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Master's Thesis
Academic Year 2016

“FitHub”
A Service Design To Encourage Physical Activity
Through Branded Incentives

Keio University
Graduate School of Media Design

Alisa Salikova

A Master's Thesis
submitted to Keio University Graduate School of Media Design
in partial fulfillment of the requirements for the degree of
MASTER of Media Design

Alisa Salikova

Thesis Committee:

Associate Professor Kazunori Sugiura	(Supervisor)
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Abstract of Master's Thesis of Academic Year 2016

“FitHub”

A Service Design To Encourage Physical Activity Through Branded Incentives

Category: Design

Summary

In recent years, the term “motivation” became a buzz word in different fields of our life, including one of the most popular one: a “Healthy lifestyle”. Market that is driven by fast technological advances came up with millions of solutions on how to motivate people to eat better, be more active and become healthier in overall. The development of mobile technologies supported by recent emergence of wearable devices, provided people with “one-touch” solutions that promised to change their lives for better. However, the reality shows that for certain people the effectiveness of these solutions is minimum to none. Today’s methods aimed at encouraging people for maintaining healthy behavior use techniques that work for certain groups of people, while the majority is still struggling to turn “Healthy lifestyle” into their habit.

In this work, author introduces a service design aimed at encouraging young people to increase their daily physical activity through the implementation of game mechanics and branded incentives, assuming that the combination of gamification in non-game context together with the influence of brands on one’s self - expression can provide a greater motivation for increasing daily physical activity.

The prototype introduced in this paper represent a Minimum Viable Product Design (MVPD) in form of a mobile application. The evaluation of this prototype within the user test group showed positive results towards the functionality of the system and the experience that it can provide. However, to get the understanding of how this system works in terms of behavior change a long-term research is needed.

Keywords:

ABSTRACT

Design Thinking, Service Design, Health Behavior, Physical Activity, Brands,
Motivation, Rewards

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Chapter 1

Introduction

“Fit Hub” represent a service design solution that implements rewarding system through integration of physical activity tracking and shopping experience in the field of mobile health for young health conscious users.

The aim of this service is to, on the one hand, create a new user experience in physical activity tracking and goal setting for young people with low level of daily physical activity, and, on the other - to outline a successful communication “formula” in a new layer of indirect marketing for a private sector. A private sector, which is represented by producers of fast-moving and durable goods as well as services, where both can be described as products of “healthy lifestyle” category.

This service is supposed to provide its’ users with a mix of valuable incentives in a form of extrinsic encouragement that will, together with intrinsic motivation, raise the overall motivation of people for a health behavior change, and provide brands with a valuable extension of their marketing activities on a qualitatively new level.

1.0.1 Problem Statement

The global idea behind the research lies in the fact that “Healthy lifestyle”, which used to be a fashion magazines trend, now is as an important issue as sustainable development. According to the latest World Economic Forum report, low physical activity together with malnutrition and lack of proper medical treatment leads to NCD (Non-communicable diseases) affecting people around the world in their most productive ages, thus slowing down economic growth and prosperity ¹.

Although governments are taking measures to improve health behavior of the people, it becomes obvious that the issue of healthy living can not be targeted from only one direction. Thus, in 2013 a board of World Economic Forums Healthy Living Initiative proposed a multi stakeholder approach to the problem of healthy

living through the long-term investment in healthy years of the nation². The cross-sectoral collaboration on all three levels, which include Private sector, Public sector and Civil society can have a sustained impact that will help to make healthy choices the easiest ones. However, collaborations that are existing today are formed mainly in the healthcare industry, that limits the number of channels through which population can be reached. The private sector represented by producers of consumer goods and services has already started the implementation of marketing techniques that are targeted at the health consciousness of the people. Although the promotion of the healthy lifestyle through the healthy directions in the products and services together with heavy advertisement is already taking place, existing approaches do not seem to be efficient enough in terms of changing people's approach to healthy behavior. Nowadays, 50% of the population are not meeting minimum physical activity yet, even healthy lifestyle is considered by younger people as one of the life priorities. According to the Nielsen report on Global Generational Lifestyles, the top priorities of young generation aged from 15 to 35 are making money and fulfilling career, where health represent 30-40% of their life priorities³. However, everyday busy life that puts emphasis on work and study bring healthy lifestyle to "backwards", and with no strong motivational factor standing behind the idea of healthy lifestyle it is nearly impossible to make any changes in health behavior. Thus, to design an effective system aimed at improving physical activity three main aspects should be considered:

- **Who** - *Target audience*. It is important to understand a selected target group, to know their behavioral patterns and latest consumer trends to be able to tailor a unique effective solution for them, instead of trying to concur the whole world.
- **How** - *Technology & Channels*. Taking into account the uniqueness of the selected group, it is necessary to create a system that can deliver the message to the target in the most efficient way.
- **What** - *Message*. The main idea of behavior change that is hidden behind the concept is something that we want to deliver to our target group through innovative technology and channels that we create.

In this chapter author will discuss Who, How and What, explaining the reason why they were chosen for the research study. In the second chapter author will give a detailed description of related works, their strong points and directions that

haven't been covered yet; and why the proposed concept will be better at tackling the existing problem. The description of the concept design and its stages will be given in the third chapter. The 4th and 5th chapter will cover the evaluation of the concept and its further development based on the results.

1.0.2 Who - Understanding the target.

As it was mentioned earlier, when designing a health behavior change it is necessary to focus on younger generation because the earlier people invest in their health the better outcome they will have in their most productive ages. This younger generation, which age is in the range between 21 to 35, is usually called millennials and includes a number of segments with their individual personality types shaped by different cultures. According to the CEO of HSN Mindy Grossman and followed by Euromonitor research on consumer trends, there are 4 wishes that define today's millennials behavior as consumers ⁴, (Kasriel-Alexander 2199d).

- They prefer experience to just a possession of a “thing”
- They seek for a good value-deal for their money
- They want products to speak them personally
- They want to be heard and want to be interacted with

Living in the era of shared economy, where things can be taken either for free or at a minimum reasonable price, the possession becomes less important than the value hidden in the product. The unique, meaningful, personalized experience is something that attracts millennials today with their anti-materialistic and minimalistic lifestyles. They are always seeking for new experience in 3 main directions: Technology, fun and Wellness ⁵. As early adapters they are always open to technological advances that can give them a better experience of themselves. This trend can explain why market came up with wearables and the whole experience of quantified self. In addition to that, with smartphone as an extended self, millennials created a new way of consuming and delivering information at just one touch. It gave a space for apps to turn smartphones into something more than just a tool, a life companion, which is tailored to personal needs. Both, wearables and apps contributed to fun and fitness experience with millions of solutions in the price range from 100\$ to almost free. However, even with the high value that

millennials put on wellness and fitness, according to the research that have been done by author and a project team in December 2015, more than 80% are not satisfied with their current health & fitness and 50% still can't adhere regular minimum physical activity ⁶. Apart from those external reasons such as lack of time, money and motivation that stop them from implementing new health behavior, they also pointed out that it is hard to make first step or continue after the first step was done. Further research showed that "Quantified self" actually doesn't lead to behavior change, and the majority of those existing health behavior change techniques based on mobile platforms are very limited and not efficient enough to solve the problem of low physical activity (Duerr 2015).

Millennials today have the best access to "one's digitalized health" hidden in just one device, however, they still don't have a proper interpretation of this data. Interpretation that can show them the real value of their efforts in the reality that they live, and become a motivation for further actions.

Since wearable devices and mobile services are not integrated into the health-care system, the design that they rely on lack fundamental studies of consumer behavior and modern consumer lifestyle that explain factors standing behind the process of choosing behavior. However, they can have a great impact on health behavior change, since they form new effective ways of reaching people. Thus, it is necessary to go deeper into how millennials make their choices, particularly in terms of health behavior, through understanding some fundamental health behavior theories and their instrumentality.

1.0.3 How - Understanding the fundamental technology of health behavior change

People's choices are influenced by a variety of factors at multiple levels such as personal interests and preferences, habits, environment, availability, in one case making behavior change possible, in the other - hard to happen. Thus, it is important to use various behavior theories as a basement for design that is aimed at improving health behavior. The study of health behavior change involves a number of certain theories such as Health Belief Model (HBM), Social Cognitive Theory (SCT), Theory of Reasoned Action (TRA), Theory of Planned Behavior (TPB) and Transtheoretical Model (TTM); that are widely used in health behavior interventions since the beginning of 1990s and proved to deliver more efficient solutions than non theory-based approaches (Glanz and Bishop 2010). A short

overview of main concepts behind these theories can give an understanding of factors that were found to be the most important in influencing peoples health behavior choices.

- **Health Belief Model**

HBM hypothesizes that the readiness to take an action depends on two things: people's beliefs about the state of their own health and their perception of the advantages that an action will give to them and their health (Rosenstock 1974).

- **Transtheoretical Model/Stages of change**

TTM states that health behavior change is a long-term process that involves different actions at different stages of the behavior adaptation. which includes pre-contemplation, contemplation, preparation, action and maintenance ⁷. Thus, while some people can easily proceed to the stage of adopting a new habit other may be just thinking about change, taking more time to make the first step; and both groups require different approaches for health behavior change.

- **Social Cognitive Theory**

SCT represents a complex theory with such key constructs as observational learning, reinforcement, self-control and self-efficacy that are found to be useful components of effective health behavior interventions ⁸. Taking all these constructs into account the theory proposes that in order to maintain a successful health intervention it is important to set small, easy to achieve goals with well-defined rewards for the outcome, where the whole process should be provided with monitoring and constant reinforcement.

- **Social Ecological Model**

SEC theorizes multiple levels of influence on health behavior change that include individual, interpersonal, organizational, community and public policy (Sallis et al. 2008). Hence, the choice of the behavior depends on the social environment in which person is living.

Various studies of these theories and their successful implementations show that health behavior interventions are efficient when they are theory-based interventions. They provide a fundamental understanding of what forms a health

behavior and can play an essential role when designing a system, which is aimed at affecting people's health behavior in a long-term. However, just using them is not enough for developing a new approach, since they are narrowed down to health behavior only, while people's everyday choices are shaped by factors that are going far beyond described theories. Understanding these factors, and especially factors standing behind the problem of low motivation will help to design an even more effective system. In this research author decided to focus on a revised ego-depletion theory as a main reason behind the low motivation for health behavior change that will be explained in the next session.

Causes of low motivation for health behavior change in modern society

The theory of ego-depletion was initially proposed by Roy F. Baumeister in 1998, and the recent research conducted by Michael Inzlicht and Brandon J. Schmeichel states that the reason standing behind the reduction in self-control, when taking different tasks in a row, lies in the fact that there is a shift that appears in motivational orientation of task 2 because of the engagement in self-control in task 1 (Inzlicht and Schmeichel 2012). In simple words, when person uses the self-control resource for the action that is 1st in his/her action line, the self-control resource reduces by the time this person start a new action (task), that leads to the gradual switch from controlled action to impulse action. In his case person becomes less attentive to cues that signal the necessity of extracting self-control and more attentive to cues that signal the reward. Thus, step by step desires take over the planned action based on self-control and lead to the ego-depletion, where planned action is not performed.

The tasking process used in ego-depletion theory can be simply explained by prioritization of actions that leads to certain outcomes. This prioritization was discussed in Victor Vroom's Expectancy theory of motivation that will be covered later in the paper. According to it, the choice of performing certain behavior depends on how individual values the outcome of this behavior (Oliver 1974). Since we are talking about young generation, whose life priorities are mainly focused on pursuing a desired career and earning money, ego-depletion theory explains why the majority fails to undertake the task of improving physical activity. This task is simply not the 1st one in their priority, and by the time they reach the action, which can be called "improving physical activity", the self-control resource is already exhausted, and decision is made towards fulfilling impulse desires. For example, a tired young employee comes back home from work

where he had to deal with both routine and unexpected challenges. After a whole day of tasks his self-control resource is not powerful enough to force himself to go running even he knows that it is necessary for his healthy life and even he planned it before. In this case his self-control resource is exhausted and running task becomes replaced by a simple impulsive desire of lying on the sofa and watching TV. Thus, it should be noted that self-control resource, which directly influences peoples intrinsic motivation, plays a key role in behavior change.

Therefore, what can be done when the change in priorities is impossible due to such factors as social status and social environment that form one's most important considerations at a certain stage of life? It is important to understand the reality, in which people live today, especially modern millennials that put successful career path and good education as their first and second priority.

The work mindset reality

Since the school age people enter the reality of different social behaviors based on the rule of performing an action and getting a certain gratification for the result of an action. This can be called as a work mindset, where a worker perform his/her job and get a reward according to the result of the performance. The work mindset put people into the salary based reality with reward as a main incentive for performing an action. Of course, salary can't represent the only motivational factor. The reward itself consists of both tangible and intangible factors such as job promotion, social status, future perspectives, recognition and many others. However, according to Herzbergs motivation-hygiene theory, tangible rewards represent essential hygiene factors that, for example, together with salary, job security, work conditions and paid insurance reduce dissatisfaction and directly influence motivation (Miner 2015). Thus, tangible rewards from the outside become as an important factor of overall motivation as intrinsic forces coming from one's personal interest and desire. The same logical chain can be seen in the life of a school and a college student, where the performance-studying is rewarded by grades, ratings and future job opportunities. In this case tangible rewards play even greater role, since the main goal of education - a desired career path is delated in the future, not making much sense at the present time. Therefore, living in the reality with a strong psychological model that determine our behavior in fields of the highest priority that take more than 50% of our lifetime, it is important to take the techniques of the work mindset reality into account when trying to create a new behavior shift, especially where it does not represent a first

priority.

One of the theories from non health behavior context that can be implemented in health behavior change is Expectancy theory of motivation developed by Victor Vroom in 1964 as a study of organizational behavior and management. According to it, the selection of a certain behavior over other behaviors will be done based on the expected outcome of performing this behavior and the value of this outcome to the individual (Oliver 1974). According to the theory, there are three key elements that influence motivation for a certain behavior: Expectancy (E), Instrumentality (I) and Valence (V). Each of these three elements has a number of individual factors that either increase or decrease the efficiency of the element itself. For instance, Expectancy (Effort that leads to Performance) depends on such factors as self efficacy - the assumption of ones abilities to successfully exert particular behavior; goal difficulty and perceived control - the belief that one has a certain degree of control over the expected outcome. All three factors are directly proportional to the expectancy element. When performance expectations are met, person expects to get a certain reward for the achievement, which creates a logical chain, also called a feedback loop. The notion that the person will get a reward and understanding the logic of getting it represent the instrumentality (Performance that leads to Outcome). However, the probability that behavior will be exerted fully depends on the Valence - the way person values the reward for the outcome and the outcome itself. This decisive factor connects Vrooms theory with the authors idea of priorities.

All in all, Expectancy theory, ego-depletion theory together with the idea of task prioritization drive to a quite well-defined behavioral model for a target group that was described earlier in the paper: traditional methods of influencing peoples intrinsic motivation becomes inefficient, since there is no way they can change one's state of mind, which is influenced by a huge number of external factors. Thus, to create a successful behavior intervention for the task that doesn't represent a priority it is necessary to create a strong external motivator that can reach individual even in the stage of very low internal motivation caused by ego-depletion. And to make it happen it is important to use behavioral techniques that work in today's reality with the particular group of people defined by their consumer choices. Therefore, to make these words sensible, which existing successful techniques can be used to deliver the essential message of health behavior change in the best way? How to make motivation valuable?

1.0.4 What - Delivering the concept

In 1983 when American society faced dental problems of the population due to no habit of dental hygiene, a heavy national advertising campaign created by Claude Hopkins saved the problem and made toothbrushing a behavior shift in the daily hygiene. It took Unilever more than 100 years to successfully start the process of changing hygiene behavior of people in Asia, Africa and Latin America through just a small behavior shift in their daily life. A simple process of washing hands with soap that takes just 20 seconds took a long time to become a lifestyle and still is ongoing process.

Behind both health behavior shift programs stand huge promotional strategy either created by a brand or by a smart adman. Just these two examples show that even behavior shifts are small they require a huge effort based on promotion of this lifestyle shift and constantly supporting it, which can be done with a powerful promotional strategy performed by companies-producers of health-related products in the most effective way. Brands have power to influence people's lifestyles through the philosophy behind their products. They set a new trend and, thus, a new behavior with a huge number of people accepting this change simply because they love the brand and trust it. However, from the side of brands, today, little has been done in terms of improving one of the most important parts of our life - health.

Taking into account the role of big brands today that goes far beyond the process of providing consumers with products and services, to the layer of becoming a lifestyle indicator and supporter, and adding here those fundamental theories described before, there is an opportunity to create a mutually beneficial system, in which people get incentivized to change their daily behavior in a new and more effective way, while brands, that support this motivation, expand their influence on a new layer of indirect marketing.

1.0.5 Proposal

The service design proposed in this work is called "Fit Hub". It is a service based on a mobile platform, where people can track their daily activity and set goals to improve their physical activity. When reaching goals they will get points (fit coins) that they can redeem at online shop on items provided by different brands. By reaching goals and choosing favorite brands people can also get their personalized support as well as unique rewards for improving physical activity from brands

that they like. The introduced concept includes three core parts that create a new experience for the user: point system, which represent one of the most famous gamification techniques, rewards that are shaped into shopping experience available for users with their earned points, and consumer-brand communication as an extension of indirect marketing. The existing implementation of these techniques, their effectiveness and the reason why author decided to focus on them will be discussed in the second chapter.

Notes

- 1 Maximizing Healthy Life Years: Investments that Pay Off. An Insights Report from the World Economic Forums Future of Healthy Project Prepared in collaboration with Bain Company 2013
- 2 Maximizing Healthy Life Years: Investments that Pay Off. An Insights Report from the World Economic Forums Future of Healthy Project Prepared in collaboration with Bain Company 2013
- 3 GLOBAL GENERATIONAL LIFESTYLES. How We Live, Eat, Play, Work and Save for Our Futures. Nielsen. 2015
- 4 <http://fortune.com/video/2015/06/02/how-telling-stories-helped-the-home-shopping-network/>
- 5 the impact of Millennials' consumer behavior on global markets. Euromonitor, 2015
- 6 GO-Q project in collaboration with Jimi Okelana, Zikun Chen and Xiaomeng Liang, survey on health & fitness, 283 respondents
- 7 Prochaska JO, Redding CA, Evers KE. 2008. The transtheoretical model and stages of change. SeeRef. 39, pp. 97121
- 8 McAlister AL, Perry CL, Parcel GS. 2008. How individuals, environments and health behaviors interact: social cognitive theory. See Ref. 39, pp. 16788

Chapter 2

Related Works

2.1 Literature review

The exposure to the new technologies and, especially, to the internet-enabled devices that rapidly become an irreplaceable parts of our everyday life gives a huge range of new opportunities for making our life better in any field, but at the same time it challenges big brands to adapt to new lifestyles of their customers in the fastest and most flexible way.

The omnipresent “healthy lifestyle” trend is already changing the market requiring companies to redesign their products’ and service’ concepts, as well as promotional strategies, to reach their customers in the best way.

With the emergence of “quantified self” together with continuing advances in mobile technologies, health market today became filled with a large amount of “one-time” solutions aimed at improving health behavior. However, these solutions show little effect in improving opportunistic health behavior. They do not change our everyday life for better and majority of people still do not become healthier.

However, the rising popularity of “game design approaches”, famous for their motivational efficiency in non-game contexts together with the rising awareness of the necessity in rewarding health behavior, creates a new direction that can become an opportunity for people to find a new value in health behavior change and for companies to improve their promotional strategies.

2.2 Gamification in health-related context

Recent studies show that there is a growing interest in implementing advanced technologies and certain techniques in increasing people’s motivation for performing certain behaviors that are either beneficial for the person himself or a group

of people collectively.

The effectiveness of games in terms of motivating people through the unique principles of mechanics, dynamics and emotions lead to the emergence of “Game design approach” or “gamification” in non-game contexts. Among a vast number of determinations of the term Gamification, one of the most comprehensible and relevant explains it as an application of lessons from the gaming domain to change behaviors in non-game situations (Robson et al. 2015). This approach already has wide applications in different fields such global as education, sustainability, government and more industry based like brand-loyalty, workers engagement and so on.

Healthcare represent one of the biggest domain for recent researches about implementation of game design, especially in the field of fitness and wellness. Answering three main questions through the analyses of recent studies can provide a clear understanding of the authors’ concept and its contribution to this particular domain.

2.2.1 Why do people use gamified services?

According to Juho Hamari and Jonna Koivisto the main reason why games not only attract players attention but keep them coming back to the game world lies in a certain connection between hedonic, utilitarian and social motivations together with continued use intention and overall attitude to the gamification (Hamari and Koivisto 2015). While utilitarian systems are targeting extrinsic motivation to achieve a certain goal and get something from it, which, in the game context, can be represented by rewards (e. g. badges, statuses, points), hedonic systems that represent the game and its’ play logic itself are aimed at intrinsic motivation that actually makes people willing to play.

The study of the users of an online exercise service Fitocracy that implements game design techniques showed that the use of gamified services is highly dependent on both, utilitarian and hedonic motivations. However, they have different effect on the individuals perception of the gamified service. While the enjoyment caused by hedonic motivations determines the actual use of the game - the behavior, the usefulness provided by utilitarian motivations determines the attitude towards this behavior, which eventually increases the possibility of performing this behavior.

It is also important to notice here that when it comes to the game design and especially User Interface design, ease of use as one of the utilitarian motivators

play as an important role as enjoyment in terms of continued use of the service. In addition to that, when the service is designed more in utility direction rather than in play, the playfulness of the gamification doesn't have any significant influence on behavior, since *Paidia* (spontaneous play) and *Ludus* (structured, ruled game) are existing in two different dimensions. Today's gamified services mainly provide *Ludus*, thus, the real effect of the playfulness on attitude or use intention has not been studied yet.

Apart from utilitarian and hedonic motivations, social factors prove to have positive influence on the attitude to the gamified service but don't really influence the behavior itself.

All in all, as a result of the study of the usage of exercise game, authors came to the conclusion that what makes people use gamified services is a combination of utilitarian and hedonic motivations and social factors. However, while hedonic motivations directly influence use intentions, social factors together with utilitarian motivators affect it through the attitude to the gamification.

2.2.2 Does gamification actually increase people's physical activity?

Another study on Fitocracy showed that game design in health-related context, in terms of increasing physical activity, not only influence the attitude to the game experience but also changes behavior towards increasing physical activity (Goh and Razikin 2015). By implementing a pre-test and post-test experimental design aimed at determining the effects of game design on physical activity, authors finalized 3 effective implementations of gamification. First is activity reward in the form of points, badges and levels, which creates a game framework that provides feedback "relevant to the context of use" (Goh and Razikin 2015). Once player reaches a certain goal he or she receives an understandable feedback that is relevant to the actions that were taken to reach this goal. Second is an informational support based on social factor and the provision of relevant-to-the-topic information.

In addition to that, user-generated content in form of status updates, posts and comments where people can share their achievements and advices had a significant importance in motivation for increasing exercise activity. However, another form of social factor known as competition was found to be demotivating for some participants. The difference of physical levels of users as well as the difference in

the users' needs causes different perceptions of competitive aspect. While for one it can be a strong motivation for another it can be a negative factor discouraging from taking an action. In this case, for further researches in the given field authors suggest to take a closer look at collaborative features as another form social factors. Overall, the most common gamification features showed a positive result in improving physical activity.

Although, there is a clear understanding of underlying reasons for using gamified services and some studies prove that game design so far has positive results in improving physical activity, the continuous emergence of ways to collect the data about oneself as well as the ways to deliver this data to the user through advanced technologies of smartphones the systematic research on the effectiveness of game-techniques in health-related context is still very new and provide little information on implementation of different game techniques and their effectiveness.

2.2.3 Which gamification techniques can deliver valuable results in health-related contexts?

According to the study of Oren Zuckerman and Eyelet Gal-Oz, the implementation of such game elements as virtual rewards and social comparison to improve opportunistic physical activity were no more effective than a quantified self (Zuckerman and Gal-Oz 2014). However, quantified self, as it was mentioned in the first chapter, being effective in terms of positive attitude towards behavior change, proved to be not effective in terms of actually changing behavior. Thus, the present implementation of game design in health-related context and particularly in opportunistic physical activity doesn't provide a desired result.

Going back to the study, the research prototype of a mobile application called "StepByStep" based on accelerometer was used to measure users' engagement into the process of increasing their walking activity. Two tests were conducted to show whether gamification in form of rewards and social comparison provide better incentives than just measuring one's biometrical data. As a result of the study, all interventions showed same user behavior, where none of the techniques provided necessary motivation. Moreover, virtual rewards in form of points were found meaningless by the majority of participants; while social comparison through the leaderboard had some importance but on a limited number of participants.

In further discussion authors proposed that it is necessary to create a game design system, which is meaningful for users. This meaningful environment highly

depends on the information that is relevant to the user as well as on the opportunity to create own rules and goals. Since the process of constant self-monitoring proved to deliver a valuable information to the user, it is important to create new ubiquitous measures for the better understanding of this information to provide better relevance.

All together, when talking about opportunistic health interventions aimed at improving physical activity in people's daily life but not necessarily changing the whole lifestyle it is necessary to rely on existing measurement techniques that provide an advanced tool of self-measuring, and develop new ubiquitous measures targeted at providing comprehensible deliverables on meaningful aspects of physical activity.

As we can see, gamification becomes more and more popular topic in terms of improving health behavior. However, present studies show that the implementation of game mechanics in health behavior change strategies is in its' onset. Since the number of game-technics is quite big as well as the number of ways to implement and combine them, this field requires more research on the effect of gamification on health behavior change motivation and physical activity in particular. One of the relatively well-studied in terms of health behavior change (in comparison to other) game - mechanics is gratification. Medical research institutions nowadays state that rewarding healthy behavior can increase the overall motivation for behavior change and, therefore, improve the process of incrementing a new behavior into daily life. Thus, it is important to understand how this game-technique actually works and how it can be improved to provide greater motivation.

2.3 Rewarding healthy behavior

One of the most commonly used game-techniques - rewarding is now becoming widely used in health-related context on the governmental and private levels (World Economic Forum 2015). Incentive-based behavioral interventions, as they are called, gained certain popularity in improving nutrition and physical activity mainly through two channels: tangible incentives, which are mostly represented by monetary rewards, and intangible incentives represented by well-known in games points, badges, statuses and other types of digital rewards.

While the use of intangible rewards in terms of behavior change is well-studied at least in the game context, the implementation of financial incentives in the con-

text of health behavior change causes a fierce dispute whether it is actually helping to change behavior for better or just crowd out intrinsic motivation replacing it by extrinsic rewards.

2.3.1 The effect of financial incentives on physical activity

According to the systematic review of 12 studies by Barte and Wendel-Vos on the influence of financial incentives on physical activity, there is a positive effect on the improvement of PA ???. However, due to the limitations of many studies this effect can not be considered as a long-term.

In addition to that, authors put a great emphasize on two types of financial rewards such as unconditional incentives that are usually represented in the lower cost of physical activity, i. e. fitness club membership or sportswear that are provided to motivate person for a change and are not dependent on the behavior itself; and rewards that are directly dependent on the achievement of the goal. While conditional incentives in form of rewards for achieving goals showed positive result in improving physical activity, unconditional incentives turned out to be not motivating.

The time limitation of reviewed studies as well as the limitation of the studied activities give the understanding mostly of the perception of the rewarding of health behavior but not the impact of such rewards on the actual behavior change. Further studies give a better understanding of the long-term effect of the financial incentives.

2.3.2 The long-term effect of financial incentives for health behavior change

The research by Daniel Mochon et al. on extended effects of an incentive-based health intervention in form of financial incentive programs comes to a very significant statement that health interventions based on financial incentives have a long-lasting positive impact (Mochon et al. 2015).

The empirical and qualitative research conducted on 6,570 participants for 6 months with the use of Discovery Vitality program showed the evidence of motivation through financial incentives, which was previously denied by a number of theories. The financial incentives were represented in the form of discount for healthy food that participants would lose if they don't meet the goal of increasing the number of healthy products in their regular purchase.

Although, the described research focused more on the improving nutrition, exercise-based interventions also gave some positive results. However, authors pointed that physical activity behavior requires deeper involvement of self-control, thus the significance of the intervention is smaller in the post-intervention performance of the behavior. In addition to that, the difference in the value of the incentives for different users caused the situation where some people could not create a long-term change. Authors noted that it is important to understand who can be motivated by this kind of incentives. Moreover, incentives should be not only relevant but also strong enough to motivate for the first step of the change.

Another finding showed that in contradiction to many theories that propose a negative spillover effect when improvement in one health domain caused by incentives drives to the degradation in the other, there is a positive correlation in the improvement of both domains (nutrition and physical activity) when financial incentives are implemented in one of them. However, this conclusion requires more empirical studies.

All in all, financial incentives found to be motivating in terms of extended effect of behavior change. However, there is still little evidence on the impact of financial incentives for improvement of physical activity in a long-term since the study mainly focused on nutrition. Moreover, it is important to understand the whole spectrum of rewards that can be used for gamification of health behavior change and physical activity in particular. Understanding the coexistence of tangible and intangible rewards is important to have a deeper vision on the scope of their effects.

2.3.3 The impact of tangible and intangible rewards on gamified health interventions

The most recent study on different researches in the field of rewarding systems in gamified interventions for health behavior changes shows that, with no doubt, differences in the types of rewards create different impacts on interventions and on the perception of the performing behavior ??.

The effect that different types of rewards have on the intervention influences both intrinsic and extrinsic motivation of the person. According to the review of the most recent works, intangible rewards can be differentiated by the type of the effect that they have on the intrinsic motivation. Thus, unconditional and verbal incentives can provide the feeling of autonomy, while task-contingent,

reputational rewards represented by visualized achievements, badges or medals provide the feedback creating the feeling of relatedness.

Authors also emphasized that the way rewards are delivered also plays a certain role on the perception of the behavior. Hence, unpredictable rewards can reduce the feeling of being under control, which possibly can increase the intrinsic motivation of the person. At the same time, the number of studies that describe the effect of tangible rewards such as digital currency that can be redeemed in digital stores or inside the game for level-ups, gifts and other physical prizes is very little with scarce information on the effects of these incentives among adults. What is more important, as for now there are no researches that study the effect that combination of tangible and intangible rewards can have on the attitude to the gamified health interventions. However, there is a possibility that when combined together, these two type of rewards can bring a stronger motivation for behavior change.

Even the scope of research on rewarding health behavior and physical activity in particular is quite small, there is a positive trend in the effect of the implementation of this game-technique. Instant gratification is a game mechanic that is widely used in different fields to provide valuable incentives. One of these fields is relational marketing, i. e. brand loyalty. A variety of loyalty programs provided by huge number of brands to mainly retain customers proved to be a very effective tool in terms of motivating people for their purchasing behavior. However, the mechanism of providing incentives goes far beyond just increasing the number of sales. It provides a certain personalized environment for customer-brand relations, where brand represent not only a producer of goods and services but also a self-representation of a chosen lifestyle. If brands can be a representation of one's lifestyle, influencing consumers choices through global trends and personalized approach, it means brand can motivate people for certain life choices. Choices that improve individual's life and, therefore, put brand loyalty into a new, stronger level.

2.4 Brand loyalty extension through gamification and mobile marketing

Consumer preferences are shaped not only by existing trends but mainly by their own unique lifestyles. Consumers choose brands that not only have a good brand

image itself but also can express consumers' self-image in the best possible way. Hence, when positioning their brands, companies try to create products that fit in consumers' lifestyle. With a huge range of products and services in the market, consumers always look for new ways to show their identity. Brand becomes not only a useful product or service, it also provide consumers with such an important functions as self-expression and self-identification.

2.4.1 Consumer self-expression through brands

According to Munteanu Claudiu Catalin and Pagalea Andreea, since consumers are constantly looking for newer ways to express themselves, brands can use this tendency to create unique approaches to almost each individual customer (Cătălin and Andreea 2014). The role of brands in delivering value to consumer goes beyond just creating a hedonic experience; as it was stated by earlier researches in the field. They can provide much stronger experiences in expressing and representation of one's life values. In this case, consumers use brands not only for expressing their current lifestyle and current set of material values but also to project the lifestyle that they would love to have. Moreover, the ability to connect to other members of the community as well as the ability to express personal life values to the "world" also determine brand preferences of consumers.

In addition to that authors point out that creating an image of the brand as a brand that fits, defines and express one's lifestyle can become a huge competitive advantage for the companies. However, taking this track is not an easy way as it requires much attention to the possible extension of the product or service line. When delivering a lifestyle message the target audience becomes very specified and any changes in the existing product/service line may change their attitude to brand in overall. To make the positioning of the lifestyle work authors introduce several examples of the companies that use "lopsided" approach, which means that companies choose a general unique track and develop inside this track, not trying to expand to absolutely new fields.

It becomes obvious that today consumers use branded products and services not only for the main purpose of usefulness but also to express their complex psychological values and deliver their unique lifestyle to the world. Undoubtedly, companies understand this tendency and use self-expression as their market opportunity, trying to deliver even more personalized messages through loyalty between brand and consumer. However, marketing field is also driven by technological advances that shape it in a new way. Thus, the advances in smartphone

technologies brought a whole new area of mobile marketing.

2.4.2 The current state of mobile marketing

The study of V. Shankar et. al. on mobile marketing shows that today mobile marketing and shopper marketing are merging together forming a new term “mobile shopper marketing”, which can be defined as “planning and execution of all mobile-based marketing activities that influence a shopper along and beyond the path-to-purchase: from the initial shopping trigger, to the purchase, consumption, repurchase, and recommendation stages” (Shankar et al. 2016).

For shoppers mobile has become a source of convenient, easy and immediate search and replaced traditional touchpoint of verbal and even online communication. This ubiquitous factor of mobile created the same ubiquitous opportunity for marketers to be in touch with customers during the whole customer journey including pre- and after-purchase activities. However, authors also pointed that with the development of the mobile itself and those features it can provide to marketers, there is a question about how to create a design that can influence shoppers and potential customers in the best way during the whole customer journey, and provide them with rich experience, experience that involves other devices, especially with today’s emergence of wearables in the context of “quantified self”.

Mobile shopper marketing undoubtedly can reach potential customers better than any other existing technique as well as providing better personalized experience in order to build brand-loyalty. However, with further technological advances and saturation of mobile marketing tools / solutions the process of creating a unique marketing approach through mobile becomes more and more complicated, involving more than one device. One of these relatively unique tools that works perfectly for mobile industry is gamification that was discussed in details earlier in this chapter.

2.4.3 Gamification as a mechanism for mobile marketing

According to research conducted by Charles F. Hofacker et. al., the current field is still lacking some systematic study on gamified marketing approaches for mobile that are aimed at boosting three main factors: motivation, customer engagement and customer loyalty (Hofacker et al. 2016). However, authors also stated that modern approaches to the use of gamification techniques when introducing a mobile based marketing solution are mostly chaotic and usually introduce only one

mechanic, cut out from the logical chain of gamification. Moreover, they (marketing solutions) lack systematic approach as well as good system design. The article introduce Schell's approach to creating a gaming experience outside of game context, which includes such elements as: tetrad of story, aesthetics, mechanics and, of course, technology. However, even they represent the basement of good game design, the study about these gamification elements by marketing academics nowadays is very scant.

The research on the current marketing situation in brand loyalty and mobile marketing in particular, conducted by the author, with explanation of what does brand loyalty represent itself, can give some additional information on how this field is developing today and, which directions it should consider to deliver more value to customers.

2.5 Discussion

All in all, the study of three domains show that gamification in non-game contexts and especially in health behavior represent a popular, debatable topic, where rewarding mechanics appear to be under the most research interest. However, since gamification involves many layers, present studies do not cover all the possible ways of implementing game technics. While most studies on rewarding mechanics involve finical incentives, little is known about how monetary rewards influence physical activity. And at the same time, even game techniques are becoming widely used in two discussed fields such as health behavior and marketing, brand-loyalty in particular, and there is an evidence that brands play a role of lifestyle expression and creator, there is no study or research showing the effect of merging these two fields together through the gamification mechanism of rewarding, in order to get mutual benefits for both parties: consumers that need new approaches to increase their motivation for healthy (active) lifestyle, and companies that are always looking for better ways to reach their customers and build stronger relationships with them.

The author of this paper believe that "the lifestyle creating power" of brands as well as the experience that they provide to shoppers can incentivize non-active busy young people for more active daily lifestyle through implementation of gamification techniques aimed at rewarding active physical behavior, in the same way they incentivize them for purchases through loyalty services.

Since the scope of the concept is very broad, in this paper, the creation of

prototype and its evaluation are mainly focused on user's side, to get the understanding on how they perceive the value provided by the designed system and what experience it brings to them.

Notes

subcaption

Chapter 3

Design

3.1 Design Objective

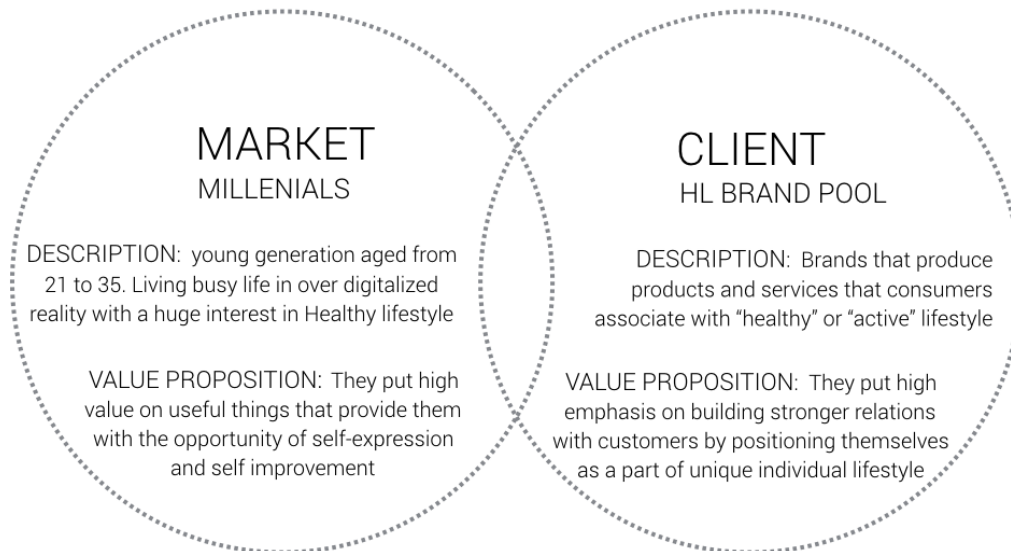
The purpose of this paper is to design a service system based on a mobile application, on the one hand, aimed at increasing people’s daily physical activity through the number of game-techniques that recently gained popularity in gamification of non-game contexts, and on the other hand - aimed at expanding promotional techniques of brands to the new level through building stronger consumer-brand relations.

Thus, in addition to gamification, author adds branded incentives, hypothesizing the fact that stronger relationship with brands, especially in terms of supporting one’s lifestyle can build stronger motivation for improving life, becoming healthier and more physically active, in particular. To build such a system it is necessary to understand modern market that includes both consumers, interested in healthy lifestyle trend and companies that are constantly seeking for new ways to attract and retain their customers.

The design is aimed at addressing certain challenges that hasn’t been overcome by existing services. Following the system structure, it involves two main stakeholders such as Consumers and Brands. Since both stakeholders represent quite broad categories it is better to name them as Market and Client to also show their relation to the service system itself, which will be described in details Later, see figure 3.1.

Market represent people that are interested in improving their health habits but don’t consider “healthy living as their first or even second priority, therefore, aren’t motivated enough to change their health behavior. Client is represented by producers of goods and services that are associated with a “healthy” or “active” lifestyle, and are looking for an extension of their brand loyalty to a new more effective levels.

Figure 3.1: Stakeholders map



3.2 Understanding the User

As it was discussed in the first chapter, in the design of the service author focuses on young generation aged from 21 to 35 also known as millennials, because this is the age when people are least conscious about their health, while putting higher priority to the other aspects of life such as study and work. At the same time, investing into health at this age is important to avoid or reduce the possibility of NCDs later in the most productive age, when it can negatively affect not only the overall wellness but also professional life. The global survey conducted by the author of the paper identified certain patterns that unite millennials today in addition to those that were discussed in the first chapter. These patterns were used for the design to deliver a well-tailored solution for the exact target group.

3.2.1 Global survey

According to the survey conducted by the author among 380 people, almost 86% of respondents were not satisfied with their health & wellness. However, even being not satisfied more than half stated that their lifestyle is inactive or has a

very small amount of physical activity, see figure 3.2

Figure 3.2: Survey results 1



As for reasons that prevent people from maintaining healthy lifestyle, first of all people don't have enough time for that, since they are occupied with their main life priorities: work, studying, family. This logically leads to the next reason, which is lack of motivation. The lack of motivation based on the prioritization of tasks was discussed by the author in the first chapter and now it is supported by the results of the survey. In addition to that, most of them consider changing healthy lifestyle as a switch to a more expensive consumer choices, which is undoubtedly a hard decision.

Nevertheless, respondents also pointed two things that can motivate them the most: the ability to see results as soon as possible and ability to be rewarded (mentally or physically) when achieving a goal. The same survey also covered people's relation to brands and reasons why they use their loyalty services. The results showed that 77% of answered people can describe themselves as "Brand-lovers", regardless of whether they have or don't have their favorite brands, see figure 3.3.

In addition to that, according to participants' answers, they stay with the certain brand for 4 main reasons. Undoubtedly, the first two are connected to the quality of the product/service and its style, but what is more important, in the

number of different answers the most common were: “The way they communicate with their customers” and “The message they deliver to their customers”.

Surveyed people also pointed 3 big reasons why they use loyalty services of certain brands, see figure 3.4. According to that, people use loyalty services provided by brands to be closer to the brand itself and have the feeling of being a part of something unique, which supports the idea of brand as a self-extension, covered in the second chapter. However, the most important reason for using those services of course lies in the fact that people want to have an access to special/ premium services that can provide them with some perks and bonuses in form of discounts, special offers and so on. Thus, the rewarding of certain choice (here, purchasing choice) still remains the main motivator for making this choice. in the Fieldwork section author again touches the idea of rewards and incentives but in a more individual case to show the whole spectrum of possible motivators that depends on the goal that person is trying to achieve, his/her lifestyle and social circle.

Figure 3.3: Survey results 2

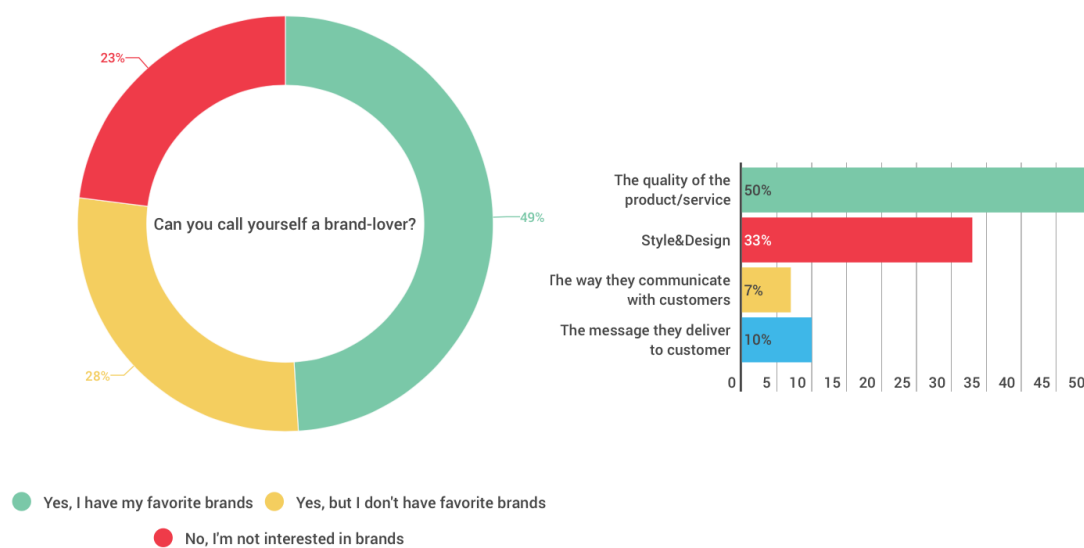
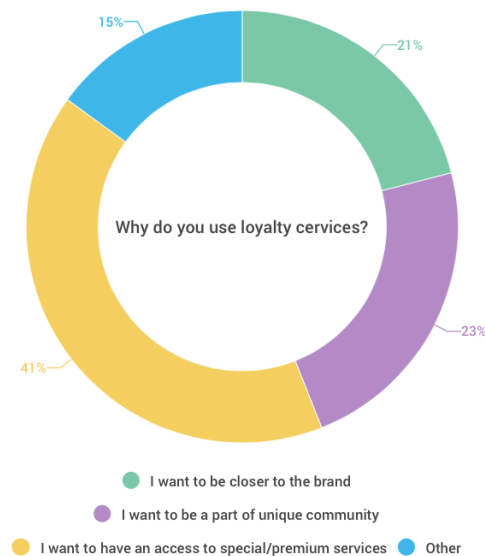


Figure 3.4: Survey results 3



3.2.2 Fieldwork

The fieldwork, conducted on a user that represent the target audience of the design concept, was aimed at studying the process of decision making towards the increase of physical activity, see figure 3.5. This fieldwork discovered the behavioral model of the fieldwork master together with factors that influence his behavior and his decision making step by step.

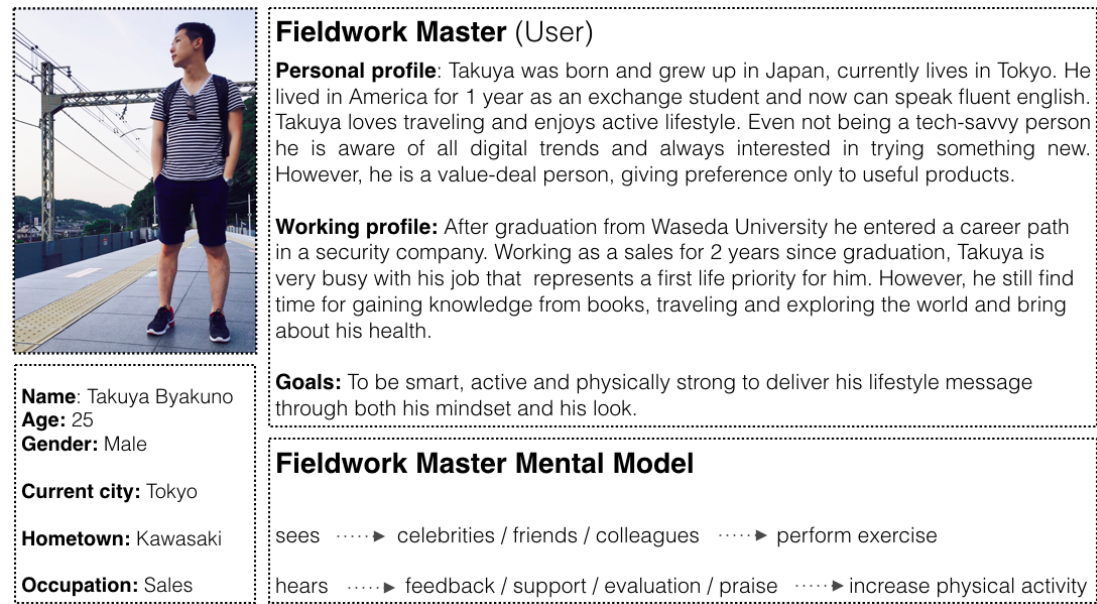
The author observed the user at his home doing a set of short workouts to increase muscle mass in certain parts of the body. The user is a 25 years old man in the beginning of his professional life as a sales in Tokyo. With a busy life where work is on the first place he still likes to enjoy his own time that he tend to spend with friends and his girlfriend. Always seeking for new experiences like other millennials he is interested in new technologies but not a tech-savvy, putting value only in things that are useful for his daily lifestyle.

As most millennials he is seeking for value-deals, so when it comes to shopping, anything that can provide a better deal or a cheaper price is a huge reason for making a purchasing decision. Thus, shopping is considered as a joyful experience, even more joyful with value-deal situations. At the same time, being exposed to all kinds of media he is aware of healthy living trend and has his own personal value in maintaining active life. However, with the highest priority put on work

it is hard for him to find time and enough motivation to switch to a more active lifestyle. He is constantly seeking for easy ways to improve his physical state, i.e. strength and look.

According to the user, by the time the fieldwork was conducted, he was already working out at home regularly for about 1 month and successfully continued this health behavior change without abandoning it after 1 week like he used to do with other attempts on increasing daily physical activity. This aspect motivated the author to find out those triggers and patterns that made person successfully implement this health behavior change and, what is more important, to continue it.

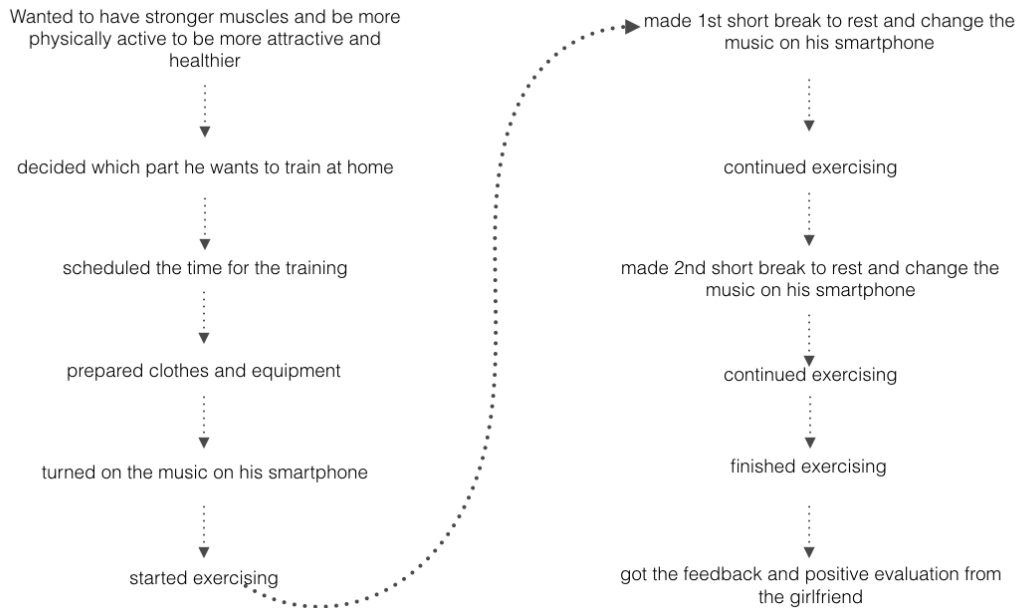
Figure 3.5: Fieldwork Master



The action that was observed is explained in the sequence model in details, see figure 3.6. It is important to notice that almost every time the action was exerted it was performed in front of the “significant other” - the partner, who shares lifestyle values with the fieldwork master and represent a person that provides three main motivational functions: encouragement, evaluation and feedback. All of these three are received by fieldwork master immediately, before and after the process of performing an action. The presence of significant other and the ability to get the feedback from this person straight after performing the action

as well as a clear perception of the fact that the action is constantly (but not obviously) observed by significant other were found to be crucial for forming a positive attitude to a new behavior and, thus, helped to maintain this behavior.

Figure 3.6: Sequence Model



If we take a look at the cultural model, we can have the understanding of all possible factors that influence fieldwork master in terms of healthy living and physical activity, see figure 3.7. While the influence from Media, Celebrities and Brands goes only in one direction, providing the perception of what healthy lifestyle and active lifestyle is, how it can be achieved and what is the physical visualization of it; Colleagues, Friends and Girlfriend, as his social circle, provide fieldwork master with certain types of feedback that help to create the perception of himself as a person trying to be more active in order to maintain healthy lifestyle. Those parties of the cultural model that have mutual influences with the fieldwork master were found to have a greater impact on the implementation and maintenance of new behavior than those who provided only one-side influence. Therefore, when the fieldwork master had a particular value proposition to the party and was able to receive a feedback on taking action, the motivation for taking action next time was high enough to make the action regular. For instance, the strongest influ-

ential bond was discovered between fieldwork master and his girlfriend. As for the fieldwork master, the desire of being physically strong and attractive for the girlfriend was his value proposition to her, while the acceptance of his values, encouragement, evaluation and feedback were her values that she communicated to him.

The environment where fieldwork master was exerting his action - home, provided him with flexibility on how and when to perform the behavior as well as with comfort, which was found to be an important factor for creating positive attitude towards implementation of new behavior. In addition to that, artifacts that he used for the action such as smartphone, wristband, sportswear and yoga mat helped to slightly change the comfortable environment of the home to a more appropriate one for the physical activity. However, according to the fieldwork master, some of the artifacts were distracting him from the action, such as smartphone, which he used to play the music. Moreover, wearable device didn't make any sense for him and he reported that has an intention to abandon it in the future.

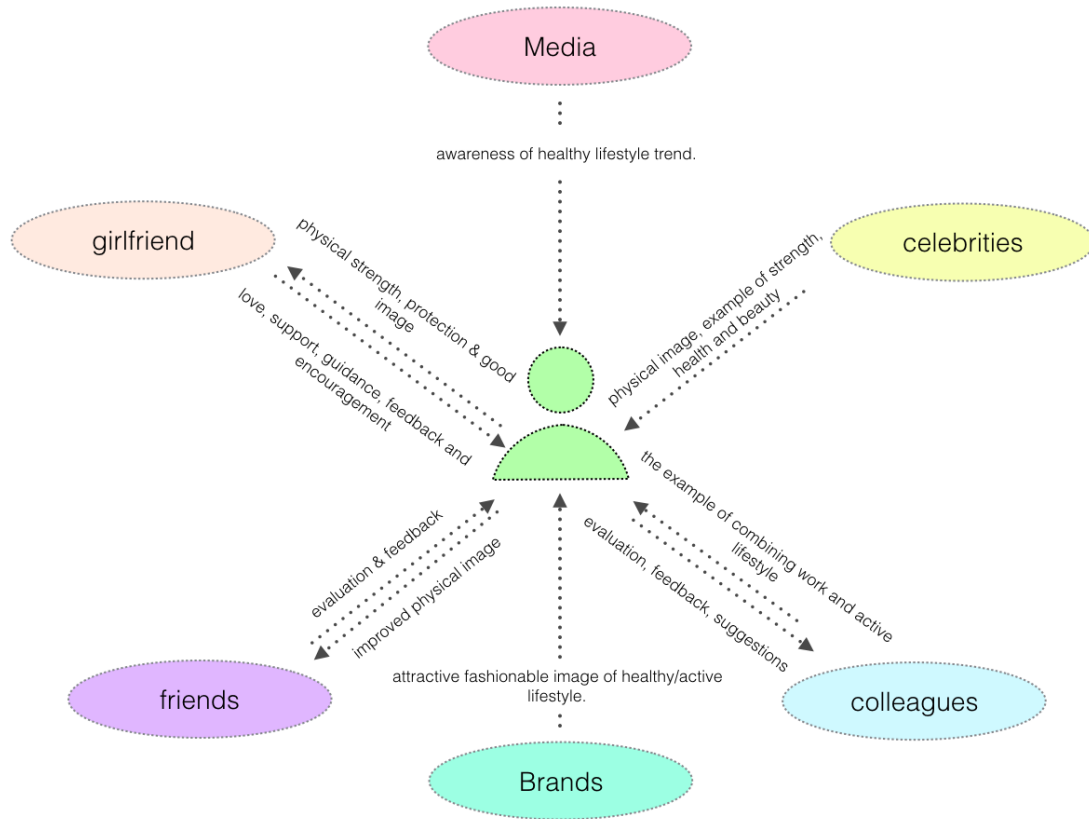
Mental Model

The analysis of the fieldwork master study conducted on one of the representative of the target user group helped to get the deeper understanding of decision making process and factors that affect it in a very personal case, to eventually build a mental model of the master.

According to the observation, the fieldwork master's decision on taking an action on changing his daily physical activity was influenced by many factors including internal and external motivators. However, the immediate feedback provided by significant others, with whom fieldwork master had the closest bonds based on the level of trust and shared life values, led to the positive perception of an action and motivated for the maintenance of the new behavior. Moreover, the aspect of mental "gratification" from the closest significant other in form of direct praise and admiration provided fieldwork master with feeling of meaningfulness of the action that he was taking.

Overall, the immediate, and what is more important, valuable feedback that makes sense to the proposed value together with the certain type of gratification create a powerful mix of personalized motivators empowered by the bonds of trust and respect towards the person who provide these motivators. The implementation of this clear mental model in other fields besides the human interaction can

Figure 3.7: Cultural Model

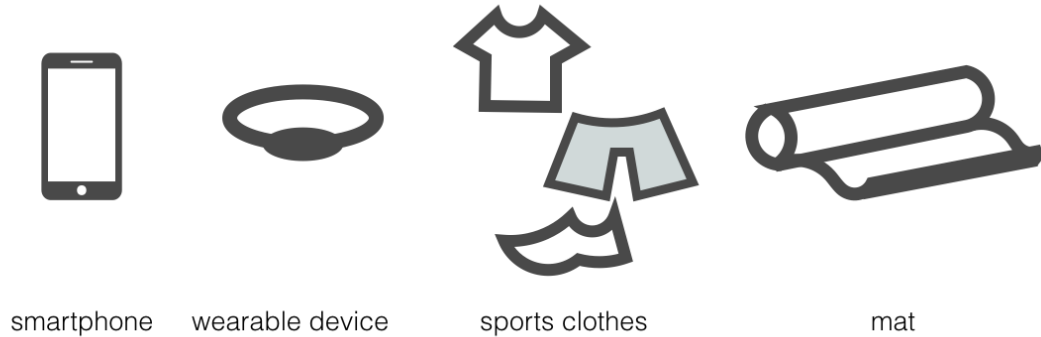


have a valuable contribution to the improvement of the existing systems. Thus, the mimicry of human-to-human relations in marketing that is already taking place in some forms can extend the limits, to which brand loyalty is existing today.

3.3 Design Concept

Based on the initial idea of creating a service that can bring customers and brands together providing them with mutual value on a new level of digital marketing in combination with a deep research on existing works in featured domains as well as with the study of the target audience and particular Fieldwork Master to build a mental model, author came up with the concept of the service and its' design. In addition to that, with the help of professional designers and software developers

Figure 3.8: Artefact Model



this concept was reshaped and redefined from its' first ideation stage to a concept that was tested within a user test group. In this part author will describe both the service part in form of a business concept and the design part in form of the design of mobile application.

3.3.1 Design inspiration initial concept

The motivation for the initial idea came from a loyalty service based on mobile application called Brandy, which originated from Russia and entered the market in the end of 2015 ¹. Brandy is a service that uses a well-known in loyalty programs gratification system that reward customers for purchasing goods of particular brand. Mainly focusing on local coffee shops and diners, this service has a unique mix of approaches, which differentiate it from other mobile loyalty services. It gives personalization combined with gaming experience, where personalization is performed through *brands-as-friends* system, while gaming experience is delivered through well-known points, level-ups and opportunity to compete with other users ².

What does *brands-as-friends* system mean? When customers get points, discounts or any other financial gifts in exchange for their commitment to the brand, it is a well-known and easy understandable logic of brand loyalty service. However, when you add an emotional factor to the simple pointing system it becomes more than just incentivizer for further purchases of goods or use of service. Adding a human-like factor, a friendship to the non-human interaction, provides customers with a new relational experience. Hence, Brandy gives it's users not just rewards

but also an ability to experience different levels of friendship with providers starting from just friend and turning into a best friend of the brand. By implementing one simple logic and combining it with already widely used techniques, this service could provide users with a brand-new experience. Although this company is still at the beginning of the journey, the number of clients, i. e. companies that provide their services in exchange for loyalty is constantly growing.

Taking into account the idea of human-like interaction as a way of personalization of relational marketing, author decided to expand the idea of brand loyalty to a newer level.

The design concept “Fit Hub” is a service based on mobile application that is aimed at encouraging young people to increase their daily physical activity through the mechanism of branded incentives. While users get incentivized by real physical rewards provided by brands and, at the same time, by relations that they build with them; brands move their loyalty to a new level, where they reward people not for just purchasing their goods and services, but for choosing a lifestyle that they share with them, thus, building stronger personal relations with their customers.

The business concept will describe the logic of the service in more details emphasizing its’ value for both, potential users and brands that can use this service as a unique marketing solution.

3.3.2 Business concept

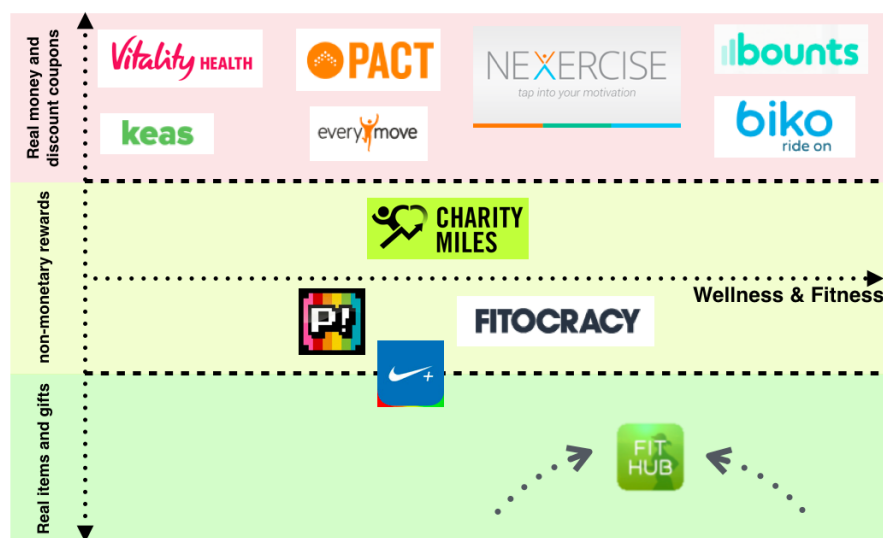
Many today’s loyalty programs that are based on rewarding and promotion as a motivation for action, and that are already expanding beyond the Internet on personal computer to mobile Internet, are becoming more and more popular and more effective. However, the range of the gaming techniques still remains on the level of incentivizing the purchase or the usage of a service, while modern consumer is aware of the fact that such a “close” relationship with brands, created through a variety of loyalty programs, is nothing more than just a way to attract and retain customers. Currently, consumers are looking for something more than just good service. Consumers are looking for personalized service, personalized product that smoothly flow into their unique daily life and, what’s more important, help to improve it.

Active lifestyle trend represent one of the areas of millennials’ daily life. The popularity of this trend makes even the most distant from “healthy lifestyle” concept brands to change their marketing policies. In addition to that, the intro-

duction of self-monitoring systems in the form of wearable devices or as one of the million functions inside smartphone, is changing marketing drastically, making it customer-oriented like never before. However, surprisingly, the use of “active lifestyle” as one of the channels of loyalty has not been considered as an extension of marketing tools in terms of building stronger consumer-brand communications.

Obviously, service that is aimed at rewarding people for their physical activity is not an absolutely new idea. Nevertheless, existing systems represent very local, hardly known outside of their geographical location services. In addition to that, the spectrum of rewards is ranging from non-monetary like points and badges to monetary rewards such as coupons, discounts and real cash. None of existing services are using real products and physical rewards in form of items, gifts and surprises, see figure 3.9.

Figure 3.9: Current Market Saturation

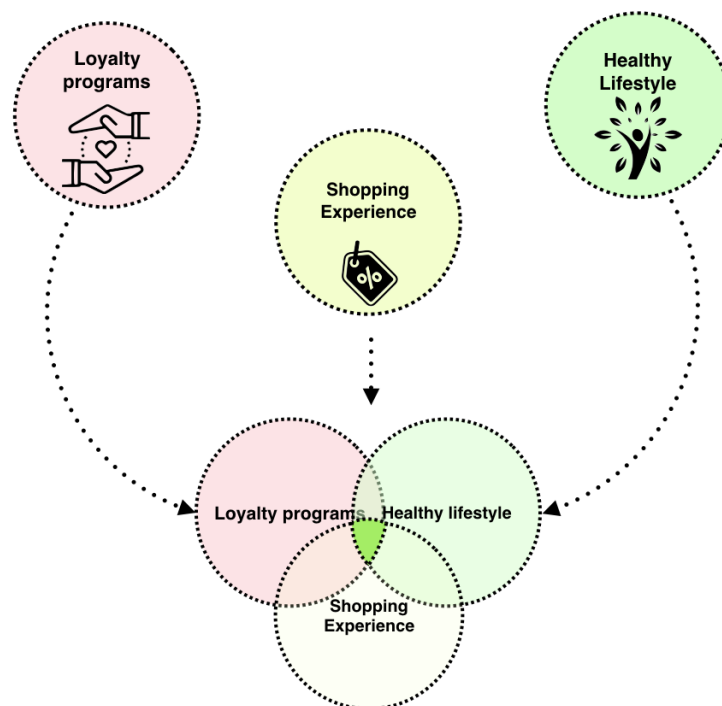


The main factor that brings together all of the existing services is the lack of brand as the main representatives of the system of incentives and rewards. The interface of mobile based services as well as of the web pages does not give the feeling that brands are “involved in the game” for a healthier and more active life and remain unnoticed by users. However, it is this niche - the niche of providers of rewards that can be a turning point in building relationships with brands at a qualitatively new level.

Brands like *Nike* and *Under Armour* are gradually trying to build their own

complex systems of incentives and motivations for an active lifestyle, but like with all ordinary loyalty programs, consumers today don't want to have 100 different discount or membership cards. They want a single, simple, understandable and user-friendly system, where they can decide how to redeem their points by themselves. Basically, this takes online shopping experience from stores to mass-loyalty systems. Taking this already transformed experience and adding a new layer of "healthy lifestyle" brings directly to the concept of Fit Hub, see figure 3.10.

Figure 3.10: Three layers of Fit Hub service



As it was mentioned earlier, Fit Hub represent a service that is based on mobile application. This application allows users to earn Fitcoins for reaching certain amounts of steps every day and use these Fitcoins as a digital currency to buy goods and services inside the online store within the mobile application. Products inside the application are provided by brands that represent a market of "Active lifestyle" goods and services such as Nike, Adidas, New Balance and so on, also including fitness club chains.

Together with earning Fitcoins users can also set their own goals (for example: 10 000 steps per day), and by reaching this goal every day, they can get personal

feedback from their favorite brands or brands that represent the highest value to them. A feedback in form of awards and real gifts for the ability to maintain the process of achieving goal for a long term, which is required to build a new behavior pattern, see figure 3.11.

Figure 3.11: Fit Hub concept description



The service standing behind the mobile application represents a facilitator that brings customers and brands together on one platform, providing first with incentives and second one - with customer's loyalty to brands. In the Service Flow Model you can see how stakeholders are communicating through the system provided by Fit Hub, see figure 3.12. As it can be seen from the model, Clients that are represented by producers of "active lifestyle" goods and services are the main financial flow since they use the platform as an external promotional tool and what they receive from the service is customer's loyalty. Undoubtedly, the term loyalty here is too broad and give very vague perception of how this marketing strategy can be profitable for the company. However, there are those techniques of indirect marketing that have a very logical and understandable scheme of efficient marketing campaign. This includes almost all possible measures of indirect marketing like Cost Per Impression (CPI) or Cost Per Mile(CPM) and Cost Per Click (CPC also known as Pay Per Click), where advertisers pay for "impressions" such

as *likes*, *views*, *shares* and *clicks* on adds. Furthermore, Cost Per Lead (CPL), where brand advocates are paying for the actual subscription or sign-up from a consumer that is interested in the advertised content; and conversion marketing that measures all people that actually turned from just webpage/app visitors into paying customers. In addition to that, there are some exclusively mobile marketing techniques that could also be implemented. These includes “Active page dwell”, which is showing the time that user spent on the page/screen focusing on the browser window, as well as “Interaction rate” that includes all possible actions with the marketing message ³

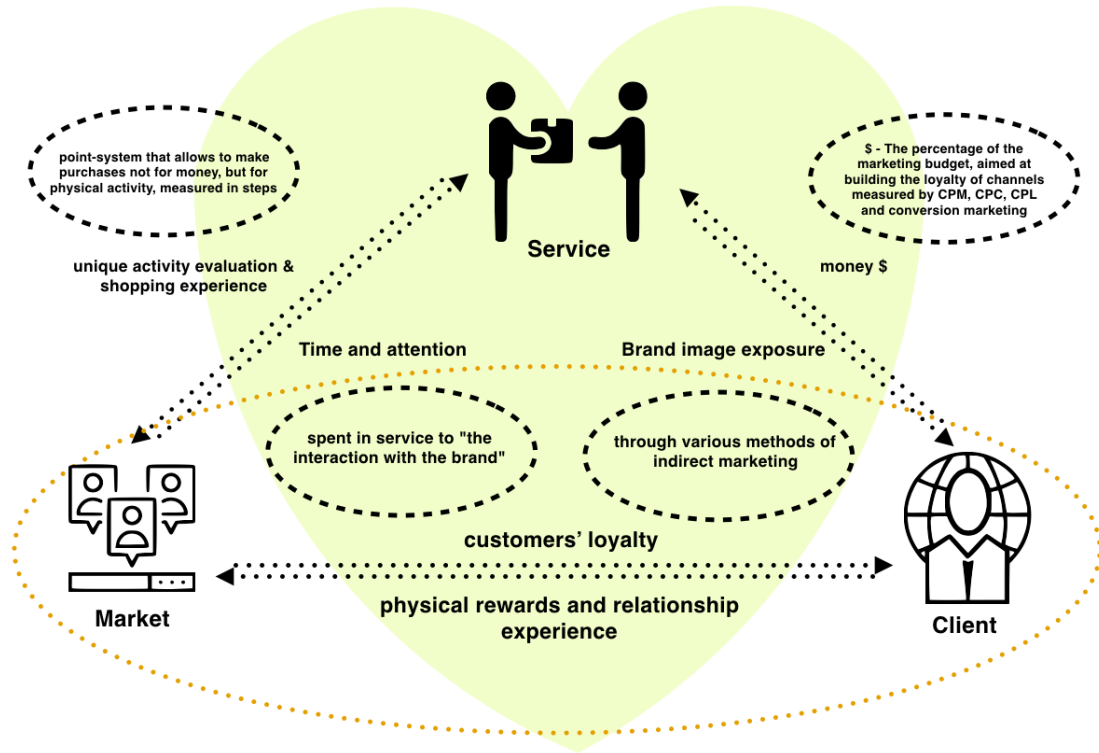
As for the Market, which is represented by direct users of the service, what FitHub is providing them with is their activity evaluation and rewarding system that turns their physical activity into money equivalent - Fitcoins, by using which users can have unique shopping experience. While creating this shopping experience, service can get the information about users and their brand preferences. Thereby, service can create a unique communication channel tailored for each user personally, see figure 3.13 and figure 3.14. Eventually, the loyalty inside the service is built not on the purchasing power of the user but on his/her lifestyle choices, i.e. choices to be healthier, stronger and fitter. In the designed system service represent an invisible expert that establishes communication between two parties: target market and client, that are users and brands. Unlike existing services, Fit Hub put in the center not the service itself but brands that are direct suppliers of incentives and rewards.

3.3.3 Design of Fit Hub

Since the service model was discussed above in details, in this section author will talk about the main functions of the mobile platform that were created based on the fieldwork study and the survey that helped to get a deeper understanding of the target market. Before the detailed discussion of the application’s functions, let’s first take a look at the Basic Key Path (BKP) model. This BKP model represents an overall view on the user experience including the time when user is interacting with the application and not interacting with it.

Basically, the process of interaction with the application is a mediator between two actions that are taking outside the application. The first action is the action of tracking physical activity that requires person to download the application and perform the initial setup (only one time action), and track biometrical data (steps) with either the smartphone, wearable device or both of them. The 1st layer of the

Figure 3.12: Service Flow Model



application provides a converter of steps into the virtual currency system proposed by the service, to turn physical activity into measurable item that has its' value inside the system, while the 2nd layer provide the communication experience between consumer and brand. Finally, the second action outside the application is a process of receiving a physical reward that requires users to go to the store.

3.3.4 Game mechanics - rewards

One of the fundamental features of the service is a unique pointing system that is used as a gamification technique inside the application. This system combines 3 variables, which are steps, points for the physical activity - *fitcoins* and prices of goods and services represented in dollars. *Fitcoins*, that are used as a digital currency inside the application, bring steps and prices of goods and services together in one platform. Thus, steps are converted into *fitcoins*, while at the same time

Figure 3.13: Service functionality (a)

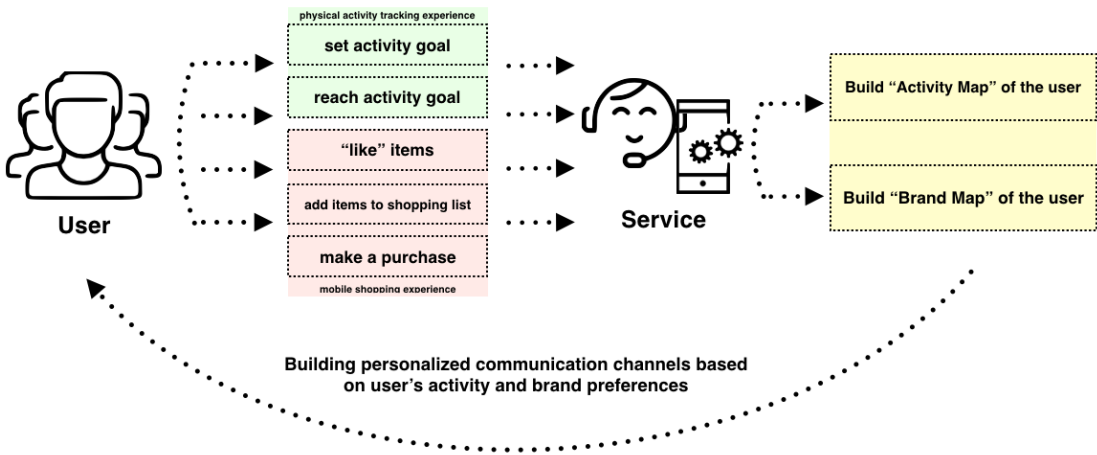
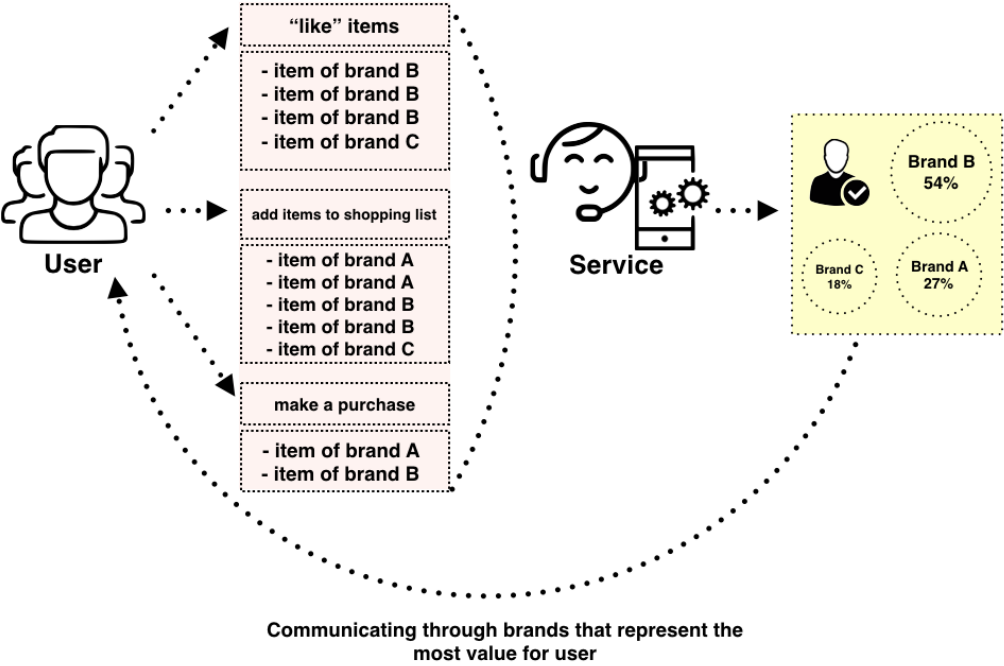


Figure 3.14: Service functionality (b)



fitcoins have a certain exchange rate with dollar based prices of goods and services just like a real currency does. To get a better understanding of how rewarding system works let's take a look at the game mechanics of the FitHub.

The described mechanism here is based on several assumptions for the simplicity of the game logic. First of all, since originally it's a physical activity monitoring application based on step counter and goal setting, 3 categories of goals that are based on activity differentiation by Tudor-Locke were designed ⁴.

Figure 3.15: 3 categories of activity goals



It has to be noted that this service is designed for daily step tracking that does not include other types of activities yet, again, for the simplicity of the research and purity of the design. As for now, the highest possible goal in the system is 12500 steps. According to Tudor-Locke research, all activities that counts 12500 steps or more should be regarded as a "high physical activity" that besides moderate activity also can include some intensive exercises, workouts or sports. Thus, all steps above this are not included into design and research.

The first assumption: Let's assume that if 10 000 steps, which represent the bottom line of the 3d category, are taken everyday throughout 60 days, it becomes a behavior. This assumption is based on the statement of Health Behavior Research Center (UCL), which says that around 66 days is needed to set a new

habit ⁵. 10 000 steps are taken as a common understanding of the active daily lifestyle, that became a trend for goal setting activities based on steps.

In addition to that, according to the research on market prices of the most famous and most expensive apparel and footwear category of top 7 main sports wear brands - sneakers, it was found that the highest price of this item category lies between 200\$ and 250\$ ⁶.

Figure 3.16: lowest and highest prices of footwear of top 7 sportswear brands

	<i>footwear (including running, training and lifestyle shoes, football, basketball, hiking)</i>		
	lowest	highest	common price
<i>Addidas</i>	48 \$	245 \$	180-160 \$
<i>Nike</i>	65 \$	275 \$	100-130 \$
<i>New Balance</i>	60 \$	249 \$	80-100 \$
<i>Puma</i>	77 \$	412 \$	154 -191 \$
<i>Reebok</i>	33 \$	185 \$	90-120 \$
<i>ASICS</i>	60 \$	184 \$	75 - 100 \$
<i>Under Armour</i>	52 \$	170 \$	98-130 \$
<i>Average</i>	56,43 \$	245,7 \$	

The second (main) assumption: We assume that within 2 months (or 60 days) of reaching highest goal (10 000 steps) everyday, person can earn enough *fitcoins* to get the item at the highest price in the store inside the application. Thus, 60 days of 10 000 steps goal everyday are equal to 250\$, and 1 step will cost 0.00042\$. In this case person is rewarded with the best, according to price, product for being able to increase his/her physical activity and turn it into a habit.

$$600,000st. = 250\$$$

$$1st. = 0.00042\$$$

The third assumption: Let's also assume that the highest price 250\$ is equal to 7000 *fitcoins*. Here we can use any number for defining the price of *fitcoins*,

however, it is better not to use number like 10 000 not to make users confused with number of steps and *fitcoins*, since their relation is not 1-to-1. It is also better to avoid big numbers like 11 000 and above not to make the user interface too disturbing as it already has a lot of numbers included. Thus, it can be assumed that 7000 represent one of the possible “golden mean” solutions. From here we can express steps by *fitcoins*. Now, for amount of steps lying in the interval between 10 000 and 12 500 (for 3d category) 1 step costs 0.01176 *fitcoins*.

$$250\$ = 7000ftc$$

$$1\$ = 28ftc$$

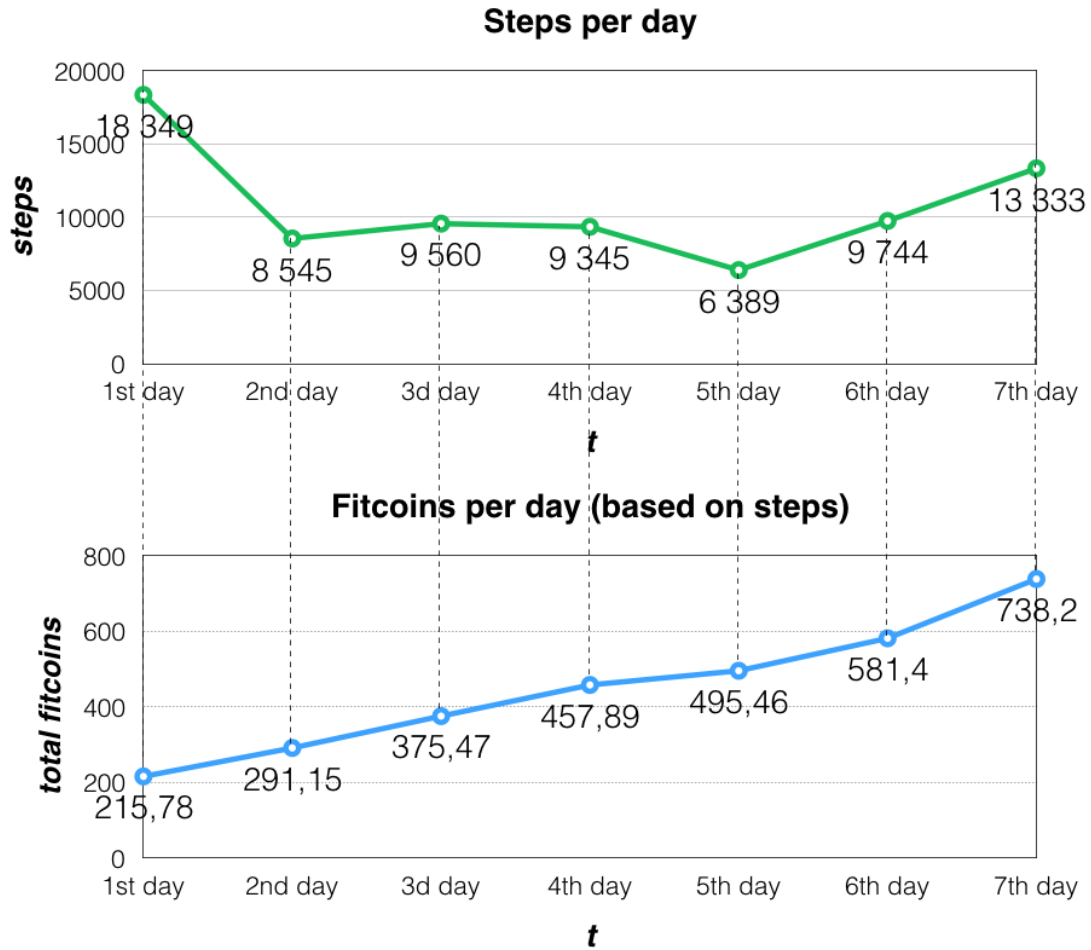
$$1st. = 0.01176ftc$$

Since 7500 steps, which represent the bottom line of the the 2nd category, is 75% of 10 000 steps that can be regarded as 100% as a highest goal in the system. The price of 1 step for the 2nd category is 0.00882 ftc. The same goes for the 3d category where 5000 steps represent 50%of the highest goal. In this case 1 step costs 0.00588 ftc.

To have a better understanding of the the whole mechanism the author created a visualization of a 7 day steps record, based on the personal data of the author taken from iHealth application on the iPhone, and applied the introduced technique. The first graph represent the number of steps recorded each day during a week, while the second graph shows how many *fitcoins* person earns depending on the amount of steps he/she takes. As it is shown in the chart 2, the amount of steps reached during the day goes to 1 of the 3 categories, and according to that a coefficient is applied to get the exact amount of *fitcoins*.

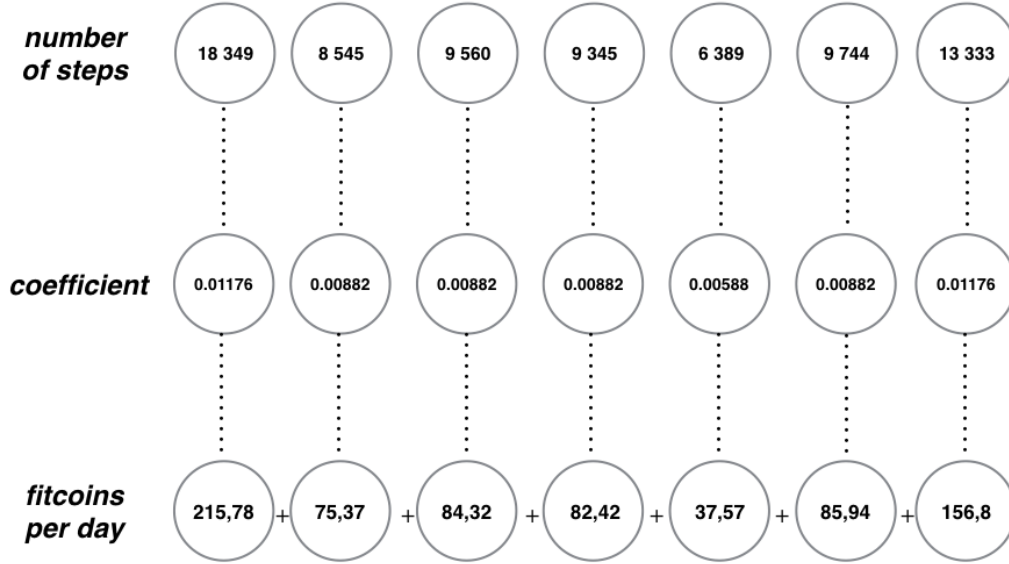
As it can be seen from the chart 1, *fitcoins* function supposed to have a constant growth, since the mechanism provides only increase in *fitcoins* profit. However, it is important to notice that in reality this function, unlike the real exponential function, does not grow constantly as it can have a “plato” moments, when person take the number of steps, which is lower than 5000. In this case there is no daily increase and the total amount of earned *fitcoins* is not changing. It is also should be noticed that the function is discreet, since people can spend their earned *fitcoins* on buying goods and services in the store inside the application. Once person spend his/her earned *fitcoins*, the discontinuity appears at the point (day) when this money were spent.

Figure 3.17: Rewarding Mechanism. Chart 1



As for now, the whole mechanism was build depending on only one item category, which is sneakers. For the real business implementation of this technique it is necessary to expand this model to other featured categories of goods and services, and this will undoubtedly require the extension of the model and addition of new variables, and, eventually the creation of the formula. Nevertheless, the core logic is based on three categories of physical activity that provides user with the understandable relation between steps, introduced in the system, and digital currency based on steps; as well as relation between real market prices of items and their representation in fitcoins that is based on two factors: the highest price of the item in certain item category and the ability to get this item, once your habit is set (in two months).

Figure 3.18: Rewarding Mechanism. Chart 2



Besides the mechanism of earning fitcoins that represent gamification of the service, personalized interaction between brands and users, aimed at encouraging second one for maintenance of their achievements, represent one more unique technique.

3.3.5 Loyalty mechanics - personalized interactions with brands

Since, Fit Hub service is not only an evaluating system for the physical activity performance but also a space for expanding companies' promotional activities through building stronger relationship with already existing and potential customers, loyalty mechanics inside this service represent a combination of certain measures aimed at defining existing loyalty segments and reaching them in the way that is most suitable for them.

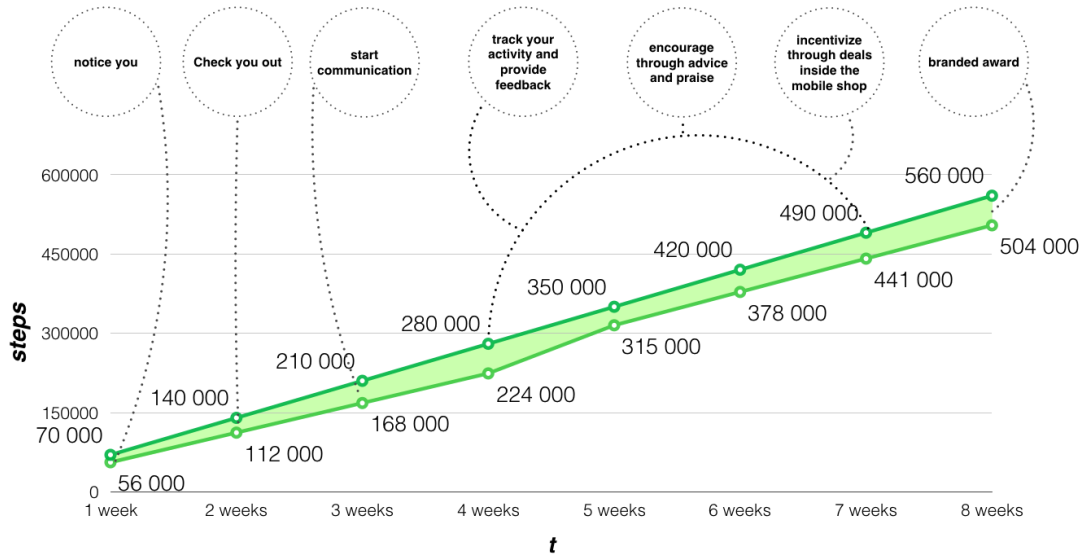
From the very fundamental idea of the service, the loyalty technique implemented here is different from those typical loyalty mechanics that are based on the purchasing decisions of the customer. Originally, customer is found to be loyal when he/she continuously buy the product or the service of a certain brand

regardless of existing competitors in the same field. However, today's customers are smart enough to feel that they are *liked* by the brand only because they continue to spend money for the products and services of this brand. This attitude lack human-like interaction and personalization as well; while this two factors are becoming drivers of the market where millennials show their modern preferences. So how does Fit hub service solve the problem of no personalized communications with brands?

The "Activity Map" described earlier in the text, represent a statistical view on user physical activity performance that gives a service a precise understanding when and how to act, see figure 3.13. In this situation service create a scenario of communication with the user as if it was a brand. For example, user decides to set a goal of 10 000 steps per day. Since, the main aim of the application is to help people to increase their daily physical activity, which means implementing a new behavior, the factor of longevity becomes a core element here. Thus, the communication with the brand can start only if the user is able to maintain his/her goal for a certain period of time. In our situation, the goal is to step 10 000 steps every day during a week, two and unless it turns into a habit, which, as it was mentioned in the previous section, requires about 2 months or 8 weeks. Undoubtadly, it is impossible to have the exactly same amount of steps every single day. In this case, it is reasonable to create a 10-20% margin so that the user can still be flexible in terms of reaching the overall goal and not be discouraged by the fact that he/she is not reaching 100%every day.

As it can be seen from the chart, each stage of the physical activity performance aimed at reaching and maintaining the goal also represents a certain stage of the communication with the brand. Starting from just "noticing" and "checking you out" brands further move to the feedback on user's performance and encouragement, ending up with the "awarding" user for their lifestyle choice. In the best case scenario this journey continues for 2 months of users' commitment to the certain goal. Of course, the reality can be far from the best case scenario and in this case there are possible changes in the communication style. According to the user performance, brands can suggest the user to choose a lower or a higher goal, which can bring them to the award of a different value. At the same time, the communication flow can extend in time and slow down if the user is unable to maintain the goal in the way that is required by the loyalty mechanics of the service. But how exactly brands communicate with users, and how brands decide whom to communicate with? This is exactly where the "Band Map" is needed,

Figure 3.19: Loyalty mechanics 2. "Activity Map"



see figure 3.14.

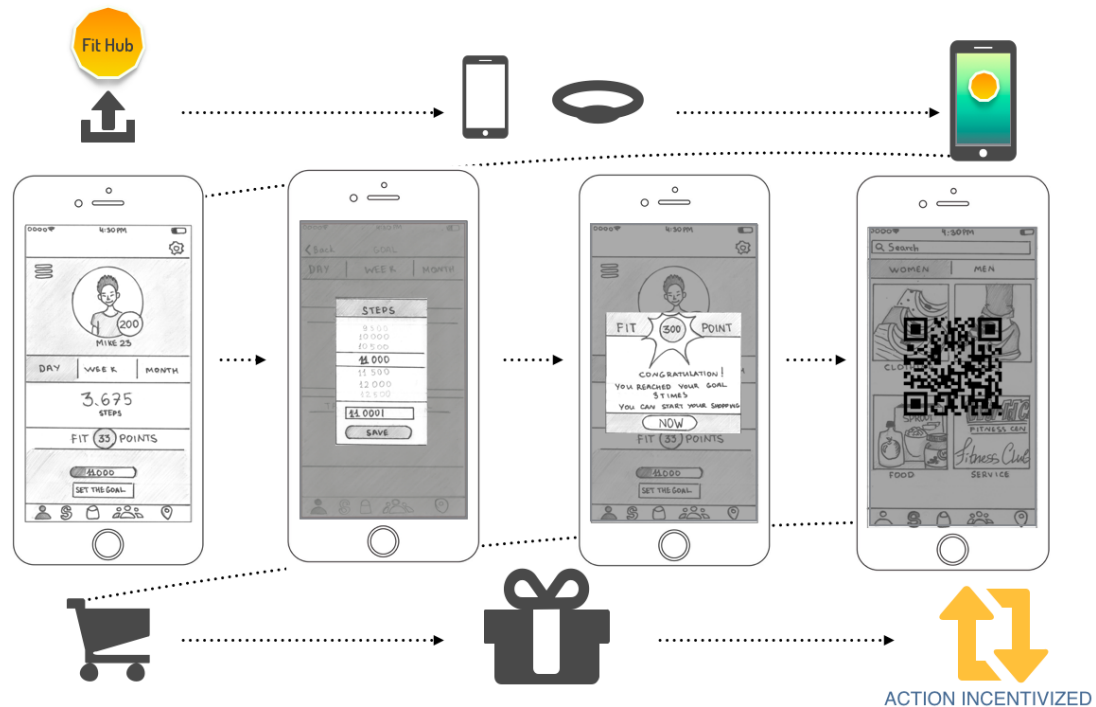
By tracking user's activity inside the mobile shop, service can get the information about user's brand preferences. Three shopping activities such as "liking" items, "adding" them to the wish list and "purchasing" them inside the system, gives the user an opportunity to express his/her preferences towards favorite brands. When receiving this information, service can understand the priorities of the user and reach the person through the most valuable channel.

3.3.6 Prototype - mobile application design

To implement all techniques described below, author came up with the design of the mobile application that is supposed to combine two mechanics and provide users with the interface aimed at delivering clear message of what is the main purpose of the application and what value it gives to the user.

The first sketching started with the design of the simple key path that shows the process of first download of the application and its' usage till the moment, when person receive first real item from the store for points that she/he gets from steps. Here you can see 4 initial fundamental stages of the application: creation of the profile page, goal setting, earning points, buying items with this points and getting unique item code necessary to receive this item at the store.

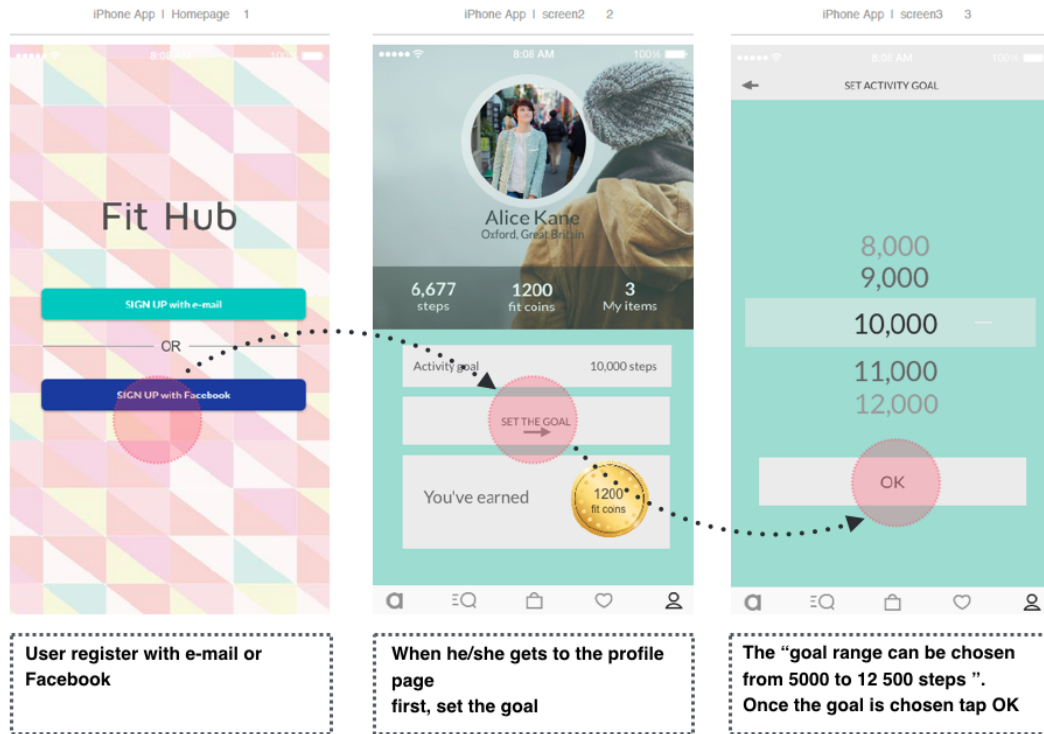
Figure 3.20: Fit Hub Basic Key Path model



In the very beginning, the whole design was focused only on pointing system and shopping experience. Thus, the first wireframe design doesn't include loyalty mechanics providing only the connection between the process of earning points and ability to use them as a "currency" inside the mobile shop. However, first design prototype include more detailed functions in comparison to the raw sketch. Since the design of the service involve mobile shopping experience, the bottom "tab" of the first prototype wireframe sketch was taken from the ASOS mobile shopping application as it represent one of the best "menu bars" for the mobile shopping applications. Even these function were used in the final version of the application design, it should be noted that they do not represent the final application yet. Figures below represent the basic user journey with the description of each possible interaction.

The first prototype was revised by both mobile application developers and designers. According to the feedback from developers' side, since the building of the platform is based on an actual business, to build a prototype for the initial evaluation of the concept it is enough to come up with minimum viable product

Figure 3.21: First Ware Frame Key Path 1



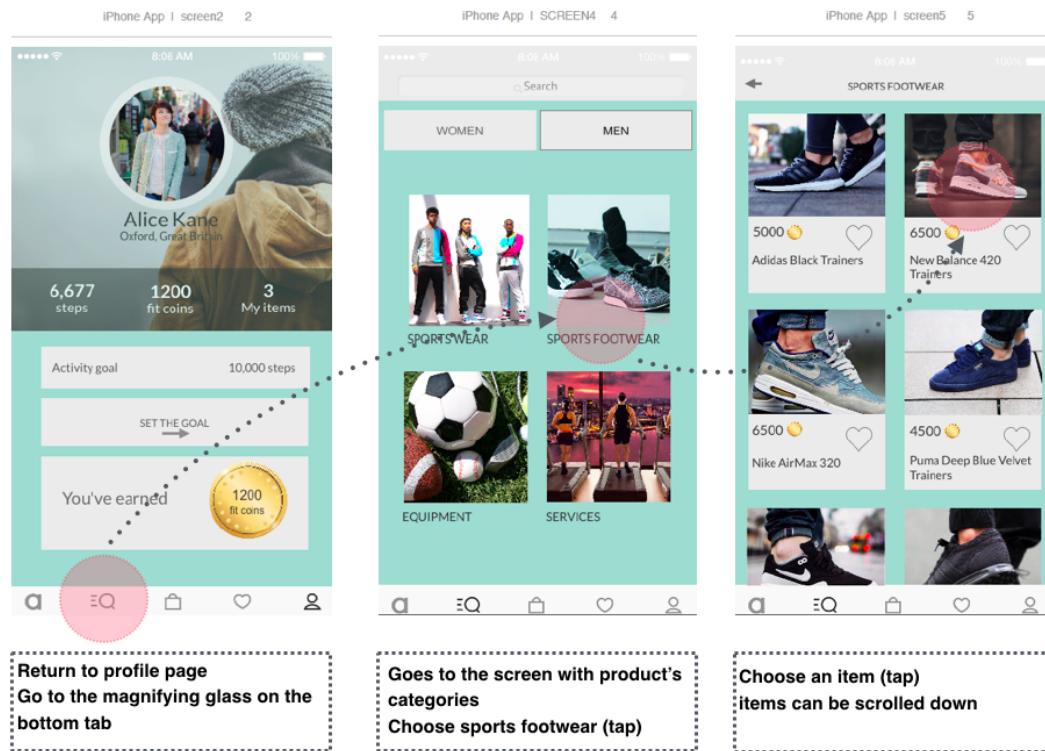
that can deliver the concept and experience to the user clearly. Two milestones for building a service based application with the shopping experience were identified:

1. The necessity of storing user's profiles (while there is no need to store profiles, since the service itself is no established)
2. The necessity of creating a database of items and system to manage this items (while there are no real contracts with clients and no real item database)

According to this and understanding the fact that the real running and fully working application can be created only when the business is established itself, author came up with the Minimum Viable Product Design (MVPD) aimed at delivering the main message of the concept and experience.

The feedback from the designer was concerning the overall design of the application. Author and designer discussed the best color pallete solutions as well as the "tone of voice" to create a unique image of the system. Taking into con-

Figure 3.22: First Ware Frame Key Path 2



sideration advices from both sides, author came up with the second prototype or MVPD that has following features:

1. Registration

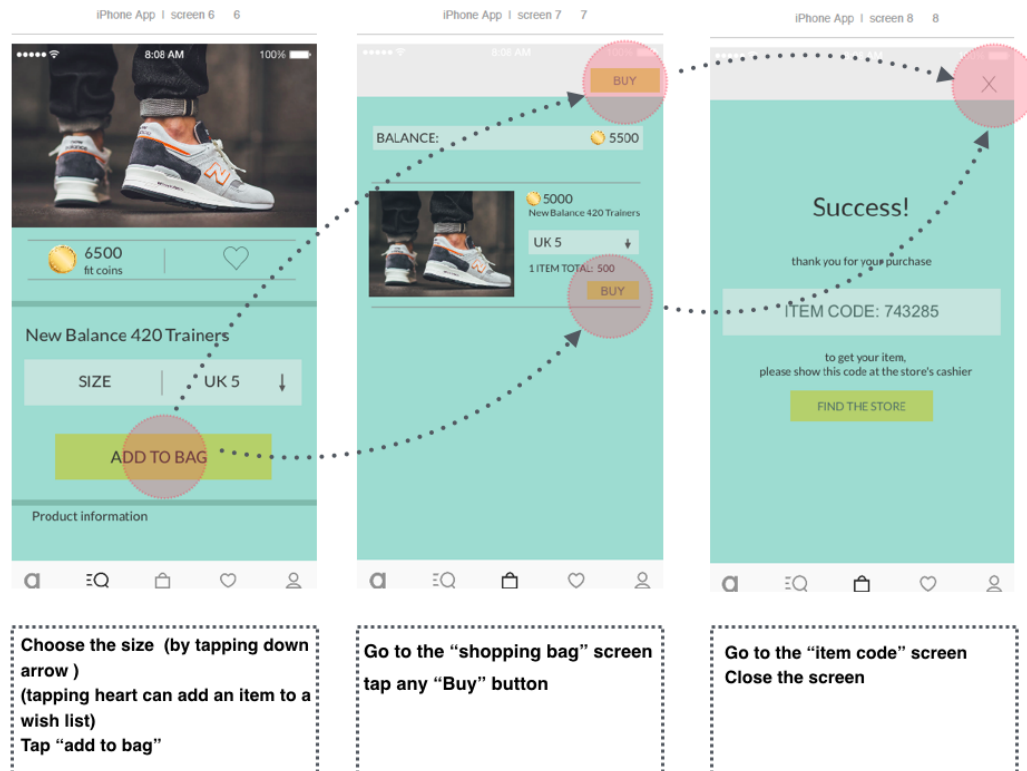
The initial step of most applications is a registration page, which provides user with a convenient and fast way to crate a profile page. Users can either register via e-mail and go through the full registration process or take an easier way and register through their Facebook account.

2. Profile

Profile page consist of three core elements, where each element has it's own function.

- Profile page

Figure 3.23: First Ware Frame Key Path 3



On the profile page user can see some basic information about him/herself including name and profile picture as well as the amount of steps and fitcoins earned.

- Goal Setting

Goal setting provide the user with the ability to choose it's own personal goal within the range of game mechanics, which is from 5000 steps to 12 500 steps.

- Steps statistics

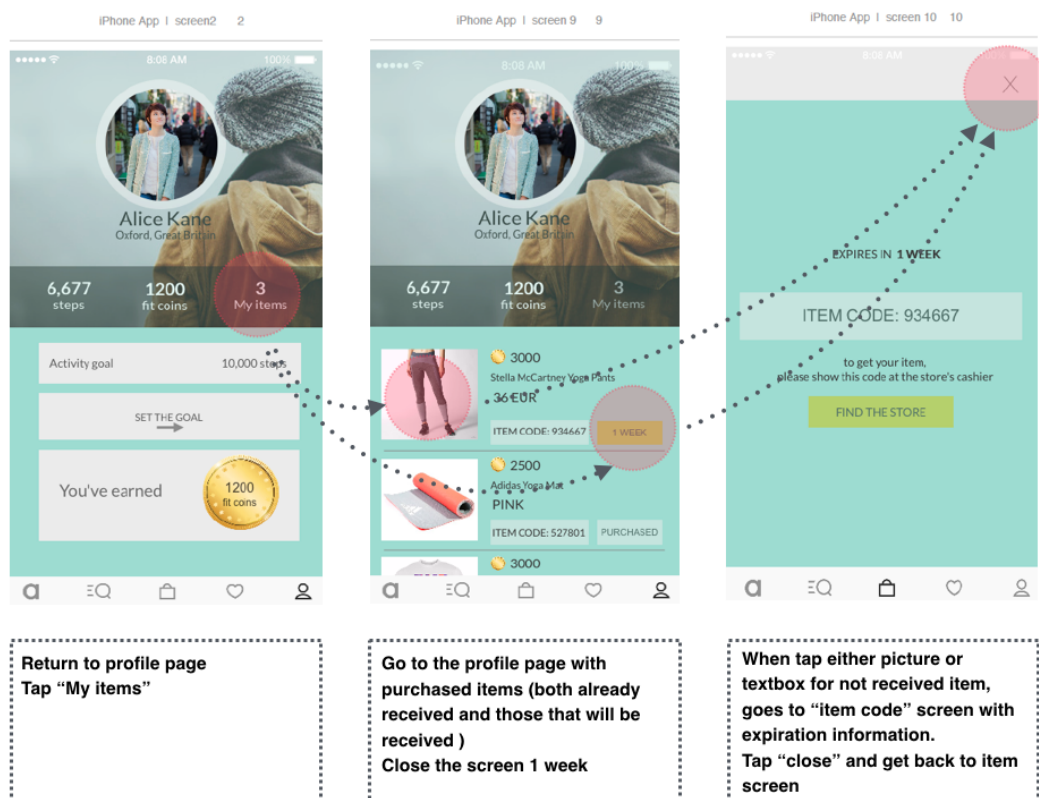
To show the daily/weekly/monthly statistics on how many steps were taken.

- Fitcoin ctatistics

To show how many fitcoins were earned daily/weekly/monthly

- My Items

Figure 3.24: First Ware Frame Key Path 4



This section includes those items that user purchased with earned fit-coins and either received them at the store already or still pending.

3. Awards

Awards provide a channel for establishing a consumer-brand communication, where preferred brands send a personal message to the user together with a gift code.

4. Online store

It represent the most important section of the application, which imitates a mobile shopping experience, and it includes following functions:

- Items Categories

Each category represent a certain type of items including: sportswear, sports footwear, equipment and services

- Item Page

Each item can be checked within its' own screen from where user can add it either to the *Wish list* or directly to the shopping bag. User also can check this particular item at the real online store of the brand to see and compare the price by tapping *CHECK STORE*

- Wish list

Items that are added to the *Wish list* are saved there, so that when user want to make a purchase he or she can make a short cut to the item the he/she wants to buy.

- Shopping Bag

Before confirming the purchase items go to the *shopping bag*.

5. Purchase Codes

These codes also have some features inside apart from the code itself.

- Item Code

These codes are codes that user get after making a purchase in the system with fitcoins and they are saved in *My Items*. To get the item user has to go to the shop of the brand and show this code to the staff by opening it in his application in *My Items* function.

- Gift Code

Gift codes are received only from brands when user is awarded. These codes have the same features as *Item codes* with only one difference - it's a surprise and user can't see what is the item.

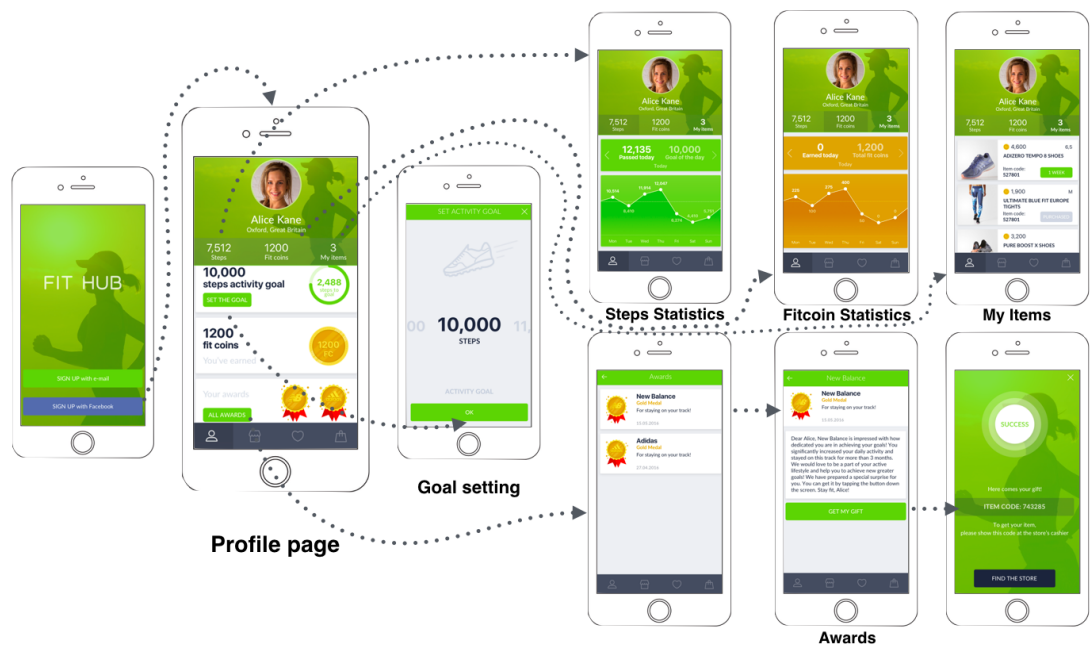
- Time Rules

Since user is free to decide when to take the item after making a purchase, the system has time limits for purchased items to encourage users to receive their items as soon as possible.

Notes

1 <https://brandly.co>

Figure 3.25: Prototype key path1



2 Here: by using this application people add brands as their friends and start to experience their own journey of rewards for loyalty. The more they buy from their chosen brand the more opportunities they have to experience different types of rewards. But what is more important, they get not only gifts and discounts, but they also become closer to the brand itself turning into the best friend. This opens customer a unique opportunity of experiencing a personalized extension of the loyalty to new levels with even more options.<https://www.youtube.com/watch?v=cfNE1HIgLfY>

3 http://www.cmo.com/opinion/articles/2014/4/21/4ways_tom_easure_m.html

4 Tudor-Locke, Catrine, Bassett, David R Jr. "How Many Steps/Day Are Enough?: Preliminary Pedometer Indices for Public Health" Sports Medicine. 34(1):1-8, 2004

5 https://www.ucl.ac.uk/hbrc/research/tobacco_and_alcohol/behaviour_change_theory_practice

6 all information about prices is taken from the online shops of researched brands

subcaption

Figure 3.26: Prototype key path2

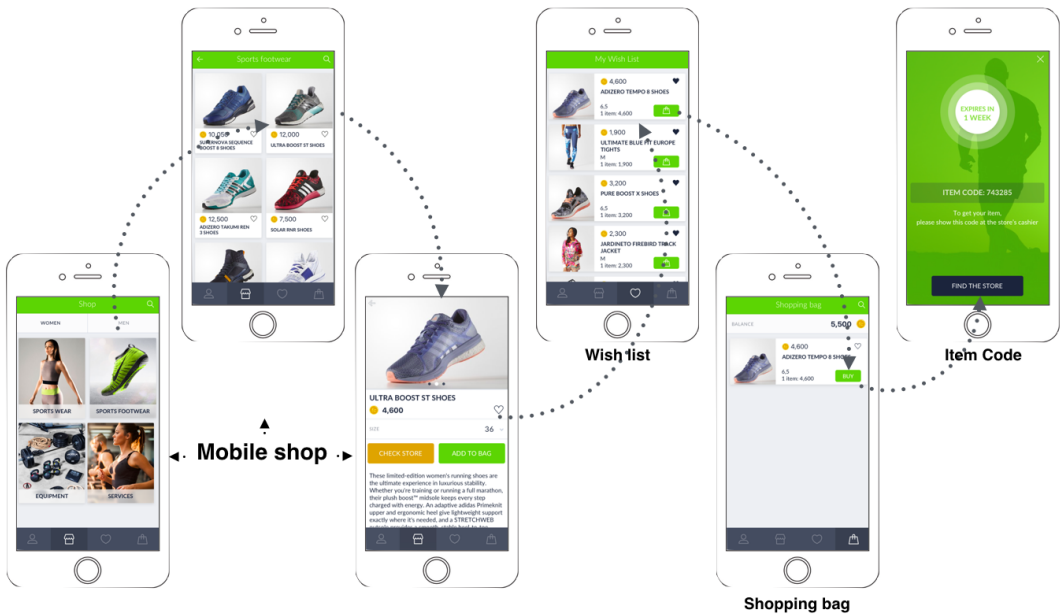
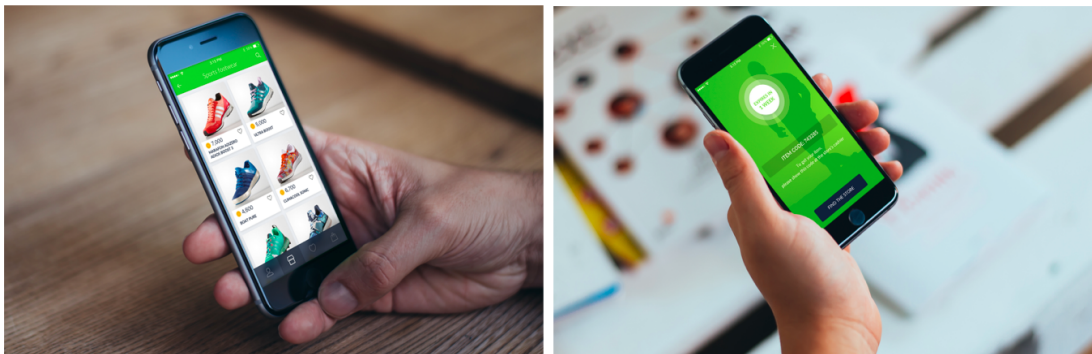


Figure 3.27: Prototype design “life shots”



Chapter 4

Evaluation

The second prototype that was introduced in the previous chapter as a Minimum Viable Product Design (MVPD) was used to conduct a number of tests among target users aimed at evaluating 3 main aspects of the concept design:

- The importance (value) of each separate function of the prototype for the user inside this particular system
- The experience of use of the introduced system with an assumption of long-term usage
- The overall system usability evaluation

In addition to the user test, the whole business concept was revised by a professional marketing person in terms of its' feasibility, scalability and profitability. Both evaluations helped to see strong and weak points of the current design as well as the room for further improvement.

According to the results of the evaluation and “deep interviews”, author came up with the user experience map with precise understanding of emotional traits of the user, which helped to build emotional “heat map” and find pain points that should be taken into account for further development and redefining of the concept. The concept was finalized in the 5th chapter.

4.1 Evaluation of Design concept and prototype

The main goal of this user test was to evaluate the system design and it's particular features together with the experience that the MVPD can bring to

the user; and to prove that this particular system can incite inner motivation for increasing physical activity among young people in the age range from 20 to 35.

4.1.1 Methodology

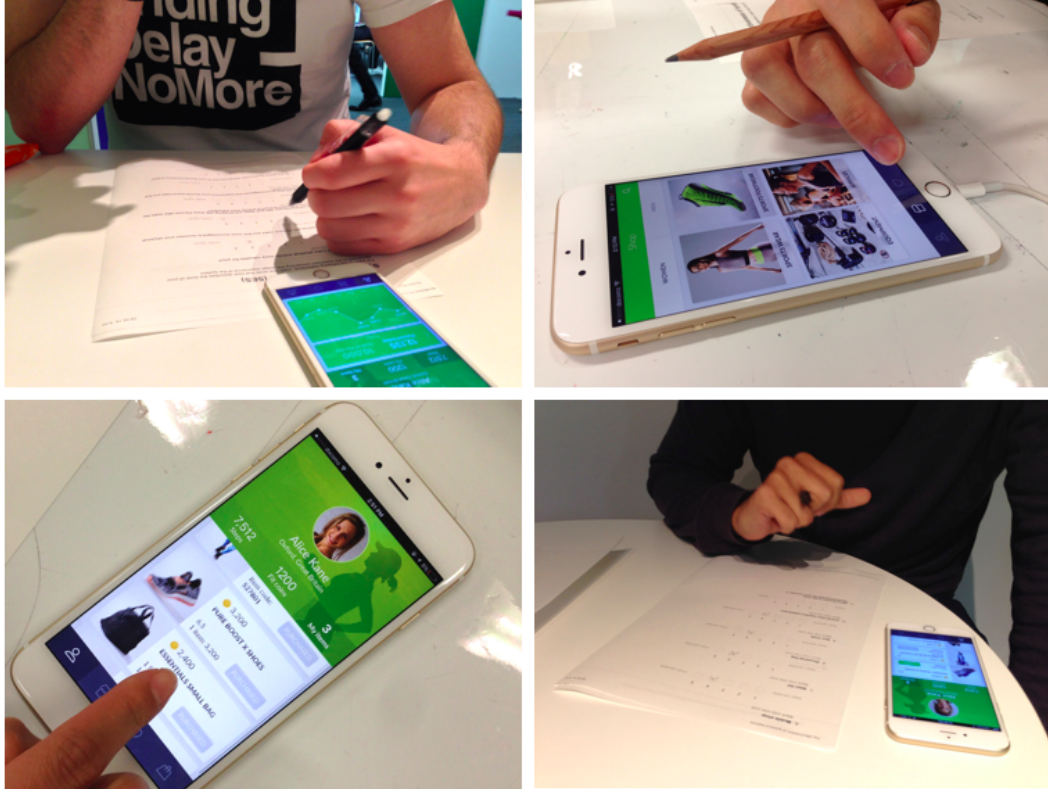
The test of the prototype was conducted among a group of 10 people in the age range from 24 to 33. Each person had an individual session, which included 6 steps that together took about 30-40 minutes of their time, depending on each person individually:

- Pre-test questions
- Introduction of the concept and basic logic of the service
- Introduction of the prototype
- Interaction with the prototype
- Filling in 3 separate surveys for 3 main aspects of the concept design
- Discussion session (interview)

Limitations

The scope of the concept design and its implementation within the framework of Master Thesis can not be tested for its long-term feasibility in behavior change. Since real behavior change study requires a 1-2 year time period to prove that it works, to be able to test the behavior change aspect of the design concept it is necessary to turn described service into a real business, which requires an involvement of people from different backgrounds as well as development not only of the design part but also a business part in a very precise way. However, before measuring concept's feasibility in terms of behavior change it is important to evaluate initial steps of the system and its' design, to be able to deliver user-oriented product together with a well-tailored experience. In this paper author evaluate exactly the users perception of the system and its features to understand whether this particular system design will increase their personal motivation for being more physically active.

Figure 4.1: User test



Thus, even the number of tested people is not high enough to build a regression model to statistically prove the statement, the combination of individual interviews with surveys that cover different parts of the concept design, unlike simple large-scale surveys, helped to get a deeper understanding of how people feel about all features of the system and the experience that these features can bring them in the long-term. The “deep interview” approach mixed with psychometric scale questionnaires gave the author enough information to build a user experience map and emotion “heat map” to understand the value that user receive from this system and how the design can be improved to provide a better value.

All three surveys were based on the Likert-type scale and had 5 answer categories for tested users to choose from, with point 3 representing a neutral answer.¹

To evaluate the prototype's functions, users had to choose one number out of five that best describes the value of the listed functions inside the system, where 1 represent *least valuable* and 5 represent *most valuable*. For both, user experience evaluation and system usability evaluation, tested people also had to choose in the range between 1 and 5 but the scale itself had Agree/Disagree elements. The user experience scale included 1 - *totally disagree* and 5 - *totally agree*, while system usability scale included 1 - *strongly disagree* and 5 - *strongly agree*.

4.1.2 Evaluation of system's functions - Results

According to the results of the first evaluation, almost all functions were found by users valuable with the most emphasis put on *Step statistics* and *Fitcoin statistics* especially, as parts of the profile page, which 9 people out of 10 described as important/most important function, see figure 4.2 and figure 4.3. Half of the surveyed pointed that fitcoins represent something new that they haven't seen before and at the same time something that makes the whole system easy to understand.

However, *Awards* and *Item code* were found less valuable and feedback on the evaluation of these two features from the user was minimum to none. Assuming this, author came to conclusion that the whole design of these functions couldn't deliver the idea behind the concept clearly and has to be redefined. Here are some answers from the tested interviewees:

- "The awards don't feel that personalized so something else can be added to this function".
- "Not sure there is a need for item code?"

4.1.3 Evaluation of system experience - Results

The results from this evaluation clearly shows that for all participants Fitcoins make physical activity more valuable in terms of their current attitude to their health and lifestyle, see figure 4.4. However, while in overall most participants do find shopping experience introduced in the system encouraging enough to increase their physical activity, as well as they find the

Figure 4.2: Evaluation of system’s functions - Results

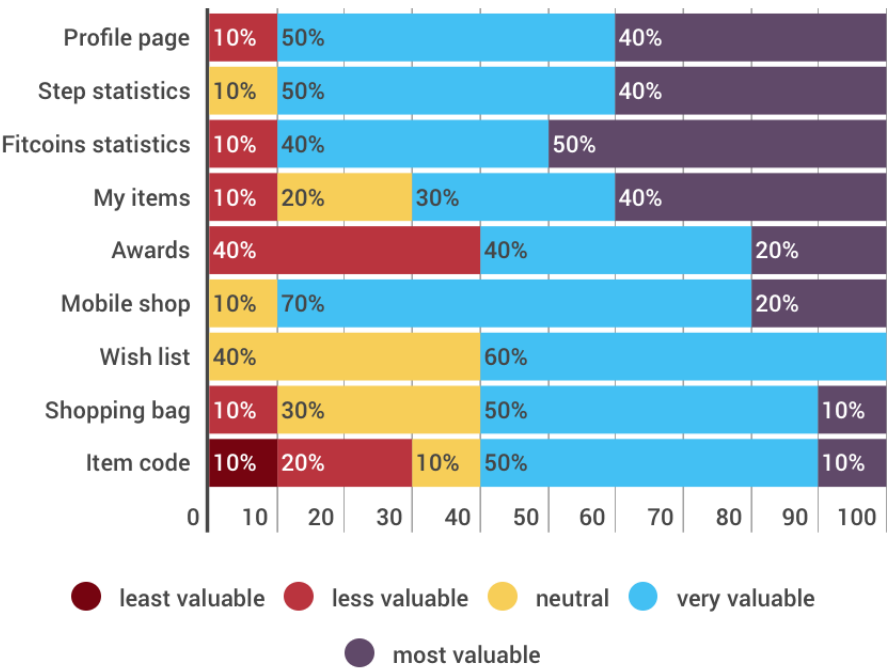
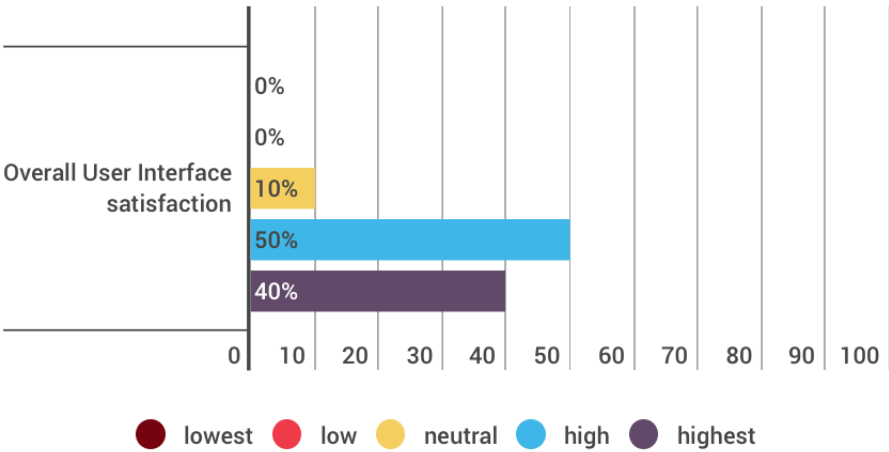


Figure 4.3: Overall User Interface satisfaction



process of increasing their physical activity through shopping with fitcoins quite enjoyable; the awarding system introduced in the prototype for almost half of tested users does not provide a deeper connection with brands and 30% do not feel motivated when being awarded by brands, see figure 4.5.

In overall, 9 out of 10 agreed that if this system was real they would prefer to use it rather than other physical activity monitoring systems. In addition to that all users showed high level of satisfaction with an assumption of long-term usage, see figure 4.6. Here are some feedback quotations from users:

- “I want this system to provide more promotional things with fitcoins rather than giving awards. It would be nice if, for example, people can get some discounts for new collections because they keep reaching their goal for a long time and are members of the “brand family”.
- “I think in overall it’s a good alternative to current fitness apps and can provide good motivation. However, I don’t think that connection with the brand is a motivation for me. It’s more the achievement of “earning” fitcoins as a stronger motivation to reach those goals.”

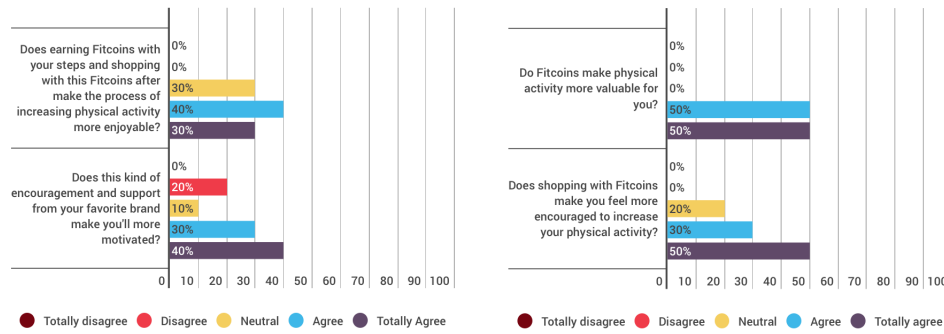


Figure 4.4: System Experience Scale (SES) 1

4.1.4 Evaluation of system usability - Results

The last part of evaluation included System Usability Scale (SUS), which represent a likert-scale created by John Brooke ². This scale includes 10 items and is widely used to get quick and simple subjective assessment of the system that is based on web or mobile platform. SUS gives an overall view on how good or bad the usability system is, based on the ratio that is calculated directly from the answers.

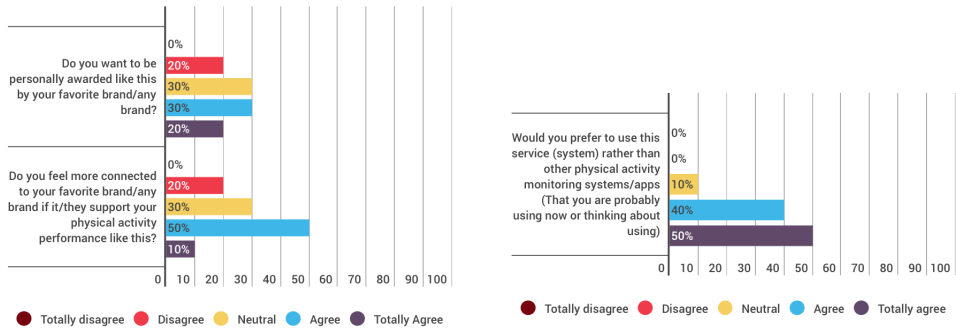
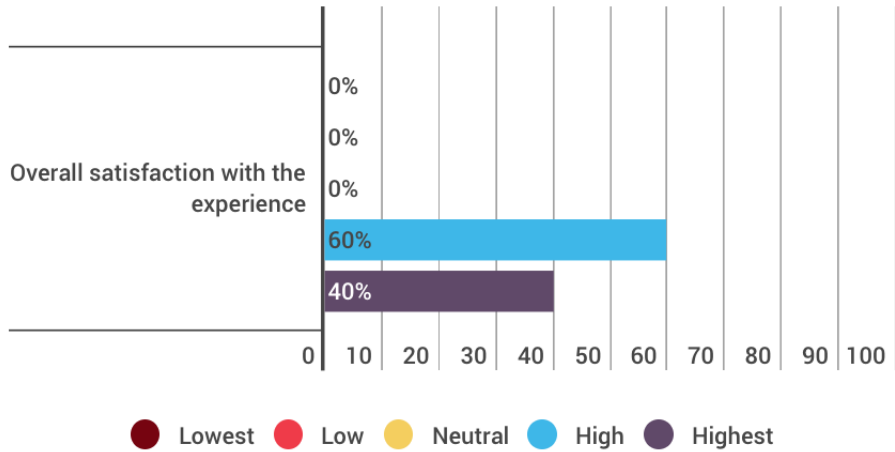


Figure 4.5: System Experience Scale (SES) 2

Figure 4.6: Overall satisfaction with the experience



Within the scale of scores of SUS, the evaluation showed that this particular system has a very high score of 85 (not a percentage scoring), which makes this particular MVPD based on mobile platform a good, high level system that provide smooth user experience, ready for commercial use, see figures 4.7, 4.8, 4.9.

Discussion

Taking into consideration limitations of the research, it should be noted that the evaluation was conducted on a small-scaled audience. However, the “deep interview” approach gave some valuable insights on the experience of

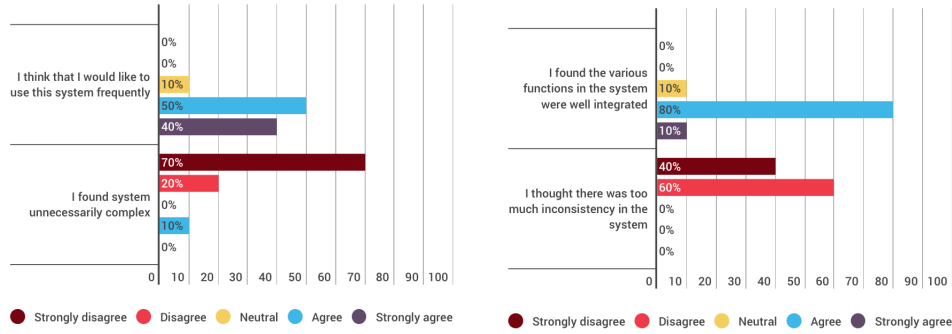


Figure 4.7: System Usability Scale (SUS) 1

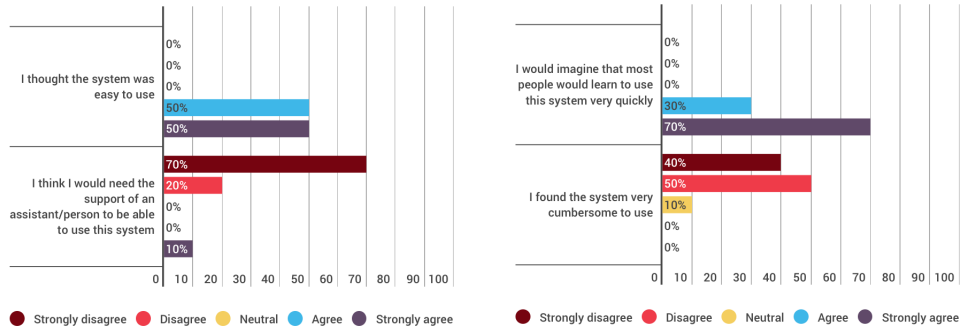


Figure 4.8: System Usability Scale (SUS) 2

the system and its' functionality, enough to reach the next stage of system development. The feedback gathered from the tested group showed that within the existing system users easily understand the idea of *fitcoins* as a digital currency based on their physical activity, as well as they understand the shopping experience with *fitcoins*. They do find it valuable to measure their physical activity and motivational enough to increase it.

At the same time, the interpretation of brand-consumer communication in the introduced system at this point of development does not provide enough value to users and they do not see it as a motivational aspect of the system. According to this, the author has enough information to continue development of the system, putting emphasis on how to build a better brand-user communication within the created system.

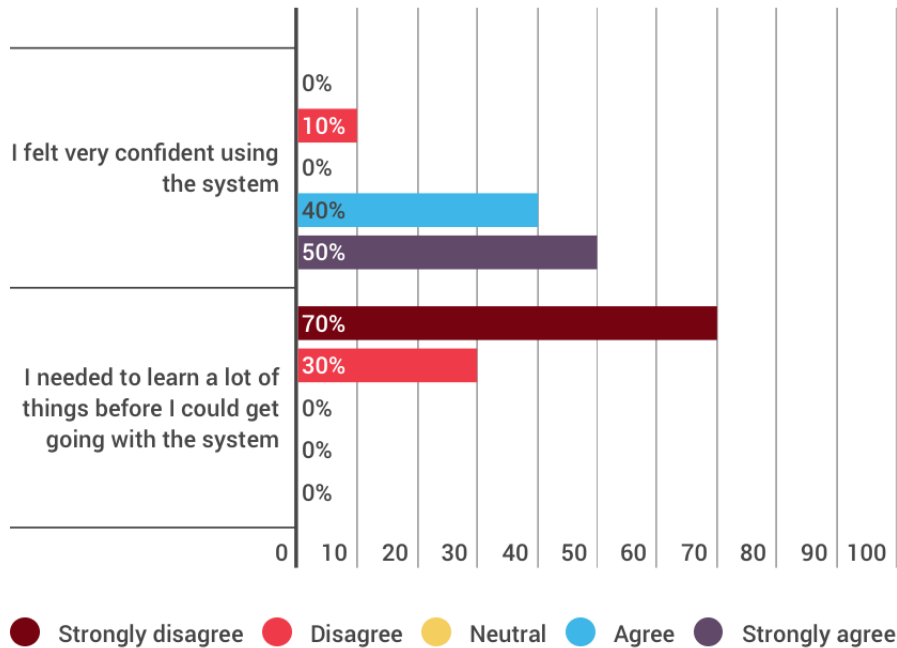


Figure 4.9: System Usability Scale (SUS) 3

4.1.5 User Experience map

Based on the evaluation of the different parameters of the system with the test group, author was able to create all steps of user experience with the system beginning from discovery of the product/service and ending with receiving an item. It should be noted here, after getting a feedback on the “awards” function, author decided not to include it into the user experience map.

The user experience map was also expended by the adding of so called “pain points” or emotional points of potential users concerning each step of the user journey. The map consists of two parts: linear and cyclical, where linear part represent a pre-service time of discovery and investigation, and cyclical part is a process of usage. The *pre-use* part of the UX map was created by the author herself with the assumption of existing channels from where the potential user can get information about the service, see figure 4.10.

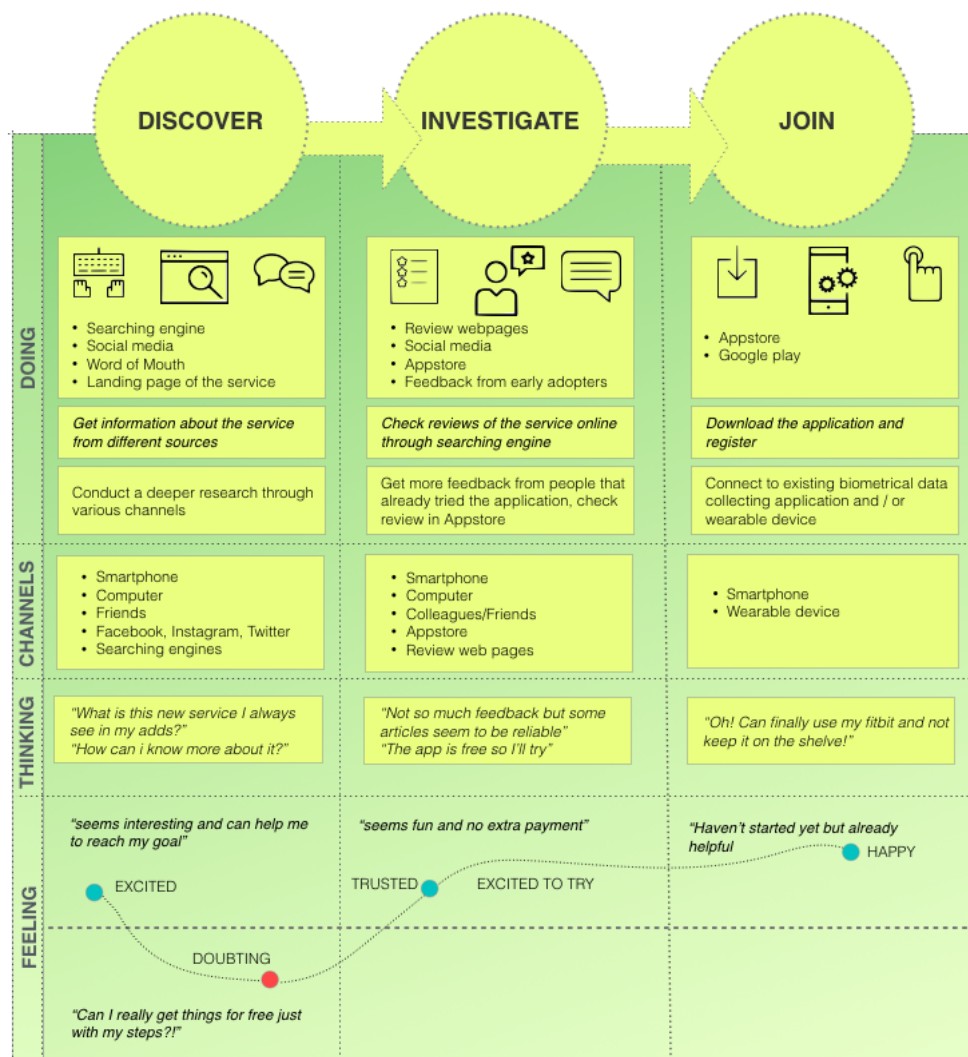
For the *use* part of the map all tested users were asked to show their personal “journey” through the system to identify the chain of possible steps that user takes when interact with the application, see figure 4.11. It was identified that the first step, after users are finished with initial setting up, is *checking the store* to get incentivized for the “action”. Real items in the store and representation of their prices through fitcoins that can be earned through physical activity make users “excited to try” this new experience. However, even this first step rises some questions in user such as: *What goal should I set?*, *What if I set the smallest goal, can I get items faster then?* creating a feeling of uncertainty, this emotional point does not stop user from trying.

The next step - *add items to wishlist*, gives users the feeling of “reality” of future possession of the item, thus, making them “excited to get the item”. That boosts the overall motivation to earn fitcoins. At this moment of use system create the environment of natural “questioning”, showing that as for now the developed system lacks some valuable explanation points. Overall, the shopping experience provides stronger motivation for the user not to give up at this stage. When it comes to the real shopping process, users noted that just like in real online shopping they will face the difficulty of making purchasing decision, but “excitement to buy and receive the item” will be much stronger.

The real milestone appears at the stage of going to the store, and it can be better seen on the “heat map” of emotions, see figure 4.12. Initially, the idea of the system design included an essential point of bringing customers to the premises of the brand stores through the mechanism of the item code and necessity of receiving this item at the brand store, with no delivery option. Even this experience is supported by the idea of earning additional fitcoins, most users stated, the fact that they have to go to the store make them somewhat discouraged and disappointed in the overall experience and that they would definitely prefer to have an opportunity of delivery. In addition to that, 5 out of 10 said that the necessity to go to the store to get the item makes them feel that they are, again, a target of “another marketing campaign”.

Going further, author figured out that as for now system does not provide any support for users on how to get to the store besides the function *find the store* inside the application, while this moment is the most important point that has to be assisted by the service in the best way. Tested users raised

Figure 4.10: UX map part 1: pre-service



such questions as: "What should I do if I can't find the store?", "Whom can I contact to get help in case I'm lost?", "What if there is no my items left in the store? How can I get it then?", "Can I get the refund of my fitcoins?". All these questions show that there is a huge possibility of losing contact with the user, driving him from disappointment to total frustration and finally making him "burned out", which means he or she does not receive an item and quit the service due to negative user experience. 8 out of 10 stated that in case they can't get the item for any reason (even if it is not the

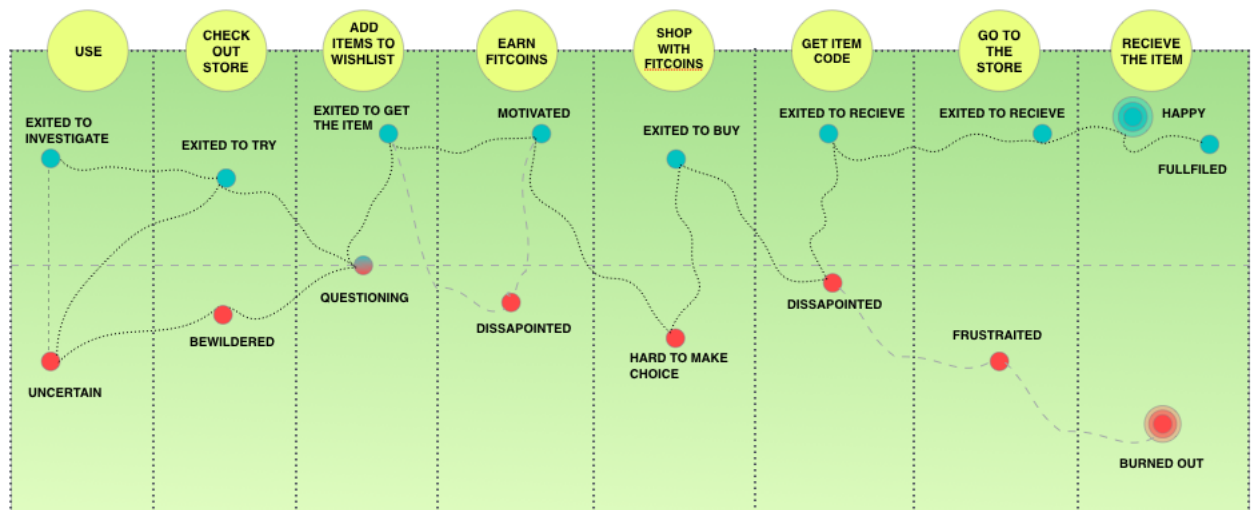
Figure 4.11: UX map part 2: service



fault of the service), they would consider stopping to use this application. As it can be seen from the scheme, the necessity of getting the item in the store may create a chain of uncontrolled negative emotions that may lead to the loss of the user. In this case, building UX map helps to identify those

pain points, which has to be taken into account to create a better experience for the user.

Figure 4.12: Emotional "Heat map"



4.1.6 Business concept evaluation

As it was mentioned in the beginning of the chapter, one part of the evaluation was the review of the business concept by a marketing person. According to this review, "Fit Hub" as a service has a well developed consumer journey with the description of main touchpoint between consumer and brands. While there are similar businesses in the market, this particular concept has a unique competitive advantage, which is the "maximum level of participation of brands in the life of service user that makes this service much more effective as an instrument of building brand loyalty in comparison to existing ones" ³. This makes the reviewed business concept undoubtedly a fundamentally more interesting marketing tool for corporate clients.

The reviewer also points out those aspects of the concept that has to be revised and developed further to deliver a good business model. First of all, it is important to work out a detailed monetization model, dividing it into direct and indirect methods. The service concept also has to be

strengthen with the introduction of main Unique Sales Propositions that can not be copied or bought by competitors. Understanding the pace of modern technological advances these USP should be created not in technological part of the service but in value aspects. Thus, for examples, USP can be found in building unique partnerships with clients that make the process of switching to another provider unprofitable. Reviewer also mentioned that channels of communication with the client including pre-service, service and post-service periods should be studied more precisely to build a sustainable business model. In overall, according to the business review, Fit Hub business concept has a high practical applicability and can be used in order to attract investment in the project.

Notes

- 1 Revilla, Melanie A., Willem E. Saris, and Jon A. Krosnick. "Choosing the number of categories in agreedisagree scales." *Sociological Methods Research* (2013): 0049124113509605.
- 2 Brooke, J. (1996). "SUS: a "quick and dirty" usability scale". In P. W. Jordan, B. Thomas, B. A. Weerdmeester, A. L. McClelland. *Usability Evaluation in Industry*. London: Taylor and Francis.
- 3 to see the full review, please refer to appendix

subcaption

Chapter 5

Conclusion

5.1 Overview and Findings

Rewarding healthy behavior and incentivizing it through monetary rewards used to be an immoral technique for some people long time ago, since living healthy is something that people supposed to do naturally. Today, the implementation of gamification techniques in health behavior context that are aimed at motivating people for changing their behavior towards a healthier one still causes a lot of disputes in the scientific community. However, the study of related behavioral theories and current researches in the field shows that when it comes to the change of health behavior, motivation of this change through implementation of rewarding techniques is essential.

The author of this paper by referring to the theory of ego-depletion and combining it with the Vroom's Expectancy theory, came up with the idea of "task prioritization", which drives to the conclusion that gamification of health behavior through gratification is especially important among young people that doesn't put "healthy lifestyle" as their first priority due to social norms and expectations, which prioritize education and career, putting them on the first line. At the same time, understanding that healthy behavior represent a lifestyle choice that has recently become a trend, author tried to put together brands, as providers of self-expression and one's lifestyle representation, and gamification approach to increase physical activity among young people, to create a system where both parts get it's own benefits. Thus, author came up with the design concept of the service that is aimed at increasing physical activity of the target users through the mechanism of branded incentives.

The design concept represent a service solution that, on the one hand serves

as a new experience for users aimed at encouraging their daily physical activity, and on the other hand, as an extension of current marketing techniques for companies - producers of “healthy lifestyle” products aimed at building consumer-brand loyalty in qualitatively new level.

The design concept included the creation of the mobile application that should serve as a main platform of the service. The mobile application and the service itself were named FitHub. In this paper author described the development of Minimum Viable Product Design (MVPD) that was tested with a group of target users. The business concept was evaluated as well. According to the evaluation, the design concept was found valuable by the users in terms of providing a new, unique experience: a shopping experience with the points - fitcoins earned by physical activity (steps). At the same time, the brand-user communication system introduced in the prototype showed less positive results. Thus, the whole new approach to building communication channels inside the system has to be taken.

The overall experience provided by the system was found to be motivational. That means, the created system proves to be efficient in terms of encouraging young people to increase of their daily physical activity. However, it should be noted that to fully prove the statement it is necessary to have a long-term research aimed at evaluating a real behavior change, which is, unfortunately, due to unavoidable limitations within the framework of the Master Thesis, can not be tested. These limitations include the time frame, the accesability to resources, including human resources and scalability. Nevertheless, the evaluation conducted in this work brought some valuable insights on the concept and its' prototype, which can be used for the further development.

5.2 Future work

According to the feedback from tested users, the initial concept was revised and there were made some significant changes, see figure 5.1 . First of all, it is important to mention that the idea of fitcoins and whole shopping concept remain untouched, since the feedback on it was highly positive. The only change here is connected to the process of receiving the product. As the majority of tested users found the process of receiving the item by themselves, which requires them going to the store, quite discouraging and

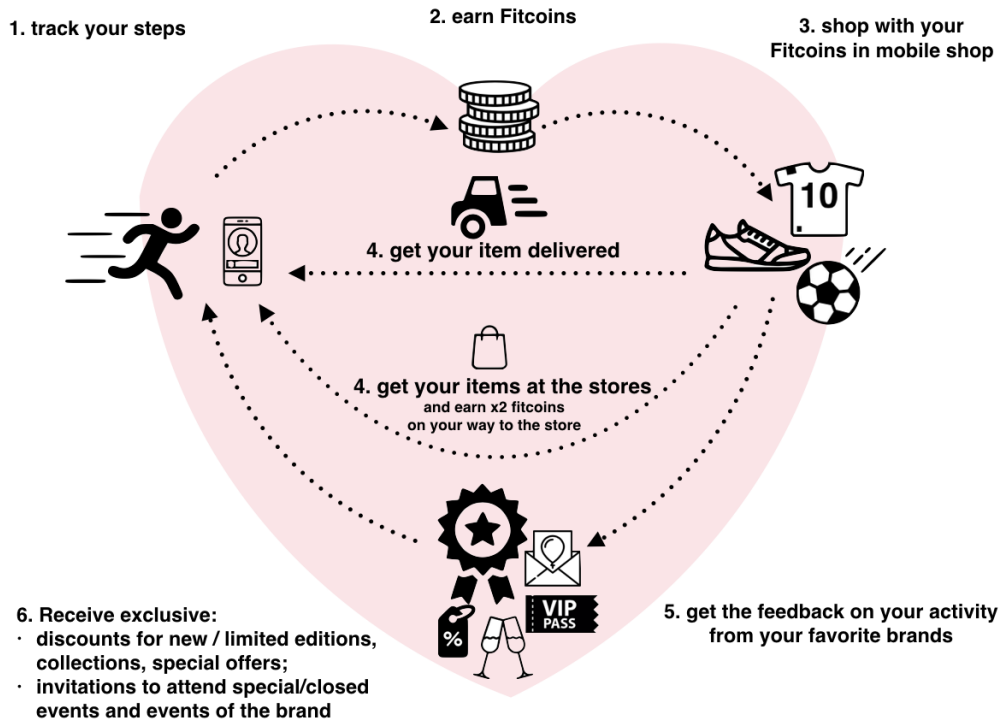
repulsive; it is important to make this function not the only possible one but the optional one. Thus, author decides to add a delivery option as a main service provided by the FitHub system, while the option to go to the store can be chosen by the user optionally. To make this option more valuable and attractive to the user, the service can provide a feature that doubles earned coins that person gets on the way to the shop to receive the item. In this case, the process of receiving an item doesn't seem to be repulsive as user can choose it by him/herself. At the same time, it encourages the user to take the option of "self delivery" through the mechanism of rewarding with fitcoins and eliminate this crucial pain points that can lead to the situation when user stop using the service. However, for the system itself the implementation of delivery service creates both opportunities and pitfalls that have to be considered while making a business plan.

As for opportunities, with the implementation of delivery function FitHub service can focus more on its' personal brand image to make the service more recognizable outside the mobile environment. Thus, the logo, the packaging and the delivery style (wether it is going to be an outsourced delivery services or in-house delivery) can be created as the company's unique identity. As for pitfalls, this particular change of the concept will bring additional costs that also have to be studied precisely before writing a business model.

Talking about the introduction of brand-user communication through the system of awards that was much less favorable by the tested group, the feedback on this service function doesn't provide a very deep understanding of what exactly user would love to have from brands and what could make him/her feel that brand is not trying to make this user buy more as a typical brand-loyalty service does.

However, one of the interviewees said that it would be nice if those awards can provide some special discounts on limited or exclusive offers and new collections, which are not represented in the mobile shop of FitHub and can be purchased only in the physical store with real money. In this case he won't feel any pressure from the brand side and will have additional incentives to visit the store. He also mentioned that some of the brands that he likes provide its' loyal customers with the opportunity to visit some special events or parties that can be attended only by invitations. This approach is used by some luxury brands to create the feeling of unique exclusive community of "chosen ones" and has quite good feedback in the

Figure 5.1: Revised concept



real world. Thus, the design approach introduced by the author has to be replaced by a more broad functionality of Awards inside the system.

Nevertheless, it should be noticed that introduction of a more complex system features leads to a more complex design. In Fit Hub case the implementation of the delivery service requires the rebuild of the mobile application with introduction of more functions such as registration page, delivery order, delivery tracking, feedback and so on. At the same time, the expansion of functionality of awards requires the creation of more complicated communication with clients - brands, who are going to provide those mentioned perks and bonuses together with the access to V.I.P catered experience.

According to the revisions that were made, the further development of the concept involves the change of the Minimum Viable Product and turning it into a real product, which requires the creation of a real business plan and finding the team of developers and financial experts, since the author of the paper herself has marketing, and economics background. However, before

the business plan is realized, it is necessary to evaluate 2 mechanics of the service that were introduced in the third chapter. Since the feedback from the marketing person was positive, as well as user test, the design concept has all possibilities to become a real service.

Author's note

All in all, going back to the idea of using behavioral studies as a basement for creating a successful behavior change tool, the author of this paper tried to go deeper in understanding which factors motivate people to change their daily lifestyle and maintain this change gradually turning it into habit. Many Health Behavior theories describe a lot of different aspects of our life that somehow affect our decisions. The readiness for change, the social circle and the environment in which we live, all these factors either support “healthy” choice or distract us from making it. However, modern reality is constantly changed by technological advances that speed up global development and reshape our environment, thus, reshaping those factors that affect our daily choices. These changes require new approaches to topics that have been discussed for a long time.

Today, healthy or active lifestyle is, unfortunately a choice, but not our everyday habit, due to many external factors that form our lives. The reality in which we are supposed to make these healthy choices can be perfectly described by this sentence already mentioned in the 2nd chapter: *“Person becomes less attentive to cues that signal of extracting self-control and more attentive to cues that signal the reward”*. So, why are we still not using this obvious “weakness” as a “strength” to tackle the problem of low physical activity?

The design of a “Fit Hub” service introduced in this work is created exactly to use the idea of “rewarding” or “gratification” as a “weapon” to tackle the existing problem.

5.3 Authors' note on references

Some of the references couldn't be shown in the work and are not listed in the *References* below. For this reason author introduces those works in this

section with directions to pages where they are supposed to be:

- *Chapter 1, page 12* - Kasriel-Alexander, Daphne. Top 10 global consumer trends for 2015. Euromonitor International, 2015.
- *Chapter 2, page 25* - Barte, Jeroen CM, and GC Wanda Wendel-Vos. "A Systematic Review of Financial Incentives for Physical Activity: The Effects on Physical Activity and Related Outcomes." Behavioral Medicine (2016): 1-12
- *Chapter 2, page 26* - Lewis, Zakkoyya H., Maria C. Swartz, and Elizabeth J. Lyons. "What's the Point?: A Review of Reward Systems Implemented in Gamification Interventions." Games for health journal 5, no. 2 (2016): 93-99

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Appendix

A Survey results

The survey initial data source

A.1 Pre-test

A.2 The effectiveness of system's features

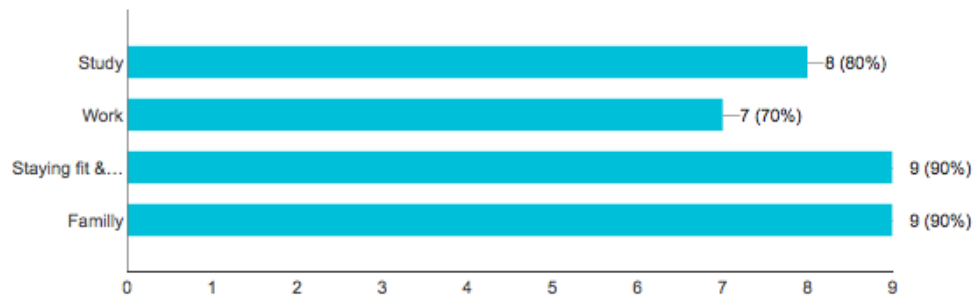
A.3 System Experience Scale (SES)

A.4 System Usability Scale (SUS)

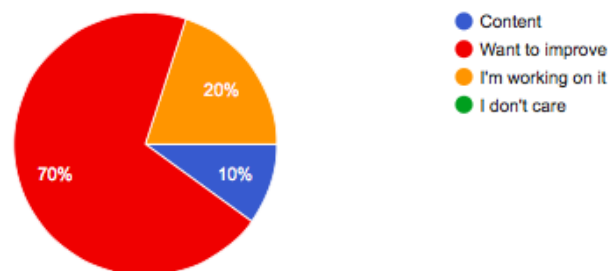
A.5 Business concept review

Figure A.1: Pre-test 1

What are your life priorities? (please number from 1-4) (10 responses)



How do you consider your current health & fitness? (10 responses)



What is your average weekly level of physical activity? (10 responses)

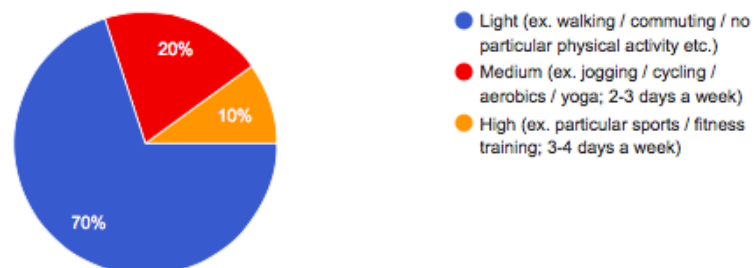
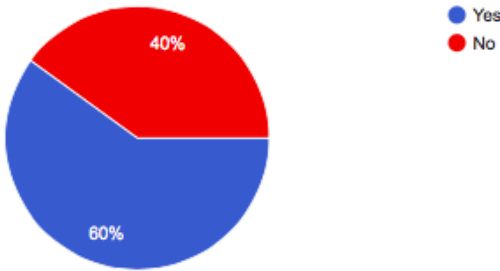


Figure A.2: Pre-test 2

Do you use any fitness or health related app? (10 responses)



Please, specify if YES (6 responses)

WeRun
Nike+ Running
wechat steps
calorie counter
Runkeeper
Nike+, Wechat step count,

Do you keep track of your biometrical data? (10 responses)

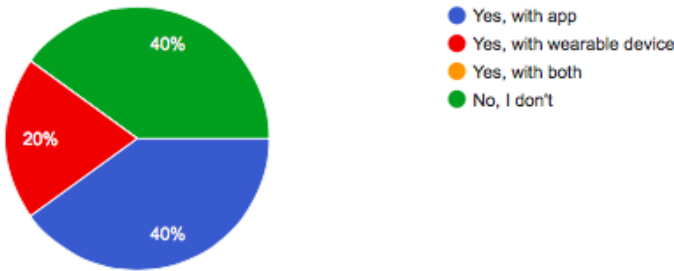
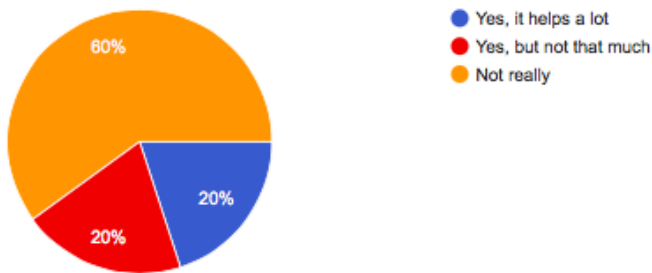


Figure A.3: Pre-test 3

If YES, does it help you to be more physically active? (10 responses)



Why it helps you / doesn't help? (10 responses)

I don't carry my phone all the time
It shows progress, development and tells me the distance, which can help to push harder
I don't trust it
Tracking current blood pressure is so much help! when I feel exhaust or dizzy.
fitbit; can't wear it during work time
i'm too busy....
no
not
I tried using fitbit, but seeing my bio data through their platform didn't motivate me. Think, I exercise more when I motivate myself.
keeping record, motivation

Figure A.4: System’s features 1

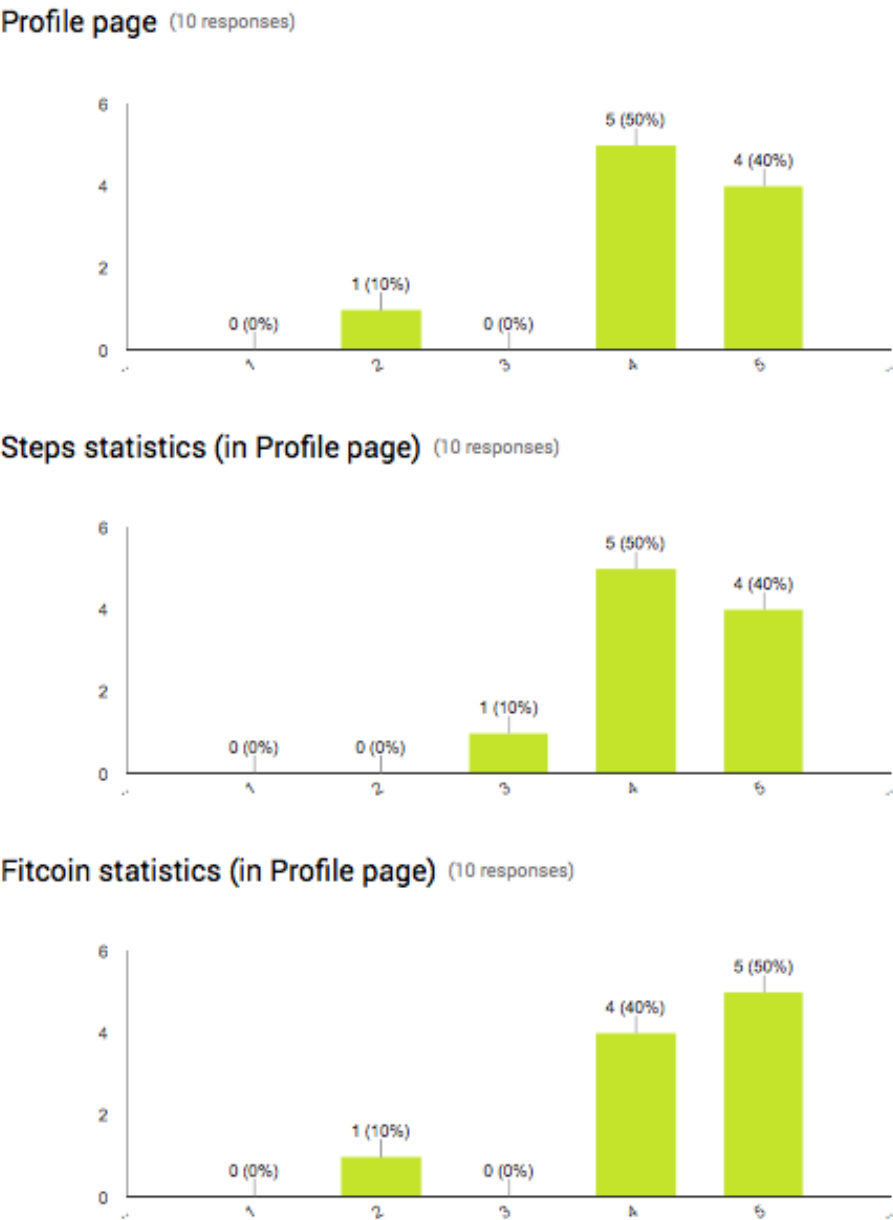
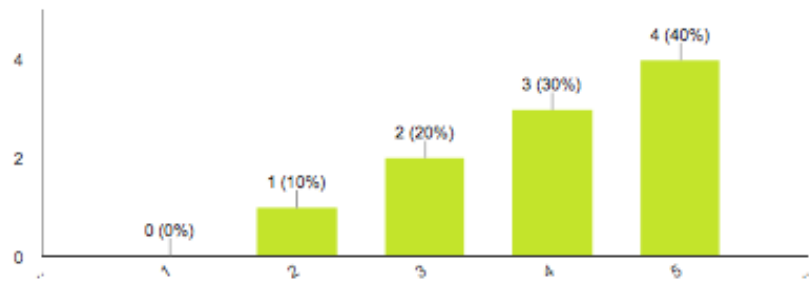
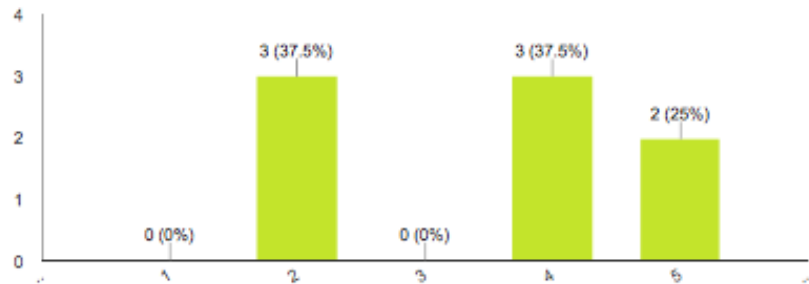


Figure A.5: System's features 2

My items (in Profile page) (10 responses)



Awards (8 responses)



Mobile shop (10 responses)

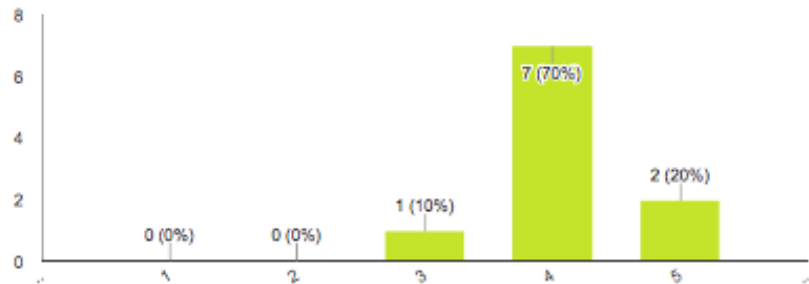
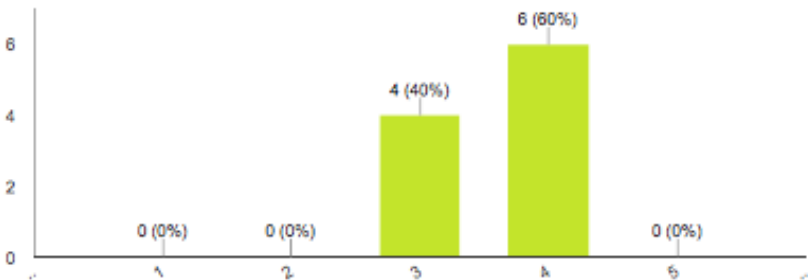
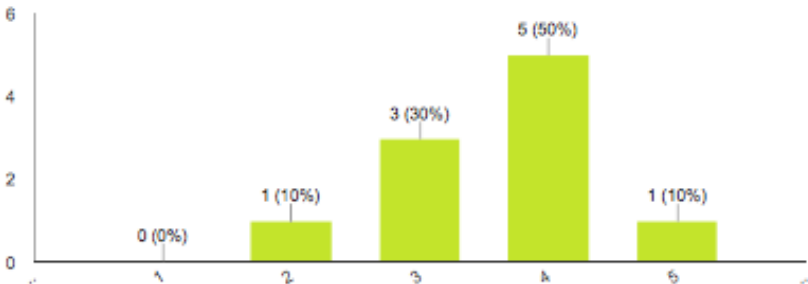


Figure A.6: System’s features 3

Wish list (10 responses)



Shopping bag (10 responses)



Item Code (10 responses)

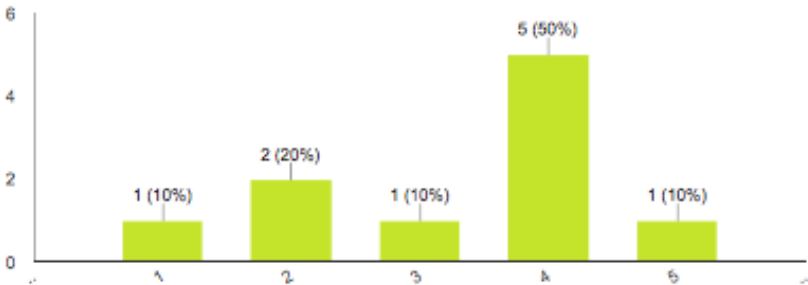
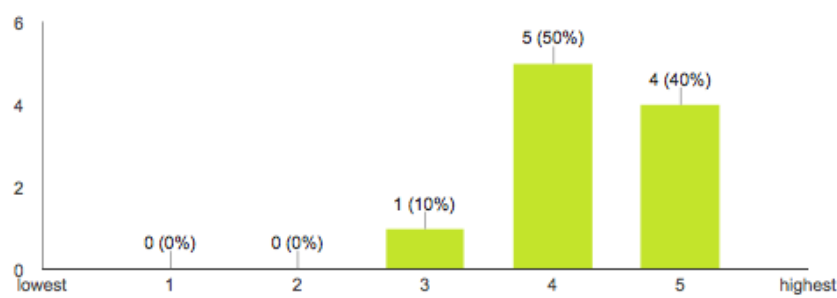


Figure A.7: System’s features 4

Overall User Interface satisfaction (10 responses)



Which function is the most valuable/important for you? (choose 1)

(10 responses)

fc
Tracking of steps / fictions
Steps statistics
Step statistics
fitcoin statistics
the shop
steps tracking, goals tracking
fitcoins
fitcoins (it's something new)
I like the wish list

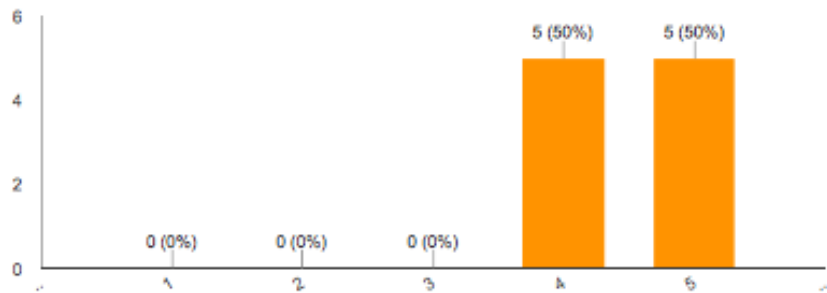
Figure A.8: System's features 5

Which function you think needs to be improved/changed and Why?
(choose 1)
(10 responses)

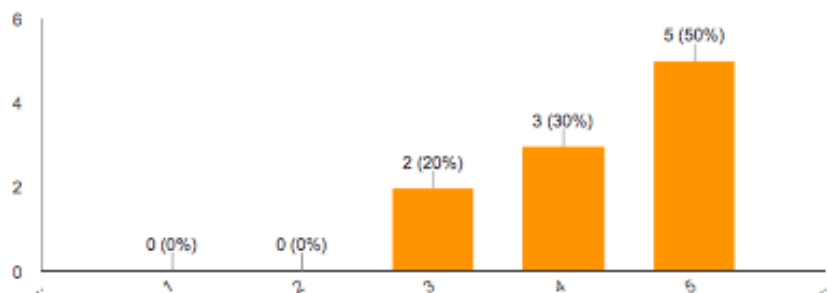
shopping bag: I can check this in my item instead
Not sure there is a need for item code?
Profile page (propose customized function)
I think if you can provide notification for users to notice them like "you have one day left for getting your item".
mobile shop, item code; someone doesn't like to visit store.
rankings with friends
add calories tab, scale button: 1 week/ 1 month/ X months, show the date on the award
shop - better pictures, general identity of the application (better colors & photos)
all good
the awards don't feel that personalized so something else can be added to this function.

Figure A.9: SES 1

Do Fitcoins make physical activity more valuable for you? (10 responses)



Does shopping with Fitcoins make you feel more encouraged to increase your physical activity?
(10 responses)



Does earning Fitcoins with your steps and shopping with these Fitcoins after make the process of increasing physical activity more enjoyable?
(10 responses)

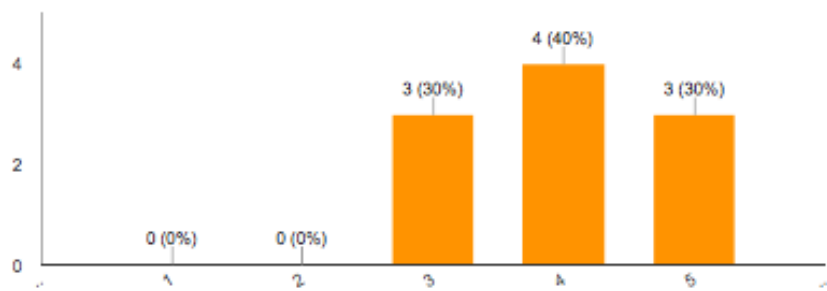
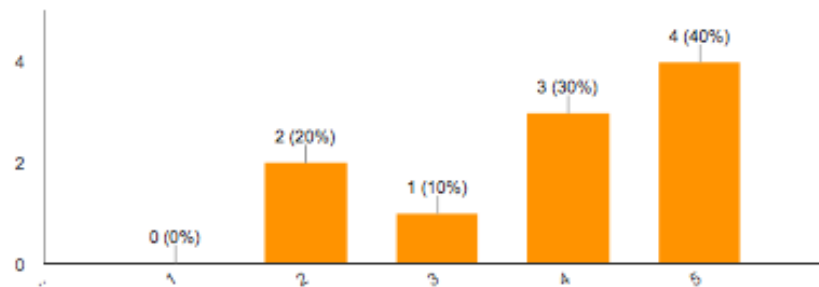


Figure A.10: SES 2

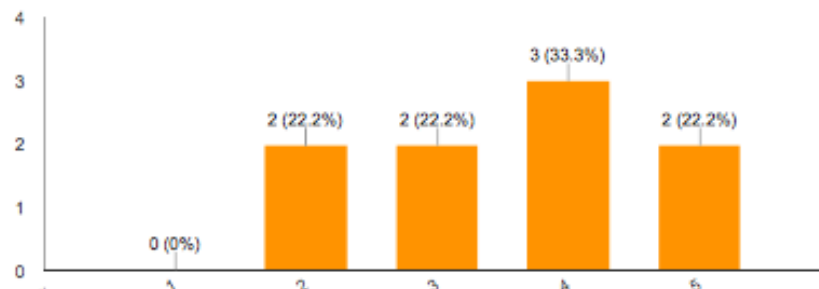
Does this kind of encouragement and support from your favorite brand make you feel more motivated?

(10 responses)



Do you want to be personally awarded like this by your favorite brand/any brand?

(9 responses)



Do you feel more connected to your favorite brand/any brand if it/they support your physical activity performance like this?

(10 responses)

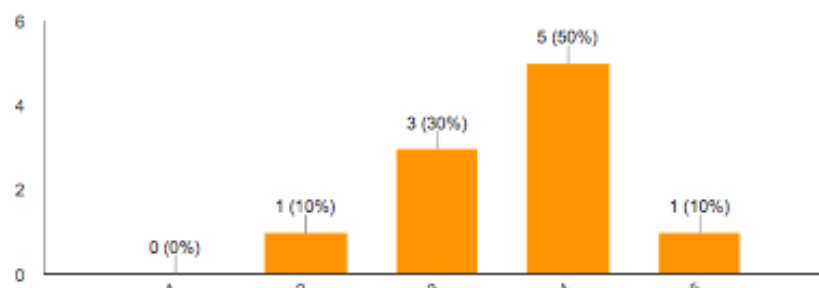
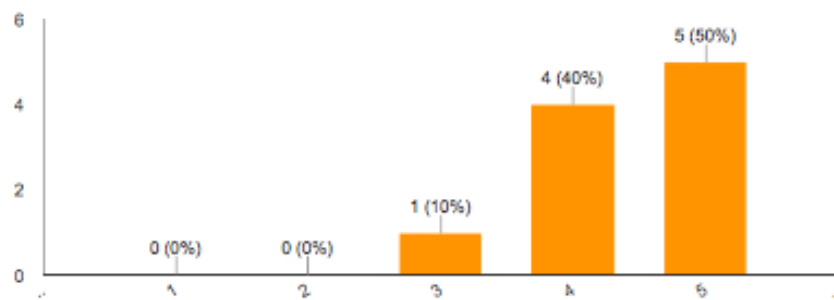


Figure A.11: SES 3

Would you prefer to use this service (system) rather than other physical activity monitoring systems/apps (that you are probably using now or thinking about using)?

(10 responses)



Please scale your overall satisfaction with the experience (10 responses)

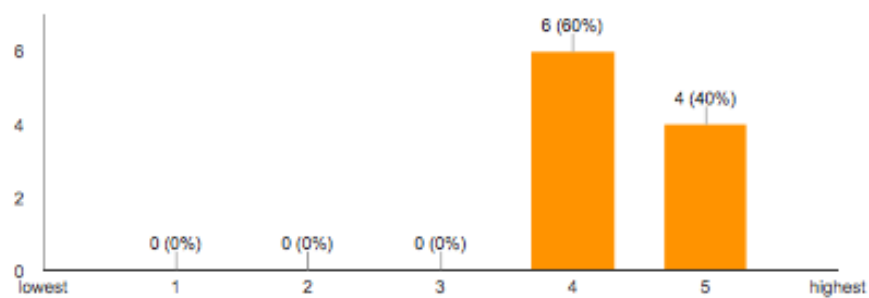


Figure A.12: SES 4

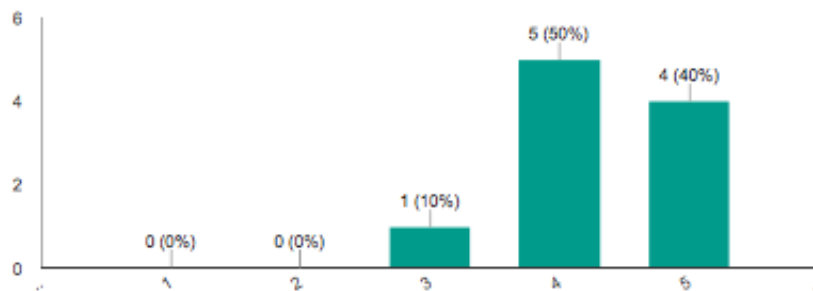
Please leave your feedback on overall experience and suggestions

(10 responses)

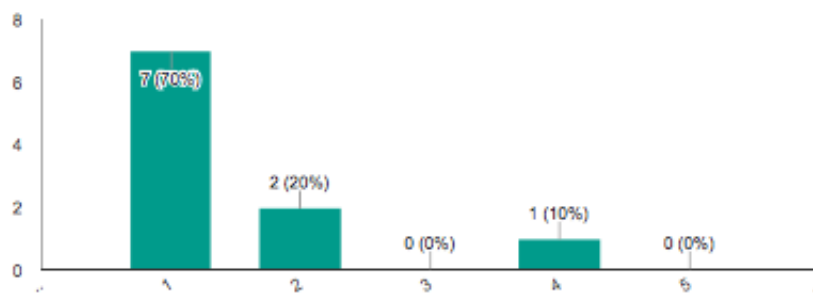
It is a revolution in fitness and marketing field!!!
If the app tells me my distance while running/walking then it's brilliant
The concept is great, I suggest adding "Add friends" or "Social" function and may be feeds/ news function
I want to change my lifestyle and I think if I use this application it might be motivate me to reach the goal and get my favourite brand.
love this idea. getting items without money can motivate me a lot. this system can also be build in those already existing services like fitbit.
maybe I'd like to have more brands option (or customized)
add more graph or statistics to make it look more like a game
I want this system to provide more promotional things with fitcoins rather than giving awards. It would be nice if, for example, people can get some discounts for new collections because they keep reaching their goal for a long time and are members of the "brand family".
I think in overall it's a good alternative to current fitness apps and can provide good motivation. However, I don't think that connection with the brand is a motivation for me. It's more the achievement of "earning" fitcoins as a stronger motivation to reach those goals.
For people who doesn't have strong brand connection, better provide more products/choices.

Figure A.13: SUS 1

I think that I would like to use this system frequently (10 responses)



I found system unnecessarily complex (10 responses)



I thought the system was easy to use (10 responses)

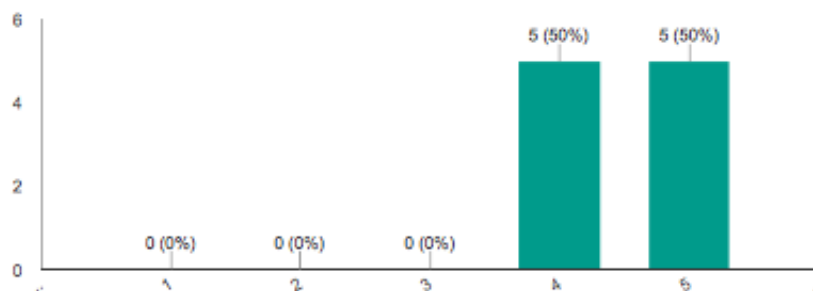
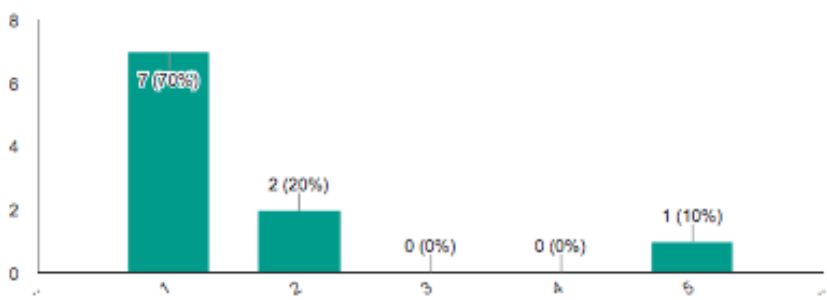
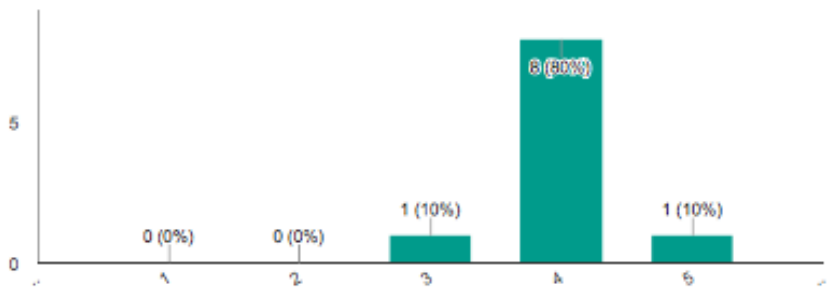


Figure A.14: SUS 2

I think I would need the support of an assistant/person to be able to use this system
(10 responses)



I found the various functions in this system were well integrated (10 responses)



I thought there was too much inconsistency in this system (10 responses)

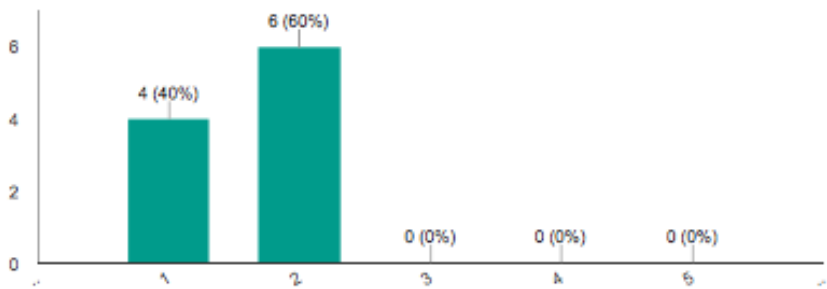
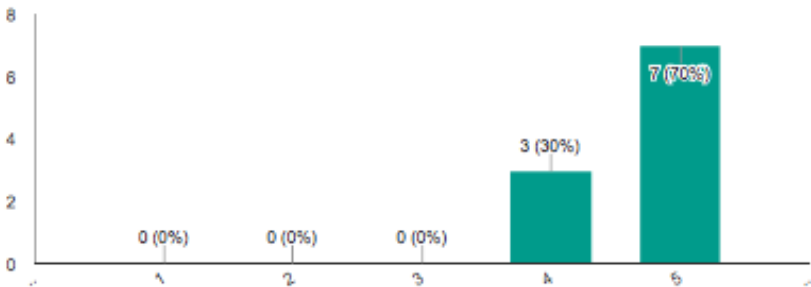
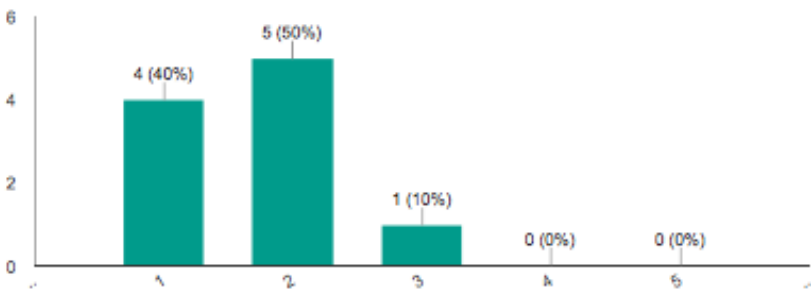


Figure A.15: SUS 3

I would imagine that most people would learn to use this system very quickly
(10 responses)



I found the system very cumbersome to use (10 responses)



I felt very confident using the system (10 responses)

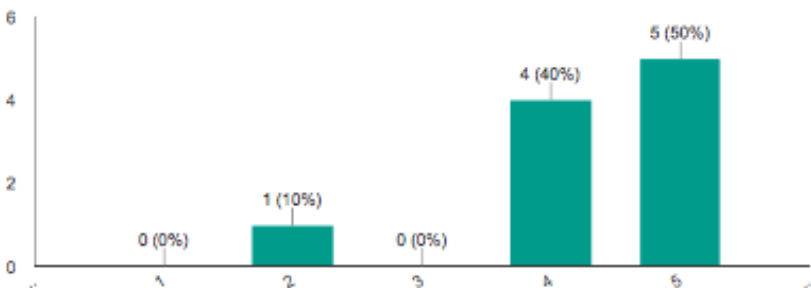


Figure A.16: SUS 4

I needed to learn a lot of things before I could get going with this system
(10 responses)

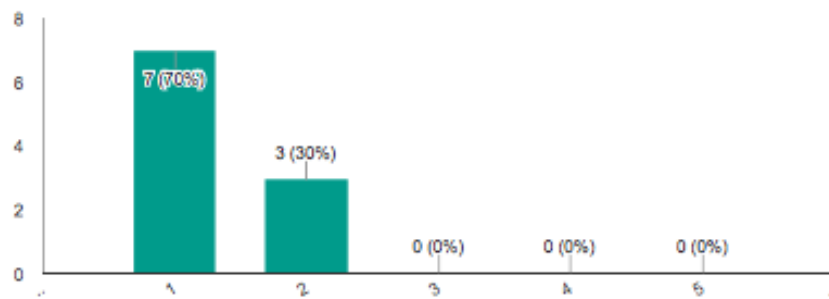


Figure A.17: Business concept review page 1

Рецензия на дипломную работу студента XXXX «FitHab».

Дипломная работа «FitHab» посвящена созданию принципиально нового маркетингового инструмента, целью которого является развития лояльности к бренду со стороны целевой аудитории.

Идейной платформой сервиса является здоровый образ жизни.

Основная бизнес-идея заключается в создании приложения, которое позволит пользователю зарабатывать условные единицы за ведение активного образа жизни и обменивать их на потребительские товары брендов, участвующих в программе.

Технологически мобильное приложение включает в себя элементы геймификации и обладает возможностями использования биометрических параметров, считываемых с помощью мобильных устройств.

Автор подробно рассматривает основные социокультурные и технологические тренды современного мира, тем самым убедительно обосновывая актуальность и востребованность подобного приложения со стороны пользователей. Среди таких трендов автор называет рост интереса населения к здоровому образу жизни, развитие техник геймификации в различных сферах бизнеса, рост потребности клиентов в персонализированном сервисе и кастомизированных решениях, развитие технологий, основанных на сборе и обработке биометрических параметров, повсеместное использование смартфонов.

В работе наглядно представлена сама концепция нового сервиса: построен потребительский путь, обозначены основные точки контакта потребителя с брендом, описана бизнес-модель нового сервиса.

Кроме этого, описано и структурировано конкурентное поле, оценена степень насыщенности рынка и относительная новизна продукта. Автор прямо говорит о существовании схожих сервисов, однако магистральным отличием сервиса FitHab называет максимальное участие брендов в жизни пользователя приложения. Таким образом, данный инструмент гораздо эффективнее участвует в формировании лояльности потребителя и становится принципиально более интересным маркетинговым инструментом для корпоративных клиентов.

Figure A.18: Business concept review page 2

В целом работа грамотно структурирована, изложение понятно и не требует дополнительных пояснений, аргументация автора убедительна.

При этом необходимо реализовать ряд доработок, которые позволят дать максимально полное представление о степени успешности будущего сервиса.

Так, рекомендуется более детально проработать модель монетизации инструмента: оценить и приоритезировать различные варианты монетизации, разделив их на прямые и косвенные.

Концепцию сервиса необходимо усилить описанием основных УТП (уникальное торговое предложение), которые не могут быть куплены или скопированы конкурентами, по крайней мере, в течение допустимого периода. Учитывая развитие технологий, рекомендуется искать уникальность сервиса не в технологических аспектах, а в ценностных и сутевых. Например, подобным УТП может стать построение уникальных партнерских отношений с клиентами, которые предполагали бы высокую стоимость переключения клиента на другого провайдера.

Также рекомендуется включить в работу описание основных каналов коммуникации потребителя с сервисом: каким образом потребитель узнает о сервисе, тестирует и приобретает его.

В целом, работа обладает интересным содержанием, имеет высокую практическую применимость и может стать основой для инициализационной записки в целях привлечения инвестиций в проект.

*Заместитель генерального директора по маркетингу и PR кадрового
холдинга АНКОР Ирина Кузнецова*