Final Report
StandUp Game

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1 Introduction

It is important for companies to keep the health of its employees in mind. Especially in office workplaces, which have a sedentary nature, there are increasing concerns to employee health (Marshal and Ramirez, 2011). Most of the employees in an office spend almost two-thirds of their time sitting (Clemes, Patel, Mahon and Griffiths, 2014).

Excessive sitting during the day can however lead to medical problems. Studies have shown that sitting for most of the day can lead to an increased risk factor for cardiovascular disease, type 2 diabetes, premature mortality as well as some cancers (Gierach et al., 2009; Thorp, Owen, Neuhaus and Dunstan, 2011). This risk factor is independent of how physically active this person is (Bankoski et al., 2011).

The problem is not just with sitting most of the day while at the job. As can be read in Clemes et al., 2014, even during lunch breaks the 'high work-time sitting' employees tend to walk little. This means that an employee that is more sedentary moves even less, even though especially that person needs to move around more.

Super Starfish Mania aims to be a tool that can help motivate people to regularly take breaks during the day. This is done through gamification. Gamification uses game elements to encourage non-game activities ranging from being more productive to living healthier (Deterding, Dixon, Khaled and Nacke, 2011).

2 Product Overview

Super Starfish Mania is a movement based game which promotes and rewards physical activity from its players. It is designed for people that live a sedentary lifestyle and need a little help and motivation to change their ways. Super Starfish Mania offers help by providing the user with the following:

Notifications Super Starfish Mania notifies the user after every hour to raise awareness about the user's sedentary habits and offers them to take a five minute physical break.

Physical Activity If the user decides to take this five minute physical break, his or her activity will be measured, and according to this measured activity, a small game might show up. This small game requires the user to perform certain movements in order to complete the game.

Rewards Upon completion of the break, the user will be rewarded with several collectibles in the form of fishes based on how well the user performed during the games. These collectibles consist of a shape and a randomized colour, which both contribute to the rarity of the collectible.

Collaboration It is also possible for users to play these small games together. A user can decide to host a game which will generate a code, the other user then simply has to enter this code on their device and press join.

Groups Users can form and join groups. These groups then contain their own collection of collectibles to which the players can donate their own collectibles. These donated collectibles will then be displayed on a big screen for everyone to see.

The notifications will raise awarness, while the physical activity will help the user break their sedentary habits. The rewards for these physical activities will keep the player compelled to keep playing while the collaboration and groups will allow the players to generate small amounts of social pressure to keep eachother motivated.

3 Reflection on Product and Process

Super Starfish Mania has struggled a lot during its design and development. Errors and wrong decisions were made, and the application has suffered for it.

Minigame Based Game Looking back this was a bad idea, each game has different requirements and a different implementation and therefore is a small project on itself.

Refactoring Code During the project a lot of refactoring was done to keep the code clean and to satisfy design principles. However this came at the price of having few features and gameplay. As a result a wake up call was issued in the last one and a half week and it became a race to implement a lot of features in a short time resulting in altering our previously clean code into a mess with lots of bugs. So in the end we had neither a clean code nor a great game.

This will be expanded in the final version of this report, for now we are still busy trying to come to a acceptable end product.

4 Description of Functionalities

Super Starfish Mania contains the following functionalities:

More detailed description will follow in the final report.

Notifications

Timers

Activity Measurement

Minigames

Multiplayer Minigames

Collectibles

Group Collections

Group Collection Display

5 Interaction Design

5.1 Persona

Rick, administrator
Rick is a 25 year old administrator who works for a large wood sawing company. He just joined the company after finishing his administration college 2 years ago. By growing up in the era of information he knows well how to use basic computer software. He uses this skill every day to administrate for the company. He tries to work as much and fast as he can so he can go home early if he's done for the day. Because of this he does only take mandatory pauses such as lunch. Rick lives with his girlfriend in a cozy appartment a few kilometres from the companies headquarters. He has a healthy lifestyle and sports on a regular basis.

Julie, receptionist
Julie is a 55 year old woman. She has been the receptionist of Swirly Candy LLP for over two decades. She works from behind her desk to make sure employees and visitors are treated with care. She is calm person who focusses much on her family. In the evening she likes to sit together with her husband or read a book. She lives with her husband just outside of London, where the companies headquarters are located.

Johny, PhD candidate
is a PhD candidate doing research in the department of bio informatics. He just started his PhD after finishing his Master study program in last year. Every morning he cycles to the universities bio informatics lab to work on his research. He has much experience with computation and is an advanced computer user. He lives in a student complex just outside the university. He is part of the universities swimming team.

5.2 Context inquiry

The people followed had one thing in common, they all have a edentary lifestyle while at the office. There it splitted in two groups. The first group of people took a pause of a few minutes every now and then (average was every hour). The second group of people was stuck at their office from the morning until the pause. They worked on and on.

5.3 Product design

To be continued.

6 Evaluation of Functional Modules and Product

Notifications The notifications work as expected, every hour a notification shows up, even if the application has been closed.

Timers The timers work for the most part, but still contain some bugs, mostly in the display of the timers, where they keep ticking but are not displayed ticking.

Activity Measurement An external library was used for the activity measurements and seems to work as expected. The only downside being that it is not hard to fake actual movement.

Minigames There are currently only two different minigames available, which is extremely few, resulting in repetitive gameplay.

Multiplayer Minigames There is currently only one multiplayer minigame available, which has a small bug with the hitbox resulting slighty incorrect collision detection.

Collectibles Collectibles work as expected, although there are currently only three different collectible shapes. And when drawing the collectibles on the screen, the fading outlines in a shape are not accounted for resulting a clear border around the collectible.

Group Collections

Group Collection Display The group collection display works as expected, but sometimes has slight hiccups every couple of seconds.

There is also a new bug where if you start the application, then leave the application and then reopen the application it crashes.

7   Outlook

Super Starfish Mania contains a foundation on which expasion of the game in the form of more events and collectibles is relatively easy.