative communication and collaboration skills, with an increasing level of difficulty, and therefore fewer, but more valuable achievements over time.

According to this model the user would go through five levels (figure 56) which are associated with a specific educational purpose. At the first level the user would be briefly introduced to how the app works. The second level was aimed at helping the user setting up the app. The third level would introduce key functions to the user, who she/he could consolidate at the fourth level. At the very last level, the game’s focus would shift from rewarding quantitative actions to qualitative actions which would allow the user to develop expert skills within the domains of digital communication and collaboration. While playing, users would be taught tips and tricks on how to achieve this, as well as learning how to most effectively use the app.
Throughout level 1 to level 4, users’ actions would be rewarded with action badges, which are based on purely quantitative tasks. Once all action badges for a level have been earned the user would also receive a so called super badge as a confirmation of the completed level. At level 5 however the user would receive scores instead of badges, based on the user’s qualitative performance. This way the game can be an open-ended single player game, where users strive for keeping their personal status quo.

*Figure 56: Model of the Educational Concept, showing all five levels and their educational purpose, helping users to become effective team players.*
**Level 1: Newcomer**

The very first level in the game is *Newcomer level* where few, quick and easy achievements can be made. This should give the user the sense of being successful from on beginning and draw the user’s attention to the game. This level should mainly serve the purpose of getting the user going with the game. Badges which could be earned at this stage could be handed out for e.g. registering an account, watching a tutorial video, or for connecting an email or a calendar to the account.

**Level 2: Upcoming**

The purpose of level 2 was to help the user to set up the app and teach the essentials needed for him/her to know to effectively use the app. Badges which could be earned at level 2 could be rewarded for e.g. setting up a display name in the app, for uploading a personal avatar or for naming one’s team.

**Level 3: Advancer**

Once the user has learned about the app’s features and set up their account, they are ready to use the app. At this stage in the game, the user should be rewarded for first time-actions, e.g. first time sharing an email in the chat, the first time creating a Trello card in the chat or the first time transforming a chat message into a tweet, and so on. At this stage the user should be educated in what kind of actions are possible in the app, with regard to the user requirements.

**Level 4: Teamplayer**

Once the user has been introduced to all essential actions in the app beneficial behavior should be promoted. Badges at this stage should therefore be rewarded for repetitions of certain actions, as well as being qualitatively meaningful. Actions to be rewarded could be related to what is being called netiquette – the correct and acceptable way of communicating on the internet – e.g. being brief and informative when writing chat messages, or commenting on each other’s messages and showing that the message has been noted and will be reacted to, and so on.
Level 5: Expert

The expert level is the last level in the Educational Concept which can be achieved by the player. This level is open ended, meaning that players can now fine-tune their communication and collaboration skills to keep their score high up. At this stage the user knows all about the app and how to use it effectively. It should also be clear to the user in which app domains (e.g. chat, email, voice/video) he/she excels and where improvement still can be made.

Badge types

On their journey to become experts, players collect two different badge types – so called action badges and super badges. Action badges are rewarded for several tasks that have been performed in the app. Super badges can be earned by all earning all action badges belonging to a level. In other words, super badges could be seen as a status confirmation for an achieved level, and would therefore be titled with each level's name (see figure 57).

Figure 57: Model showing the relationship between tasks, action badges and super badges with an example of possible tasks.
Pros and Cons of the Educational Model

The Educational Model has been iterated several times, especially in regard to how each level could be achieved by the user. In the beginning the idea was to successively lead the user through each level, making achievements on the next level first available when the current level was completed – meaning, that all tasks associated with the specific level have been done and all action badges have been achieved. However, this model does not allow a flexible use of the app. Some users may register an account in a rush and do not bother to go through a tutorial first, before starting to use the app. This can be the case particularly when users are invited to an existing team and quickly want to get going using the app, instead of taking their time to properly learn how to use it or set it up.

If this happens users will not be rewarded for actions that are associated with higher levels, as they had to complete the lower levels first. This could evoke negative feelings as actions belong to higher levels would have to be performed several times in order to gain their associated badges. This could also ridicule the game, as it clearly is not very adaptive to the user’s behavior in the app.

It was therefore decided to unlock levels with similar tasks at the same time. Levels 1 and 2 could be unlocked simultaneously as soon as one achievement for these has been made. Also, levels 3 and 4 could be unlocked at the same time, as soon as levels 1 and 2 have been completed. Level 5 however, should only be unlocked as soon as all previous levels have been completed. This would allow the user to be more flexible, but still requires the user to fulfill certain tasks in a given order to make sure the user follows through the educational funnel.

The Educational Model has continuously been evaluated by the designer and stakeholders of Briteback. Eventually it was concluded that, even though this model would align with the company’s vision and the user’s needs, the app cannot provide all the features and functions needed to make this model work at this very time. Too much time and focus would have been required to be invested into designing new features that would allow a qualitative assessment of the users’ behavior in the app.

It was also reasoned, that users may feel overwhelmed when getting confronted with too many communication and collaboration tips and tricks, when their foremost objective is to communicate with others in the way they see fit. It could also be possible that users do not want to educate themselves in the mentioned domains, but merely want to get their tasks done.
Also, even though leveling up has been made more flexible, it still is not fully adaptable to the user’s behavior in the app, which could force the user to repeat beneficial tasks several times, and which the user could have been rewarded for much earlier. If the user does not realize he/she has to go through a funnel to master the game, this could give rise to the feeling that something in the game went wrong or cause frustration about the inflexibility of the game and missed chances.

Furthermore, it was concluded that the assessment of qualitative data is a complex matter which can be highly individual for each registered team. For example, it is highly likely that some teams would have the need to send long and detailed emails to their clients or partners, whereas others do not. It can therefore be concluded that the more individual options there are, the more difficult and complex the model gets, especially if the individual user’s performance will be measured in comparison with others.

An iteration of the *Educational model* therefore excluded the last level of expertness development and it was decided to focus on quantitative data instead. The result of this iteration was the previously described *Milestone Concept* which allows users to collect badges that fit their individual knowledge, skills and performance level.