# Product Vision and Planning

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**Abstract**

For considerable time, therapists have been researching the possibility to give social phobic patients a treatment with avatars. So far, this has been done in a lab on a university or hospital. To reduce costs new research is investigating the possibility to bring the treatment to the patients home by introducing an eCoach. The eCoach should take over most of the tasks of the therapist. These include motivating, helping and informing the patient, reflecting on exposure sessions, monitoring treatment progress and giving feedback.

A plan has been made to develop the eCoach system. In order of priority the following system components will be developed: anxiety questionnaire form, progress overview, communication server, progress reflection, personalized avatar, suggestions from avatar, outside events discussing.

To ensure the quality of the shipped product, a clear definition of 'done' is given. To be done, a feature has to be tested with unit tests and integration tests. The performance must be tested, the code must be sufficiently commented, documented and reviewed by automatic tools and peers. A sprint is completed when the backlog is up to date, the code is merged, tagged and refactored for maintainability, the UML diagrams are updated, and has been approved by the product owner. A release is done when is has been thoroughly tested, both automatic and manually, and has been approved by the product owner.

# Contents

# Chapter 1

# Introduction

The problem of Social Phobia in our society has been prevalent for a considerable time. It ranges from people feeling uneasy when speaking in front of a crowd to individuals being unable to leave their houses because of their anxiety. A problem with curing this type of phobia is that in vivo treatment can be difficult: those exposure treatments most of the time require the presence of other people. A possible solution to this problem is virtual exposure, or even beter: virtual exposure at home. To ensure the quality of virtual treatment at home, an eCoach is needed. An eCoach is a device or program that can be used by the therapist as a tool to act in behalf of the therapist when the patient is at home. Using an eCoach can create an easier environment for the patient to be treated in and can make the decision to ask for treatment easier and can speed up the process.

The goal of this report is to describe the vision on how the process of creating an eCoach works. The main question asked are: "What does the user want to do with the product?", "How does the communication between the therapist and patient work" and "What is the global planning for delivering working versions of the program?".

The report will start off with describing the product. This will consist of the Product Vision, which describes who the customers are and what they need, as well as a high-level product backlog that contains epics to describe the vision and closing off with a Roadmap with the planning of major releases of the product and what the goals are for those releases. Next is the actual Product Backlog. This will contain a variety of user stories about features, defects, technical improvements and know-how acquisition. It will also cover the initial release plan. Then the definition of when this product is considered done is discussed. What requirements have to be met to consider the product finished and what are the milestones along the way to reaching that goal. The report will close off with a Glossary that contains the definitions of technical terms used throughout the document.

# Chapter 2

# Product

This chapter will provide a basic overview of what the product will become. The first section describes the team's vision on the product's behaviour and what purpose it serves. In the next chapter this vision is refactored in some high-level product backlog items whom can then be further refined into the product backlog. These high-level product backlog items are then prioritized into a roadmap which serves as an indicator of when the team wants the items to be implemented.

## 2.1  Product vision

For Social phobia therapist who want to provide patients with a home treatment system, eCoach is a solid solution for aiding patients with minimal interaction with the therapist. To ease treatment of social phobic patients, virtual exposure is an ideal solution, for the following reasons:

- It improves the comfort of the patients, because there is no need to leave their home regularly.

- It reduces costs by minimalizing interaction with the therapist

- It simulates hard to realize situations in in vivo therapy such as presenting for a crowd or waiting at a bus stop.

Currently only virtual therapy systems exist that require a therapist to be present and make the avatar interact with the patient by listening to the patient and selecting the appropriate response. These systems are not sophisticated enough to be used at home and in large scale because the presence of a therapist is still required. To counter this problem, attempts have been made to develop an virtual coach to guide the patients with their therapy at home. eCoach will help, stimulate and inform the patient, but also give feedback and allows the patient to communicate the results and progress with the therapist. The results of the exposures are automatically shared with the therapist. This will result in improved adherence of the patient because he/she knows that the therapists monitors the progression. Furthermore, the eCoach gives the patient advice to define sub-goals that are easier to realize than the main goal. Before an exposure session, the eCoach avatar will clearly instruct the patient about the session to improve the patients efficacy. After an exposure session, the eCoach will reflect on the session with the patient and will provide the patient with an overview of his anxiety levels during the session (see appendix A). When appropriate, suggestions for improvement will be given. Because the eCoach system has to be used by people with different levels of computer skills, the system will have to be user friendly and adaptable to the level of experience of the user. The eCoach avatar will help the user to use the system by giving tips and suggestions at the appropriate moments.
All the interaction with the eCoach will be directed by the therapist. This results in maximized control for the therapist with minimal interaction with the patient.

## 2.2  High-level product backlog

Anxiety questionnaire form:
Adaptable form, which allows the system to gain information about the patient's current anxiety status. As an form or the avatar will ask the questions, which is more personal and could be more helpful.

Communication server:
This allows the patient and the therapist to communicate online and will also send and retrieve the patient's files, progress and therapist's results.

Discussing events outside therapy:
The avatar will talk with the patient about social contact the patient has had outside the therapy. The system will gain more information about the patient's usual behaviour and might open up the patient some more if the patient can just talk with the avatar.

Overview of patient's progress in therapy:
This will show the progress of the patient in graphs, tables and animation, which will give a clear overview of the patient's progress.

Suggestions and tips from the avatar:
Tips and suggestions the avatar will give to the patient based on the results and behaviour of the patient. The avatar also discusses things the patient has to do for the next session according to the result of the previous session(s). It will give more specific tips and suggestions that will help the patient in his current situation.

Personalized avatar:
The appearance of the avatar is adaptable by the patient. The patient should also be able to adapt the amount of suggestions and help the avatar gives about using the system.

Reflection of patient's progress in therapy:
The avatar is able to interpret the results of the patient and will discuss the results. The avatar discusses what the results mean and what the patient could do to improve or what the patient has done really well.

## 2.3   Roadmap

- Friday March 29: Anxiety questionnaire form

- Friday April 5: Overview of patient's progress in therapy

- Friday April 26: Communication server

- Friday May 3: Reflection of patient's progress in therapy

- Friday May 10: Personalized avatar

- Friday May 17: Suggestions and tips from the avatar

# Chapter 3

# Product backlog

The product backlog is a list of features and user stories that need to be implemented by the scrum team. The items on this list may need to be refined further, so that they can be implemented in a single sprint.

## 3.1 User stories of features

- As a therapist I want to monitor the patient's progress
- As a therapist I want to gain information about the patient via an adaptable questionnaire
- As a therapist I want to be able to set a treatment plan
- As a patient I want to communicate with my therapist
- As a therapist I want to communicate with my patients
- As a therapist I want to retrieve files of the patient's progress
- As a therapist I want the avatar to talk with the patients about their social events outside of the therapy
- As a patient a clear overview of my progress in form of graphs, tables and animations
- As a therapist I want an overview of my patients
- As a patient I want to be motivated by the avatar
- As a patient I want tips and suggestions from the avatar based on my progress
- As a patient I want to have clear instructions what I have to do for the next session based on the previous session.
- As a therapist I want the avatar to be able to adapt the way it gives feedback to the patient
- As a patient I want the avatar to reflect results with me and say what I have done well and where I need to improve.

## 3.2 User stories of defects

There are no user stories of defects at this time.

## 3.3 User stories of technical improvements

There are no user stories of technical improvements at this time.

## 3.4   User stories of know-how acquisition

- As a developer I need to fully understand what social phobia means.

- As a developer I need to know how to communicate with social phobic patients.

- As a developer I need to know what kind of situations social phobic patients fear.

- As a developer I need to know how to program an avatar.

## 3.5   Initial release plan

The following items are the minimal releasable features that the final release must have to be satisfactory to the user and product owner.

- Anxiety questionnaire

- Overview of patient's progress in therapy

- Communication server

- Reflection of patient's progress in therapy

# Chapter 4

# Definition of Done

The definition of done (DoD) is a guideline to review the work that has been done and if it will be acceptable for release. To have a definition of what is done and what is not, makes it easy for team members to correct each others work, but also to check if your own work is ready. This section is divided in three parts. The first will describe a definition of done for a feature or a user-story. These are the product backlog items that are due in one sprint. The next part is a definition of done for a whole sprint. This focuses mainly on the integration of the different features. The last is the definition of done for a release. The release has most of the features implemented and is potentially ready to ship.

## 4.1  DoD for a Feature

- Unit tests written

- Code complete

- Unit tests are executed and passed

- Integration tested

- Performance tested

- Code sufficiently commented and documented

- Code is reviewed with automatic tools or by peers

## 4.2  DoD for a Sprint

- All features and user-stories that are not done added to product backlog

- New code is properly merged and tagged

- Code is re-factored to make it maintainable and expandable

- UML diagrams are updated

- Sprint has product owner approval

## 4.3  DoD for a Release

- Thoroughly automatically tested

- Manually tested

- Product owner approval

- Product is properly packaged

# Glossary

**avatar** a virtual person. 1, 3–6

**eCoach** an online virtual coach that aims to help patients solve problems on their own with minimal input of a therapist. 1–3

**scrum** a project managing method designed to be flexible and handle changing requirements easily by releasing not feature complete software in short time periods, called sprints. 5, 8
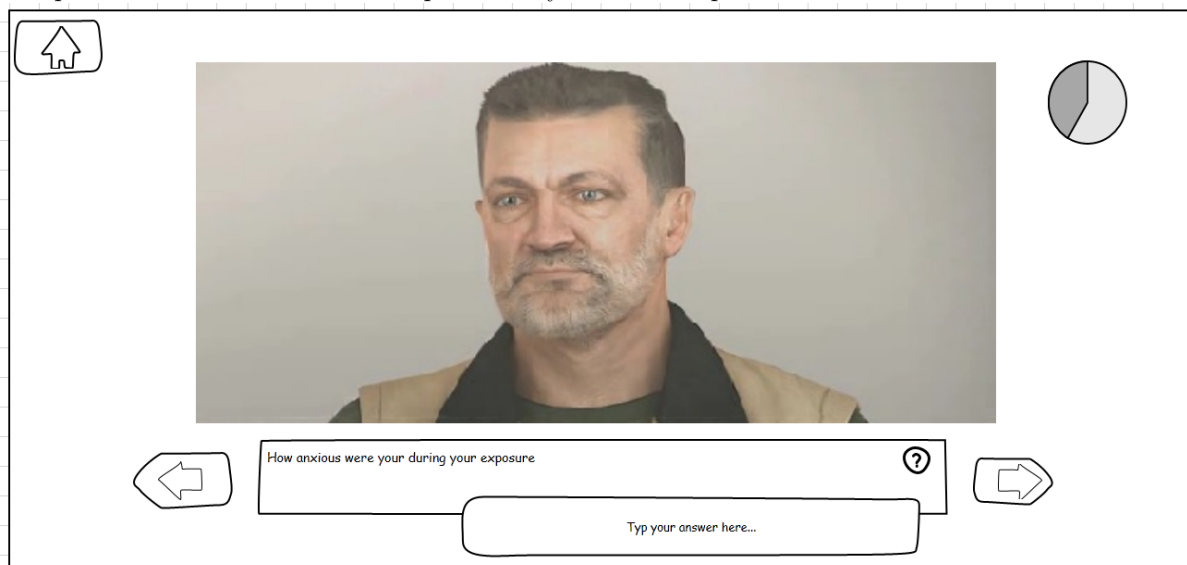
**sprint** the time interval in which the scrum team delivers a working piece of software. Usually a sprint is one or two weeks. 1, 5, 8

**UML** (Unified Modelling Language) a standardized way of visualizing code and project architecture. 1, 7

# Appendix A

# Grahpical User interface

The patient will fill in answers in a questionarry form. Example of the form:



The patient wants an overview of his/her progress. Example of the interface: