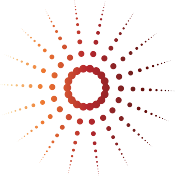
Context Project
Computer Games Group 8



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Date: 15 May 2014

Taxi Trouble Design Document

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Introduction

For each project that follows the Scrum methodology it is essential to have a clear vision of the purpose of the project. This document will provide an overview of the overall goals and requirements for the game **Taxi Trouble** that is created for the Computer Games project. This is essential as it helps the project team members to stay focussed on the most important aspects of the project, even while the details keep changing continously during the development. This is done by assessing who will be the target customers for the project and for which of their needs the product will be developed. Also what will be the most crucial elements of the project to serve the customers needs as well as possible will be defined. With these and other points it will be described how the final product will distinguish itself from the other (already existing) competing products. Finally a concise description will be given with which budget and in what timeframe the project will be developed.

1 Game description

Taxi Trouble is a competitive and cooperative interactive computer game which can be played by multiple teams each consisting of two players. The players of each team work together as taxi driver and navigator which together drive in a big city while avoiding other traffic, picking up customers and getting as much revenue as possible. At the same time each taxi driver is competing against the other taxi drivers to be the one to get the limited available amount of customers at their destinations. As well all taxi drivers can try to steal the customer from their competitors. One of the players of each team is the taxi driver which has only a limited view of the city, while on the other hand the other player of the team is the navigator which has a complete overview of the city and has to send his/her partner to the right directions. The winning team will be the team which made the most revenue after a short time period when the game ends.

2 Context

In this section a description and research will be presented for which the game is developed. In many situations a group of people have to wait together at the same place for a fixed period of time. This group may have gathered for a large event and most of them might not even know each other. As unpleasant waiting experiences might lead to more negative service evaluations as described by Yan and Lotz (2006) it is important to have a way of entertaining such groups to improve their waiting experience. A challenging way of doing this is by creating an interactive, competitive and collaborative computer game that can be played by all present persons together. This corresponds to Sellar (2004) indicating that playing computer games is not simply a form of entertainment for individuals anymore. Instead collaboration takes an increasingly larger role in playing computer games. Khaled et al. (2009) point out that a possible way to raise collaboration is by dividing tasks within a game that can be done in parallel by multiple players with one shared goal. The game Taxi Trouble does this by dividing the tasks for each team by assigning one player to drive the taxi while the other navigates the player to the customers. This is as well confirmed by Ducheneaut and Moore (2004) as they state that what makes a game entertaining and stand out for many players are the collaborative aspects of the activities, the shared experience of playing the game and the satisfaction of socializing with a group of people. Further the research of Gajadhar et al. (2008) made clear that playing games together while being at the same place results in more fun, perceived competence, and challenge being experienced then playing far away from each other. This benefits the context as the players of the game will be waiting together at the same place. Focussing on the competitive aspects of games Vorderer (2003) states that including competitive elements allows for more active player engagement and for direct feedback on the players' actions. From research of Cairns et al. (2013) regarding competition in games it follows that playing a game against another person results in more immersion than playing against a computer, but though there is no remarkable difference in immersion when the other player(s) are at the same place or not. Finally as explained by .... games offer a way of having control but at the same time just enough unpredictability so that the players can feel satisfaction and pride when a goal is reached after effort. In Taxi Trouble this satisfaction is achieved after a team has successfully managed to deliver a customer at its destination.

3 Target customer

First of all an analysis will be given of the target market of the game. The game Taxi Trouble is focussed on entertaining either small or large groups of people waiting for a short period of time together on large events like festivals. Players of the game are supposed to form pairs each competing against all other pairs that are joining the game. In the game verbal communication and the ability to see each other is essential as teamplay is the key to winning the game. Further the game is targeted on players equipped with a smart device such as a smartphone or tablet-pc with *Android* as operating system, or players that are at least familiar with the use of a smart device. The target audience of the game consists of relatively young people with a well-developed responsiveness and insight. This means that in a game the pair of players for which these skills are developed the best will have the best chances of winning the game. The age category for people that are most suited to like the game the most is therefore estimated to consist of people between the age of 12 and 40 years. Furthermore the target customers consist of both men and women, so the game is enjoyable for both genders. Also the cultural and educational background of the players is not of major influence on the capability to play the game, though it might be helpfull to have a basic knowledge of the English language.

4 Customer needs

In this section explanation is given for the customer needs that this game product will fulfill. The game is designed to entertain either large or small group of people who are waiting for a short period of time in a common place. When a person plays a game he or she is mostly looking forward to experience a sense of competitiveness, interaction and collaboration. This game has been designed to consider all these needs but moreover to make the player be completely engaged while playing the game. The product ensures that the users can start playing the game without a time-consuming setup or a long time to learn the rules of the game. It as well does not require more than a smart device that most people own nowadays.
The basic needs of the target customer needs are fullfilled by playing this interactive multi-player game, These basic needs are as follows:

- Gaining knowledge of map reading and navigation.
- Gaining and improving their skills.
- Feeling competent.
- Preserving through hard times.
- Managing danger.
- Competing for rewards.
- Cooperating for rewards.
- Satisfying the senses with pleasant inputs such as sights, sounds, etc.
- Gaining a sense of responsibility towards their partner.

5 Essential elements

This next section describes the elements of the game that are essential for fulfilling the user needs by giving a description of the most vital elements of the game. Taxi Trouble takes place in a city. Because of the low amount of people using a taxi, this city has a lot of rivaling taxi companies. The situation has gone so bad, that taxi's actually chase each other to steal passengers. The game is played in teams. Every team has one taxi. The goal of each team is to serve as many passengers as possible.

5.1 Competitive Elements

There will always be less passengers available than there are competing taxis in the game. This means that, if you want to drive a passenger, you have to get your taxi to him before all other taxis. Once one taxi has reached a passenger, it has to bring the passenger to its destination. However, other cabs can try to steal the passenger by bumping into the taxi in which the passenger is sitting. The cab that eventually gets the passenger to the destination on time, earns points. This gameplay element results in all empty taxis chasing the taxis transporting passengers. This chase is essential because of it competitive nature. It fulfills the customers' need for competition.

5.2 Random Elements

Allong the way of chasing and being chased, taxis can collect power-ups on the road. These power-ups will enable the taxi to perform a special action once activated. A simple example of a power-up would be a speed boost, temporarily increasing the speed of the taxi. Another example could be temporary invisibility, which could be used to escape a car chase or to sneak up on a taxi that has a passenger on board. These power-ups are randomly distributed throughout city. This fulfills the customers' need for an unknown factor in the game.

5.3 Co-operative Elements

The game fulfills the customers' need for co-operation through the emphasis on communication in the teams. Each team consists of two players: one driver and one navigator. The driver controls the taxi. It is his job to maneuver through the traffic to bring passengers to their destination. The driver can only see the direct vicinity of the taxi. This means he can travel down roads, but he has no way of knowing where he is going. This is where the navigator comes in. The navigator has a live map of the city that displays the current location of the taxi, the location of power-ups and the location (or destination) of the passengers. It is the navigator's job to guide the driver to the right locations. This leads to a need to communicate. The navigator is also the only player in the team that can activate power-ups. For a power-up like a speed boost, for which the time of activation can be crucial, it is essential that the navigator and the driver are co-operating. As a consequence of the aforementioned game mechanics, each pair is forced to communicate as well as possible to win from the pairs they are competing with.

6 Primary dfferentiation

6.1 Introduction

The product that we are developing has a number of properties that differentiates it from alternatives already on the market. This differentiation takes place on various levels, from a very conceptual level to a technical level. The following passage will serve to highlight the most differentiating aspects of our product, to explain what exactly makes these aspects different from existing products and why this is significant.

6.2 Comparison to non-computer games

Before making the obvious comparison between the product and other computer games, it is worth considering that the product can also be compared to non-computer games. A very important aspect of the game design is that the game will be played by a group of people that have to be in the same room and have to interact verbally. This aspect of the game design makes the game setting and the game dynamics very similar to traditional games, such as board games like Cluedo or The Settlers of Catan. The main point of differentiation from traditional games is that while the human interaction is similar, the gameplay possibilities are virtually endless due to the virtually endless capabilities of computers. The gampeplay of our game would simply be impossible to implement in a non-computer game.

6.3 Comparison to computer games

There are two computer games that share some features with our game. The first is *Taxi Driver 2*[1]. *Taxi Driver 2* is mainly similar because our game shares the same premise, namely: the player controls a taxi and has to pick up and drop off passengers. There are quite a few points of differentiation: our game will support multiplayer, feature much more fast-paced gameplay, and will have a driver and a navigator working together.

The second game that shows similarities to our game is *Spaceteam*[2]. *Spaceteam* is similar because the game shares an important gameplay mechanic with our game. Both games have two players in a team that cannot win without communicating verbally with each other. In *Spaceteam* this comes in the form of shouting Startrek-like commands to each other, and in our game this consists of the navigator shouting directions to the driver. Where the games differ is in basically all other aspects. Apart from the mentioned similarity there is no overlap in gameplay, nor is there in theme.

6.4 Technical aspects that differentiate

Taxi Trouble differs from most other Android games in the way that it handles multiplayer. There are very few real-time multiplayer games for mobile, and even less that support 4 or more players. Implementing the multiplayer of our game will be one of the most difficult technical challenges of the project. At the same time, the fast-paced real-time multiplayer is perhaps the best differentiation point of the game, offering a gameplay experience that is usually only offered on non-mobile gaming platforms.

7 Timeframe and budget

In this section the timeframe and the budget of the project is described.
The time frame that we are given for this project is 10 weeks, in which every week (starting from the third week) a working prototype is delivered. For each week this basically will take about 28 hours (1 EC) per team member. The next table is the timetable [3] given for the deliverables of our project:

08.05.2014	Product vision - Draft
15.05.2014	Product planning - Draft
	Emergent architecture design - Draft 1
16.05.2014	Product vision - Final
23.05.2014	Product planning - Final
26.05.2014	Initial input for SIG
30.05.2014	Input for software quality evaluation by SIG - First version
19.06.2014	Emergent architecture design - Draft 2
	Final report - Draft
26.06.2014	Input for software quality evaluation by SIG - Final version
20.06.2014	Emergent architecture design - Final
	Final report - Final

The table shows in how many days we have to finish every deliverable. At the end of each one-week sprint there should be a shippable product, i.e. a working, playable game.

There is no financial budget for the project, however the only things that can fall under this subject are the Android devices that we have and the ones that we can borrow to test our product and all the man hours we are going to put in the project to achieve our end product.

[1] Taxi Driver 2 Website: `http://www.manastone.com/smart_phone/taxi2_.mana`
[2] Spaceteam Website: `http://www.sleepingbeastgames.com/spaceteam/`
[3] Planning Games Project V2.1

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