D2.3 Game interface & concept design

ID and title	D2.3 Game interface and concept design
Description	Report on the concept, interaction design, UI and UX design process
Work package	WP2 User requirements and design
Status	Internal review
Type	Software
Confidentiality	Restricted
Version	v1.0
Actual date of delivery	30.05.2018
Contractual date of delivery	M12 / 30.04.2018
Responsible partner	LFTL
Reviewer for external release	Marije Blok, NFE

Project name	MI-Tale
Project number	70-73500-92-032
Project start date	1 May 2017
Project duration	24 months

AAL PROGRAMME

ACTIVE ASSISTED LIVING

JOINT PROGRAMME

AAL-2016

MK Prosopsis Ltd
www.mkprosopsis.com

EERSTE VERDIEPING
INTERNET COMMUNITIES

LIFEtool
computer aided communication

nationaal ouderen fonds

Document history

Version	Date	Status	Changes	Owner(s)
0.1	22.05.2018	Draft	Added ToC, chapter 3, 4, 5	LFTL
0.2	28.05.2018	Draft	Added chapter 6	LFTL
1.0	30.05.2018	Internal review	Added chapter 1, 2, 7	LFTL
2.0	04.06.2018	Reviewed	Emphasized confidentiality and restrictedness of the document and asked for some small clarifications	NFE
2.1	04.06.2018	External review	Added input/changes from review	LFTL

Contributors

Partner Acronym	Partner Full Name	Person
LFTL	LIFEtool gemeinnützige GmbH	Stefan Schürz, Michael Gstöttenbauer
NFE	National Foundation for the Elderly	Marije Blok, Nina van der Vaart

Acronyms

Term	Explanation
DoW	Description of Work
APK	Android Package File
UI	User Interface
UX	User Experience

Table of Contents

1 Summary

According to the DoW Deliverable 2.3 has the nature of software. Therefore, it consists of two parts: the main result being the interactive prototype and this document, which describes important steps of the methodology followed during the design process.
The prototype is a full designed version of the MI-Tale application with mocked functionalities. It is an Android APK, which can be installed on smartphones and tablets with Android version 5.0 or higher. The prototype was translated in all pilot site languages (German, Dutch, Greek) and English and is available as Android APK to be downloaded under https://goo.gl/4YuzTg
Together with the functional design document and the graphical design specifications, this prototype serves as a model to be followed by EVIC in order to implement the UI of the fully functional MI-Tale app.

In the DoW this deliverable was initially indicated as public. However, as the outputs (both this document and software outputs) are input for further implementation and exploitation steps and are still iteratively tested by participants the consortium decided to change the type of confidentiality to restricted.

2 Introduction

This document serves as short report of the activities carried out within task 2.3 game co-design. LFTL was leading this task and followed an acknowledged, state-of-the-art design process for software applications. The different activities within this design process are described more extensively in the next chapters of this document.

1) **Concept workshop:** A concept workshop is one of the most effective ways to gather requirements quickly and accurately. Having the required project partners to meet in person and offer their input reduced the risk of missed requirements and improved the odds of gathering accurate, thorough information needed for the MI-Tale software concept.

2) **Wireframes (low fidelity):** A basic visual representation of the app, which efficiently outlines structures, layouts and interaction design. They help to express design ideas and make sure not any important parts are missed. The wireframes functioned like a channel that helped all project partners to understand the envisioned MI-Tale app better. For the partners that were not present in the workshop, it visualized the outputs of that interactive session.

3) **Mockups (middle fidelity):** A graphical designed representation of the app that demonstrates information frames, statically present content and functions. Unlike a wireframe, a mockup looks more like a finished product, but it is not interactive and not clickable. The mockups provided the project partners a picture of how the finished product will look like and helped review the MI-Tale app visually.

4) **Interactive Prototype (high fidelity):** A simulation of the final interaction between the user and the interface, already very close to the finished product. Here, workflows were simulated and user interaction could be tested. Early prototyping can save a lot of development costs and time so that the work of back-end product architecture will not be in vain because of unreasonable user interface design. The interactive prototype was an excellent tool to obtain early user feedback and to test the MI-Tale app.
   Together with the functional design document and the graphical design specifications, the interactive prototype serves as the model for real coding of the UI of the fully functional MI-Tale app.

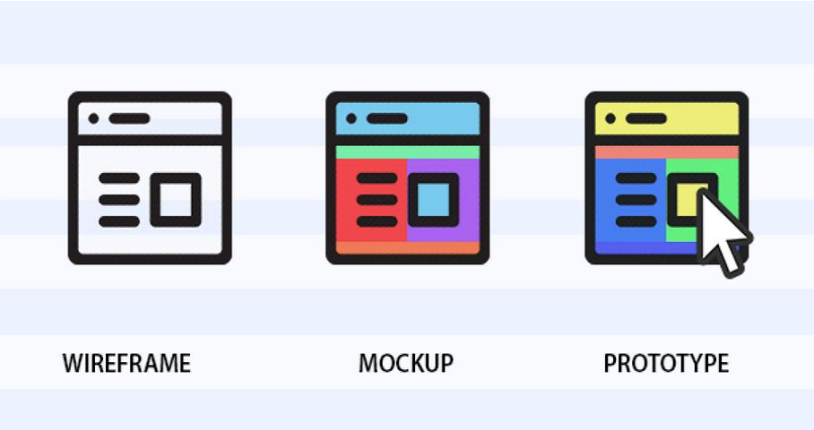
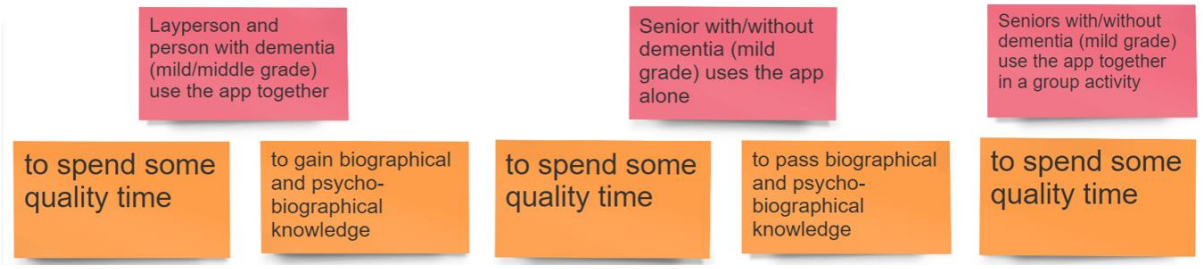


Figure 1 - Graphical explanation of wireframe, mockup and prototype

3 Concept

The design process started in August 2017 in course of a workshop at the LFTL center in Linz. The idea was to get all relevant project partners, Böhm-practitioners, UX and graphical designers as well as software developers together to reach a common understanding on the challenges of the envisioned app, collect all ideas and give room for visions and brainstorming exercises. To support the participants a moderator was invited to guide through the creative process and keep record.
The common understanding was the project idea of developing a web based, interactive game that will trigger memories of the personal history of people with dementia and help record them. But what does that mean in terms of design and functionality?
In a first step, it was important to identify the basic scenarios and user stories: Who is using the app? In what situations? For what purposes (motivation and functionalities)? After making a basic distinction between professional setting and private use, the following users and situations were identified:

1. Private setting



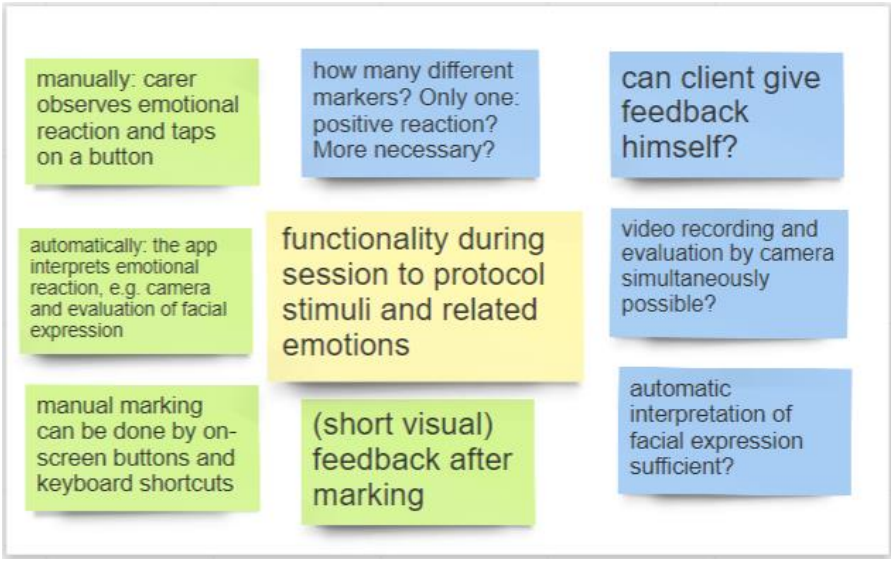
2. Professional setting

The identified users in the private setting are seniors with dementia (mild and middle graded) or seniors without dementia who want to share psycho-biographical knowledge before they - maybe - lose the ability to do so and their informal caregivers and relatives.
The identified users in the professional setting are seniors with dementia (mild and middle graded) and professional (either Böhm certified or not) caregivers.
In the discussion, it became clear that the app should use photos, music and video-material as primary memory-triggering elements and that the app shall provide functionalities to record the reactions by video or audio. The game/activity itself must not be too complicated, it should not be able to fail and there should be no winners or losers. Early ideas in this stage suggested defining categories of different questions accompanying the visual display of media, so that users are excited to start telling. However, this idea was dropped later because it was too complex (implementing own media by the user would have become too complicated).

Having reached a common agreement on the basic scenarios and use cases, we started to derive the required functionalities of the app. As this could not be finalized during the workshop, it was agreed to use the online tool RealtimeBoard [1] to continue this task.

Definition of core-functionalities

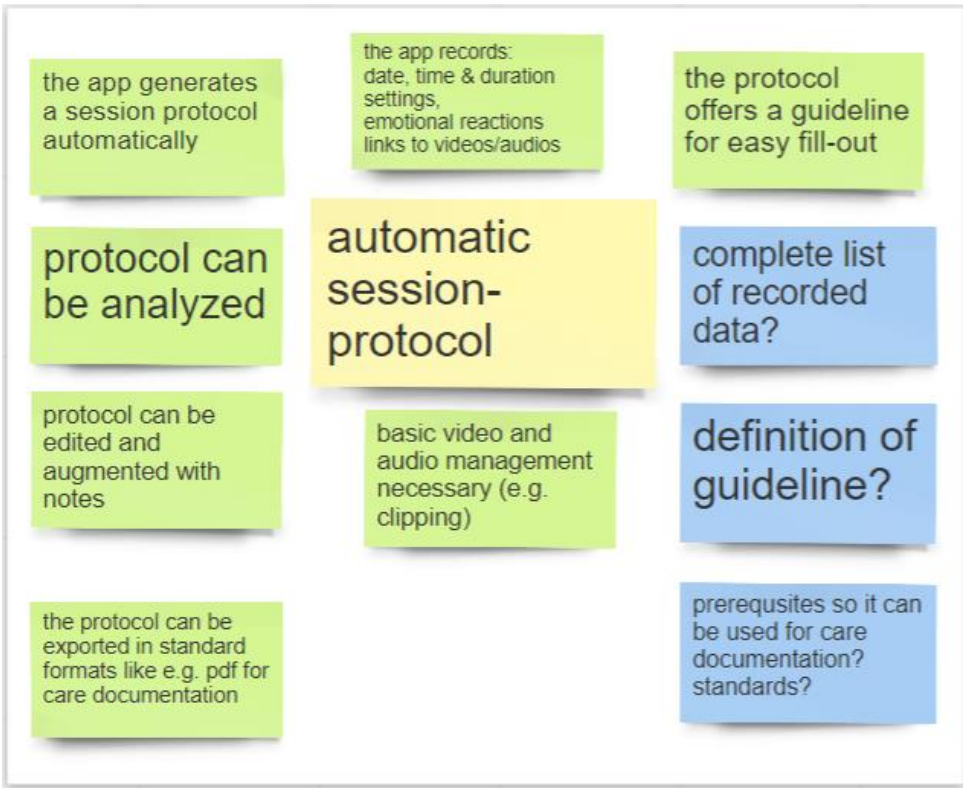
In the following weeks the must-have functionalities were collected and finalized together with the leading team of the Böhm-method and on the basis of Deliverable 2.1 Dementia care and psychobiography care model. In addition, the findings presented in Deliverable 2.2 User requirements report served as valuable input for the whole design process of the MI-Tale app.



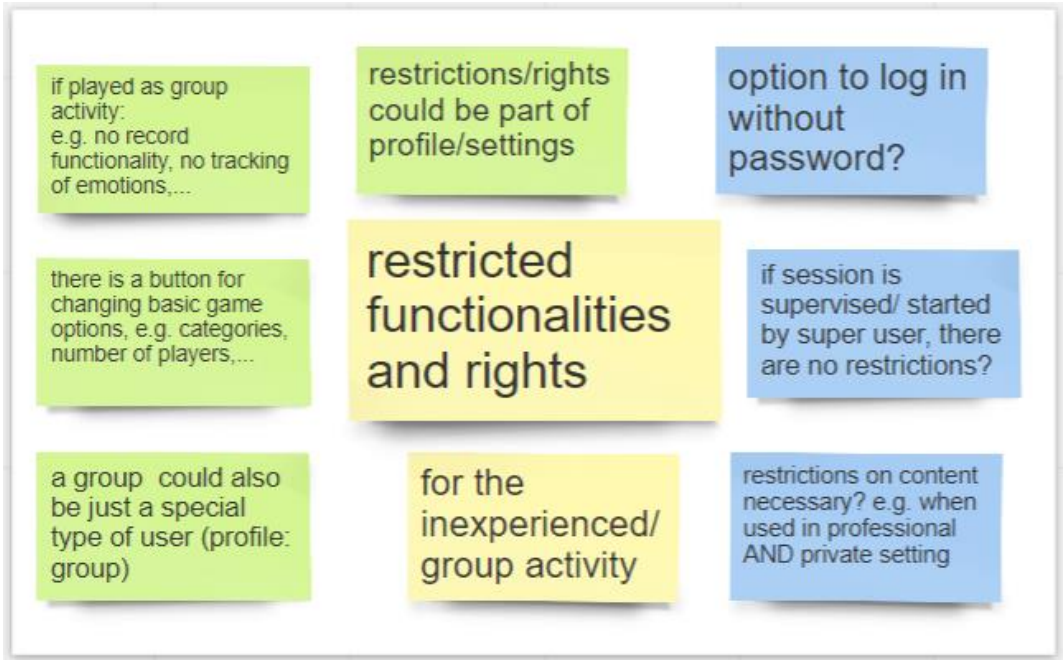
[1] https://realtimeboard.com/

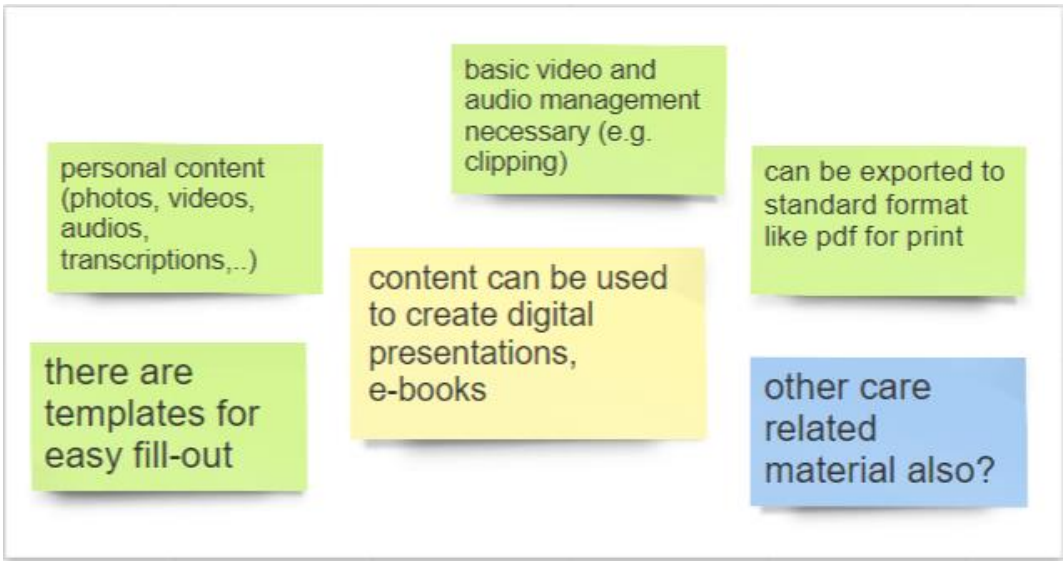

video
there is a button for changing between audio/video
buttons on-screen but also keyboard shortcuts
audio only
record functionality during session
test functionality necessary? (compare Skype)
there is a button for starting and stopping the recording
each recording is saved automatically with time stamp
ethical issue: consent for recording necessary
visual hint for indicating recording
great feature: display a small image of screen/stimulus


adapt existing content (remove/add material, remove/add categories,...)
more content by in-app purchase?
will there be a link to a data base?
editor
add content: photo, video, text
use of third party content?
content needs tags
search function for easy management
data protection
possibility to import multiple content at once and edit afterwards
public and private content


the app generates a session protocol automatically
the app records: date, time & duration settings, emotional reactions links to videos/audios
the protocol offers a guideline for easy fill-out
protocol can be analyzed
automatic session-protocol
complete list of recorded data?
protocol can be edited and augmented with notes
basic video and audio management necessary (e.g. clipping)
definition of guideline?
the protocol can be exported in standard formats like e.g. pdf for care documentation
prerequsites so it can be used for care documentation? standards?


First step is to log in
To log in one can choose from selection of profiles (compare windows log in) or type credentials in
option to log in without password?
easy setup and start preparation
depending on user the start screen offers different options and a Start button, which starts the activity
what are the basic game options?
there is a button for changing basic game options, e.g. categories, number of players,...
using the app offline


if played as group activity:
e.g. no record functionality, no tracking of emotions,...
restrictions/rights could be part of profile/settings
option to log in without password?
there is a button for changing basic game options, e.g. categories, number of players,...
restricted functionalities and rights
if session is supervised/ started by super user, there are no restrictions?
a group could also be just a special type of user (profile: group)
for the inexperienced/ group activity
restrictions on content necessary? e.g. when used in professional AND private setting


basic video and audio management necessary (e.g. clipping)
personal content (photos, videos, audios, transcriptions,..)
can be exported to standard format like pdf for print
content can be used to create digital presentations, e-books
there are templates for easy fill-out
other care related material also?

4 Wireframes

With all the information and requirements gathered and sorted, LFTL was ready to begin with the creation of wireframes. These answered crucial layout, structure and organization questions. Using Balsamiq[2], a special wireframing design tool, these sketches provided a first impression of what the app could look like and the basis for repeated discussions among project partners. The draft incorporated all required features like:

- Two activities for single and group play
- Login for single user, organizations and guests
- Memory books
- Recording functionality and log files
- Editor functionality for media and memory books

The basic activity is the presentation of images, videos and music (cards) divided into Böhm-specific life themes. Reactions can be rated and tagged for use in memory books. Reactions are recorded (video/audio) for use in log files and memory books. To get a more game-like activity, especially for group play, there is an optional quiz mode: Cards are covered first and are revealed step-by-step like in old-fashioned quiz shows.

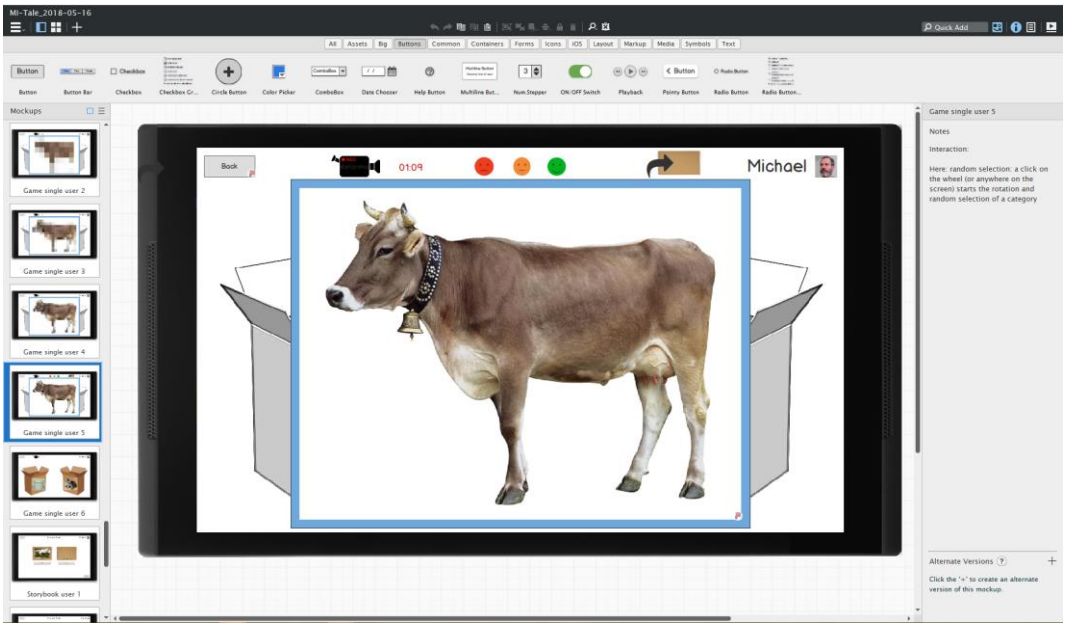


Figure 2 - Image presentation/wireframe

[2] https://balsamiq.com/

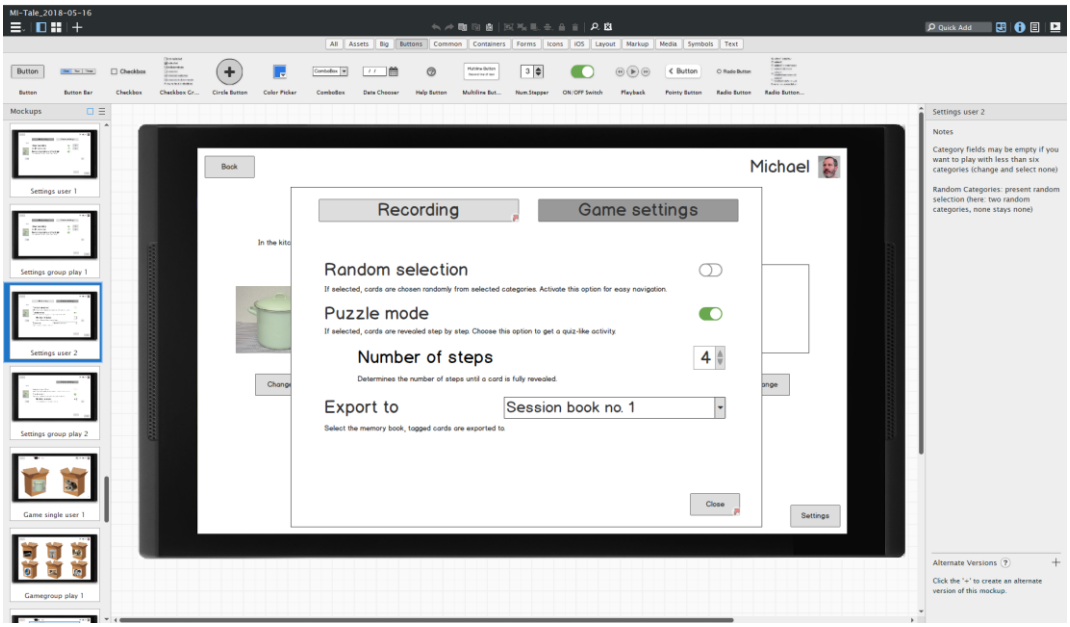


Figure 3 - Settings/wireframe

The wireframes were presented to and discussed with all partners for the first time during the consortium meeting in Cyprus. The basic layout and core-functionalities were approved, open issues addressed and further tasks identified.

5 Mock-ups

Mock-ups do for visuals what wireframes do for structure. They are static displays of how the visuals of the final product should look. This offered the opportunity to make vital decisions about colour schemes, typography and style affording some time to experiment.

Having created a coherent wireframe version of the app before, it was possible to launch the next important step and to start the graphical design process. The Austrian design studio ARTGROUP[3] was subcontracted by LFTL and authorized to come up with the first design sketches. In a kick-off meeting prior to the consortium meeting in Cyprus, the wireframe version was presented to the team of ARTGROUP and a first design idea was created: "A visit at the flea market". The concept "flea market" is age-independent, well known to everybody and should form a congenial framework for the app. The process was again iterative, following pictures displaying a sample of the final result. The overall design was kept clear and simple, a color scheme helps general orientation.

As a result of lively discussions during the Cyprus meeting, it turned out that the first design concept idea of "flea market" as we know it in Austria or the Netherlands is not recognized in Cyprus. Therefore, the design was slightly adapted and kept more general towards "attic" or "cellar room".

[3] https://www.artgroup.at/

The mockups were iteratively created following various loops between ARTGROUP, LFTL and ENPP. After the full set was completed the mockups were presented by ARTGROUP to the consortium in a plenary meeting in February. Feedback was gathered and the mockups were refined.

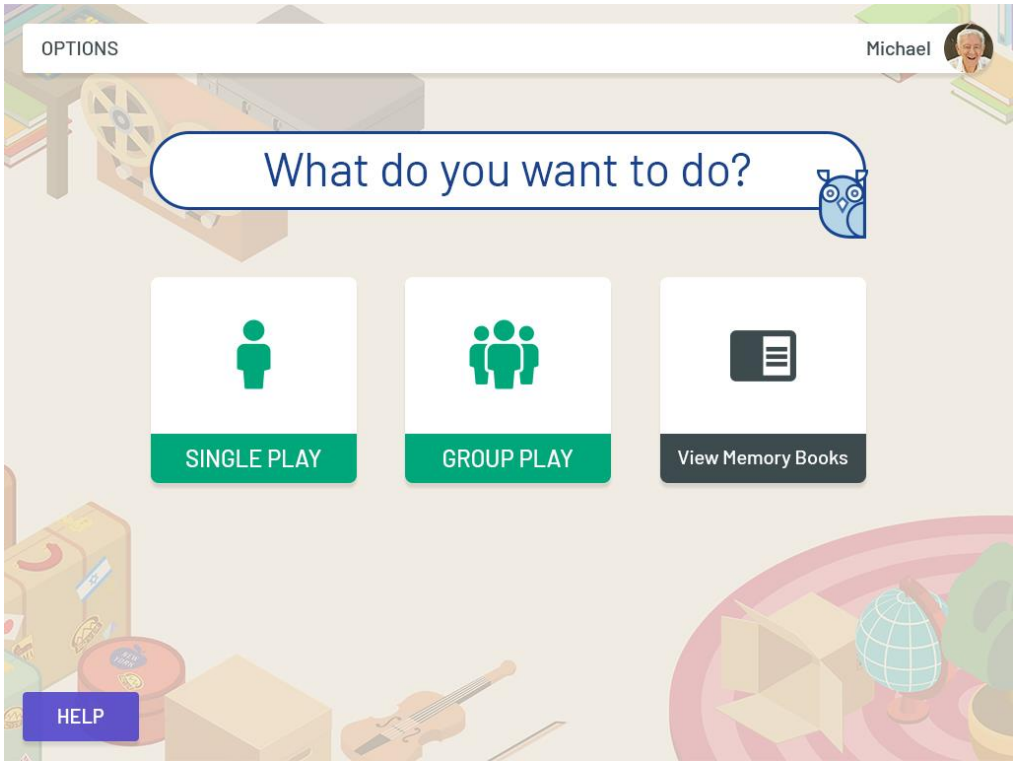


Figure 4 - Start screen/mockup

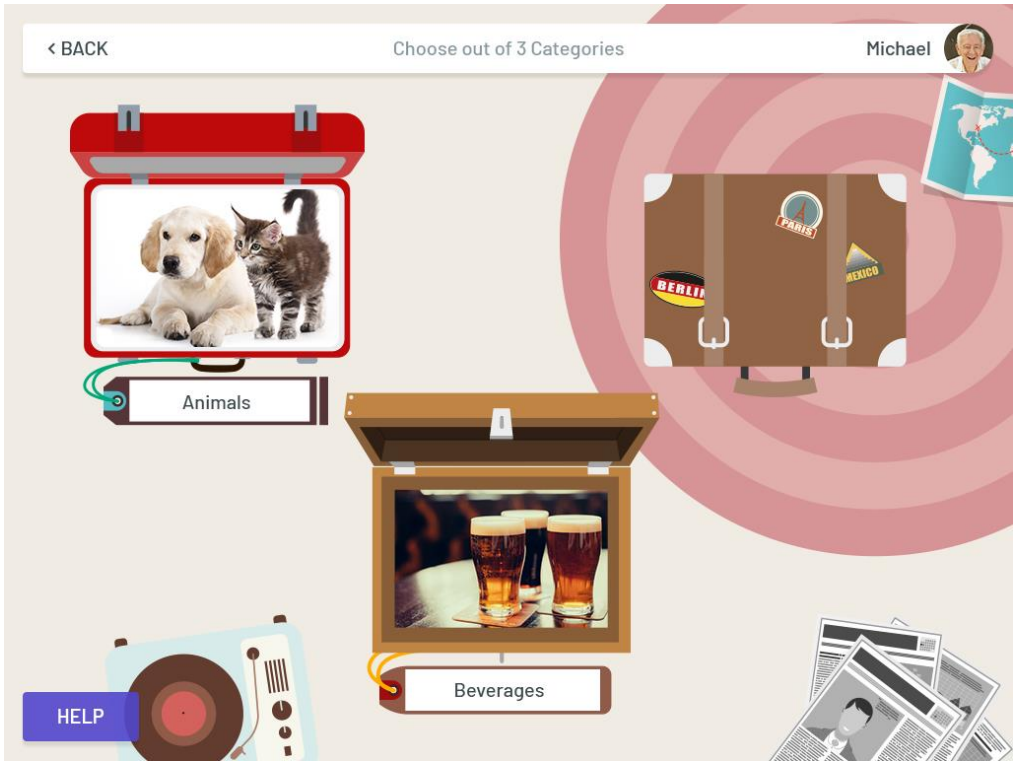


Figure 5 - Choose categories screen/mockup

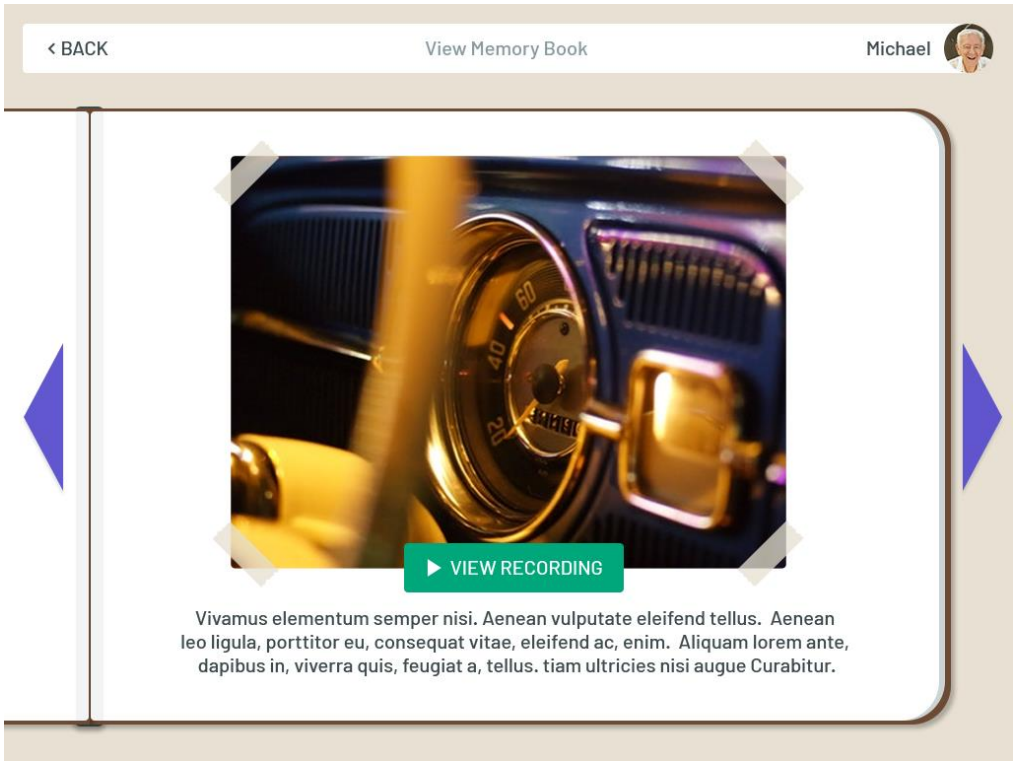


Figure 6 - View memory books/mockup

6 Interactive prototype

Wireframes handle structure, mockups handle visuals and prototypes handle usability. Within the prototyping phase, it was actually possible to interact with the MI-Tale app for the first time. The interactive prototype enabled LFTL to explore the UI, pinpointing which elements work best, and predicting usability problems before they became problems. Sample content (images) was gathered and provided for the prototype by project partners in the Netherlands and Austria. The interactive prototype opened the door for the first user testing. This data revealed usability problems that need work and the preferences of the target users. In short, user testing with the interactive prototype gave LFTL insights whether the design was on the right track, and if not, what changes were required to get there.
LFTL implemented the interactive prototype with its own Adobe Air development framework. The prototype contains a full designed version of the app with all mocked functionalities. It is an Android APK, which can be installed on smartphones and tablets with Android version 5.0 or higher.
The prototype was translated in all pilot site languages (German, Dutch, Greek) and English. The translations were handled through the platform OneSky, where pilot site partners easily could put in their translated strings whenever changes occurred. LFTL implemented the strings in the prototype so the language can be chosen easily on the first page of the mockup.

The APK can be downloaded under: https://goo.gl/4YuzTg

If the reader is not familiar with the process of installing a 3rd party app on Android, please follow this steps:

1. Go to "settings" on your phone and switch to the "general" tab, if needed
2. Tap on the "security" option
3. Tick the checkbox next to the "unknown sources" option
4. Confirm the warning message by tapping "OK"
5. Load the APK on your device either via a cloud app, PC or USB stick
6. Search for the APK on your device
7. Install the APK

The interactive prototype was tested in task 4.1 user testing on prototypes with seniors, formal and informal caregivers as well as experts. The feedback of the testing phase was used to improve the user experience and update the prototype to a final version.

7 Discussions

LFTL concludes this deliverable with the following remarks:

The main activities, single play and group play, are rather simple, laying the focus on the non-distracting presentation of media (images and videos). The quiz mode mainly addresses group sessions and is used best with certain life themes like e.g. celebrities, idols.

More complex activities, inspired by traditional board games, were considered in the early stages of the concept phase, but stripped down to the basic quiz mode. One important reason was the need for simplicity and the prerequisite that one should be able to add one's own content to the app.
Another reason was a discussion among project partners about the right wording. Should we call it a game? Böhm experts indicated that many of the older users, who were raised during the war and in the first years after, may not be too familiar with games. It was a time of work and labour and not for playing around. As a result, gaming might have a negative smack and it is maybe better to call MI-Tale an activity. This is one of the reasons why the framing theme "flea market/attic" was chosen.
These deliberations may not hold true for users who were raised in the second half of the 20th century. They could possibly like a more game-like activity. The implementation of the MI-Tale app should hence foresee the possibility to add more activities in the future to be able to adapt to the needs of its different users. The core functionalities like recording of reactions, log-files, adaptability, memory books are already there and should be combinable with potential, new and more complex activities.

Together with the functional design document and the graphical design specifications, the interactive prototype serves as a model to be followed by EVIC in order to implement the UI of the fully functional MI-Tale app. The team of EVIC is up next with fully implementing the application including the set-up of infrastructure and implementation of the whole backend. The testing of different versions of the MI-Tale app is handled and reported in WP4.