

Product Vision

Context: Health Informatics

Group: HI1 a.k.a. Geen Naam (Group Number 4)

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Introduction:

In the health informatics context we are working on a solution to treat people with various sorts of psychoses in a virtual world (known as virtual reality therapy). CleVR has acquired significant experience in this area and provided our group with the virtual world. In this world patients can interact with other people and objects set in a shopping street. The world attempts to simulate real world situations to practice with. With this program it is possible to analyze the patient's behaviour and treat the patient's condition during exposure to the virtual world.

We are asked to develop a program that tracks the virtual world using a 2D map representation of the world. In this map the therapist should be able to see all people and objects present in the world as well as being able to perform some basic actions on certain people or objects. These actions include talking, moving (or following), changing emotions and interacting with other objects and characters.

In the rest of this document we will describe our vision of the product. We will do this by defining our target audience, stating crucial attributes to satisfy selected needs, compare to other similar products and finally set a target timeframe and budget.

Product Vision

In the following part we will describe the target audience, the customer needs to be addressed, the crucial attributes to be satisfied, a comparison to similar products on the market and finally the target timeframe and budget to develop and launch the product.

Target Audience

Client

Our first target is the company CleVR. This company is our client. They told us about what they are currently working. And told us the preferences for the product that we will make. Together with them we construct the requirements, how the product will work and what it will look like. They told us that we have to make a product which needs to be used by therapists to help patients with psychosis. The main goal of the product is to show a map from the 3D environment.

Patient

The patient with psychosis could be seen as a target audience for the VR world, but our product is only about how the therapist can control the VR, so our main target is the therapist. The patient puts on the VR goggles and is the person that is central in the map.

Therapist

Truus is one of the therapists who is using our product. Truus is a 30 years old therapist. She treats people with a psychosis to overcome their fear. She already has some experience with treating people with acrophobia, that has been proven effective (Rothbaum, B. O., Hodges, L., Smith, S., Lee, J. H., & Price, L., 2000). The next step is to help people with agoraphobia and other social phobias. To do this CleVR has developed a 3D shopping street (H.I.V.R.S., 2014) where the patient can walk around. To improve the effectiveness Truus should be able to control the 3D environment. As Truus cannot join the environment with the patient we will create a 2D map where Truus can take control over the environment. Truus has some older colleagues who are not that familiar with the newest technology. Kees is one of those colleagues. Kees is 63 years old and the oldest member of the therapist team. He has a lot of experience in his profession, and worked on all kinds of psychoses. Although he is not that familiar with the newest technology, he is going to use the new VR system. This means we have to adopt our product for simplicity, thus achieving as little clicks as possible. Icons will serve as a guide for the user to display the sorts of actions available, in order to make quick choices from a larger set of actions. In this way Kees doesn't have trouble working with the VR system.

Customer Needs to address

The product will address the needs of the therapist by displaying a real-time 2D version of the current state of the VR-world, with negligible delay between the actual VR-world that the patient is in and the therapist's 2D-map representation. The therapist will need to mainly focus on and monitor the patient, hence the product will have a simple and responsive GUI to keep the interaction with the 2D-map representation at a minimum. Yet, the manipulation

of characters and other objects in the world needs to be effective to address and improve the patient's condition. Due to the fact that these conditions vary from patient to patient, it should be possible for the therapist to easily create and maintain the focus on certain aspects of interaction from the patient and the other virtual characters and objects in the world.

Crucial Attributes to satisfy these Needs

The most crucial aspects of the application are the real-time and responsiveness constraint and the fact that it is easy to use, as the main focus of the therapist should lie on monitoring and evaluating the patient and not on manipulating the VR-world. To maintain the focus on the patient all actions are doable with little effort. As you can see in the image 1.1, when you click on the portrait of a person a menu pops up around the character that shows you all the actions you can perform. All actions are executable within two clicks so that the focus of the therapist can stay with the patient. To change emotions (Image 1.2) click on the emoticon next to the character's portrait, which gives you the other options of emotions. This way, changing emotions is also done within just two clicks. To perform walking simply click the character and draw the path that you want to walk, this is also done with little effort to keep the focus on the patient, you can see how this is done in image 1.3. Furthermore, it is immensely important that the map is clear and should provide a quick overview of the current state of the environment, see image 1.4. We will use abstract icons to achieve this goal, like a green square for a tree and emoticons next to a character's portrait to quickly show their emotions. There is no need for visually impressive icons because that would only distract the therapist and slow down the application.

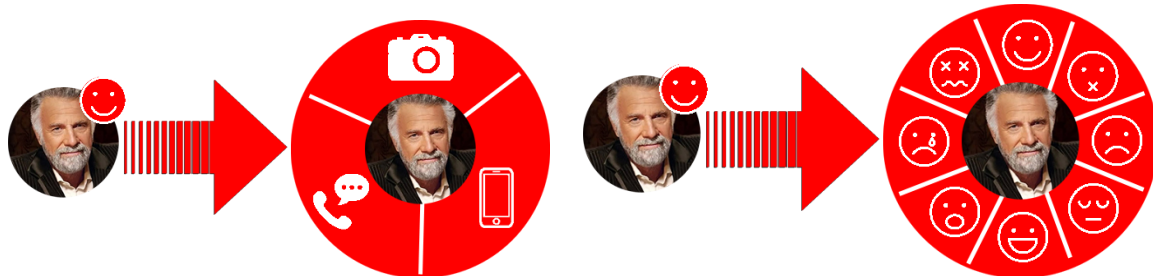


Image 1.1: Click on character

Image 1.2: Click on emoticon

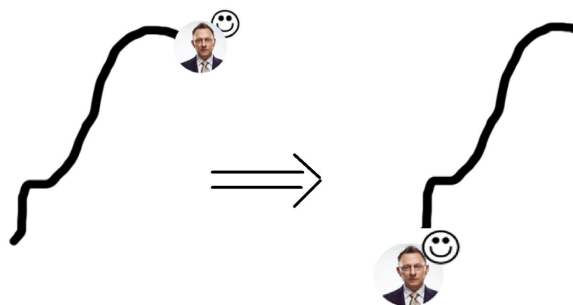


Image 1.3: Move character

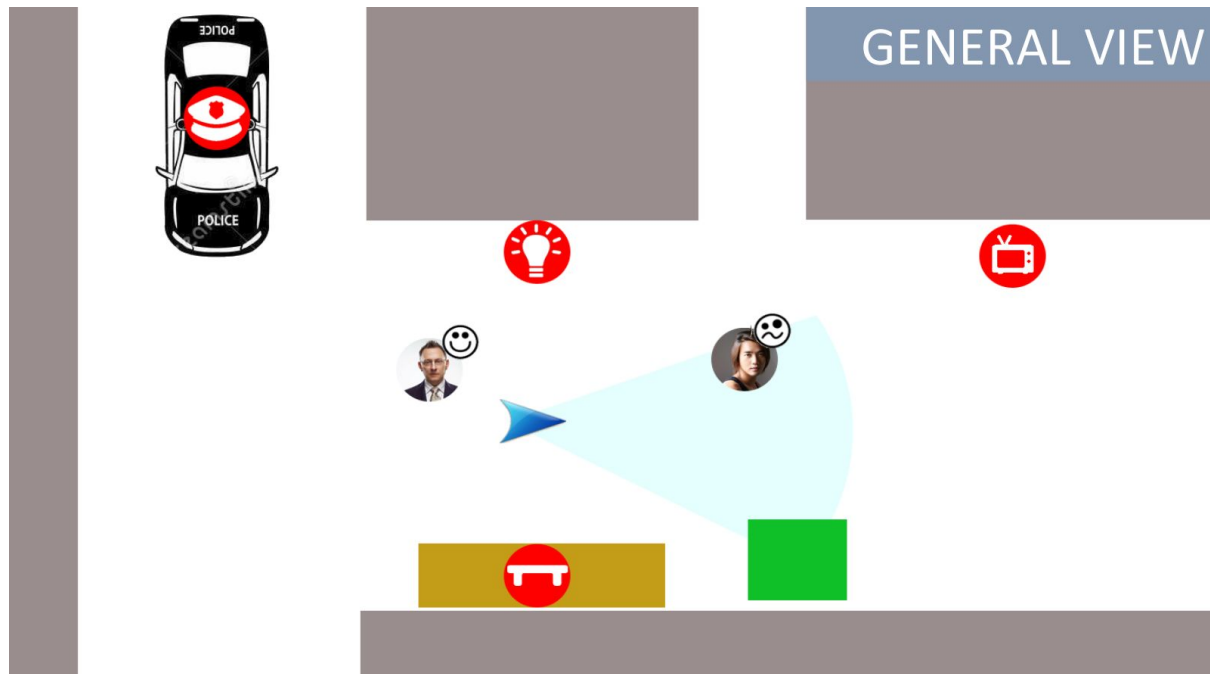


Image 1.4: General overview

Comparison to similar Products

The world of the VR is developing rapidly in the last period. As we are developing a product to assist a VR application we need to keep track of the current market. For now the most innovative sector is the consumer sector. Think about the gaming sector that starts focusing on the VR world. Also the companies are interested in making VR movies. As this are mostly entertainment application this is no direct competition to our product.

Other sectors of applications are: education, military, business, engineering, sport, etc. (Virtual Reality Society - Applications of Virtual Reality, 2016). Those are sectors that are not competitors of our sector.

Health Sector

Many companies which aim to find a way to resolve psychosis do not use virtual reality therapy. Most companies use special medication, depending on the problem of the patient, or various kinds of verbal therapies, i.e. cognitive behavioral therapy (Psychosis - Treatment, 2014).

To test if this medication or therapy helps, or to diagnose the problem, they use real actors to simulate certain scenarios. Using actors is asking for problems, as the actors may not perform well, or are simply not available.

Another problem is the cost-factor, as it would be very expensive to pay for each actor.

Virtual reality takes away all these problems. The therapist is able to create as many actors as he/she wants and they all perform as the therapist wants them to perform.

Other companies send people directly in the real world, which can have many negative effects. For example a patient can get violent and affect others in the real world (Psychotic Disorders. (2016, April)).

Virtual Reality

Again using virtual reality solves these problems. When a patient gets angry at a virtual character, no real damage will be done to other people, and for the patients sake the program can be paused.

Looking at other competitors in the Netherlands on the treatment of phobias there cannot be one found where CleVR isn't included in. In the top results of "Virtual reality psychoses" (In English the same) on the Dutch google page CleVR is involved. Also using the search term "virtual reality therapie vliegangst" (In English: "Virtual Reality therapy fear of flying) lead to the same conclusion. We can conclude that our product is an unique product in the Netherlands.

Looking globally there are some competitors (The Virtual Reality medical center, 2016).

If we compare the product with existing products of CleVR, the products have the same core features: The patient is placed in a virtual environment, i.e. an airplane. The environment changes and changing factors from the environment apply on the patient. (H.I.V.R.S., 2014) Hence this new product is a good addition to the other products which all address certain health problems.

Timeframe and Budget

The last question we will answer is: what is the target timeframe and budget to develop and launch the product? (The Product Vision., 2009, January)) Answering this question we will have an insight into the most important resources, needed for a project.

"My favorite things in life don't cost any money. It's really clear that the most precious resource we all have is time." (Steve Jobs).

For this project we have ten weeks from start to finish. The deadline is due to the 23rd of June. The biggest part of the first two weeks we are using for setting up the project. This means we only have 8 weeks to develop the real product.

The budget for this product is limited, or even better said, it is zero. More budget is not needed for this product. As we get the 3D environment from CleVR. The software we use is free software or software where we can get a student licence.

As we do not have any budget. We cannot afford high quality images and icons. With this fact we will mainly focus on the functionality of the product, rather than the looks of the product. As we also have a limited timeframe we cannot make the images and icons our self.

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Glossary

VR - Virtual reality

Acrophobia - extreme or irrational fear of heights

Agoraphobia - extreme or irrational fear of open or public places