



## D4.3 Pilot evaluation report

<b>ID and title</b>	<b>D4.3 Pilot evaluation report</b>
Description	Giving all the conclusions based on the pilot data, including the technical and design improvements that have been made based on the pilot findings.
Work package	WP4 Field trials
Status	Draft
Type	Report
Confidentiality	PUBLIC
Version	V2.0
Actual date of delivery	
Contractual date of delivery	M30 date according to DOW, updated after extension
Responsible partner	NFE
Reviewer for external release	
<b>Project name</b>	<b>MI-Tale</b>
Project number	70-73500-92-032
Project start date	1 May 2017
Project duration	30 months (including 6 months of extension)



AMBIENT ASSISTED LIVING

JOINT PROGRAMME

AAL-2016



## Document history

Version	Date	Changes	Owner(s)
Vo.1	17-10-2019	First version	Marije Blok, NFE
V1.0	24-10-2019	Details readability	Michael Gstoettenbauer, LFTL
V1.1	29-10-2019	Details pilot CY	Eleni Michailidu, MKP
V2.0		External release	

Use of version numbers (DELETE BEFORE RELEASING):

- vo.1, 0.2, etc.: Status = concept for internal review (to be sent to reviewing partner)
- v1.1 Status = internal release (to be sent to SG for review)
- v1.2, etc. in case of adaptations after SG review
- v2.0 Status = external release (to be released externally)

## Contributors

Partner Acronym	Partner Full Name	Person
NFE	National Foundation for the Elderly	Marije Blok, Nina van der Vaart, Marlies Bakker

## Acronyms

Term	Explanation
TAM	Technology Acceptance Model
UTUAT	Unified Theory of Use and Acceptance of Technology

# Table of Contents

<b>1</b>	<b>Introduction.....</b>	<b>6</b>
1.1	Background.....	6
1.2	Aims.....	6
1.3	Set-up.....	7
1.4	Reading guide.....	9
<b>2</b>	<b>Pilot 1: healthy independent older people .....</b>	<b>10</b>
2.1	The Netherlands .....	10
2.1.1	Introduction .....	10
2.1.2	Procedure.....	10
2.1.3	Sample of participants.....	11
2.1.4	Feedback with regard to the concept .....	13
2.1.5	Feedback on usability of the app .....	13
2.1.6	Feedback on market aspects .....	14
<b>3</b>	<b>Pilot 2: People with dementia in care (non-Böhm setting) .....</b>	<b>15</b>
3.1	the Netherlands .....	15
3.1.1	Introduction .....	15
3.1.2	Procedure.....	15
3.1.3	Sample of participants.....	16
3.1.4	Feedback with regard to the concept .....	16
3.1.5	Feedback on usability.....	17
3.1.6	Feedback on market aspects .....	18
3.2	Austria .....	19
3.2.1	Introduction .....	19
3.2.2	Procedure.....	19
3.2.3	Sample of participants.....	19
3.2.4	Feedback with regard to the concept .....	19
3.2.5	Feedback on usability.....	20
3.2.6	Feedback on market aspects .....	21
3.3	Cyprus.....	21
3.3.1	Introduction .....	21
3.3.2	Procedure.....	22
3.3.3	Sample of participants.....	22

3.3.5	Feedback on the concept.....	22
	Professional caregivers .....	23
3.3.4	Feedback on market aspects .....	25
<b>4</b>	<b>Pilot 3: People with dementia in Böhm care setting .....</b>	<b>27</b>
4.1	The Netherlands .....	27
4.1.1	Introduction .....	27
4.1.2	Procedure.....	27
4.1.3	Sample of participants.....	28
4.1.4	Feedback on the concept .....	28
4.1.5	Feedback on usability .....	29
4.1.6	Feedback on market aspects .....	30
4.2	Austria .....	30
4.2.1	Introduction .....	30
4.2.2	Procedure.....	30
4.2.3	Sample of participants.....	31
4.2.4	Feedback on the concept .....	31
4.2.5	Feedback on usability .....	31
4.2.6	Feedback on market aspects .....	32
<b>5</b>	<b>Conclusions .....</b>	<b>34</b>
<b>6</b>	<b>Annexes .....</b>	<b>35</b>
I	Invitation participants pilot 1 .....	35
II	Informed consent older people .....	36
III	Informed consent care professionals.....	38

## Summary

In this document we report the execution and main results and conclusions of the field trials of the MI-Tale app. We tested the app in three different settings, in order to investigate for which types of users the MI-Tale app has most potential for further development and investment. Overall, in all groups, most participants in this pilot did like the concept behind the app. However, it differs per group whether the concept was really *futureproof*.

In pilot 1 we investigated the potential for *healthy older people*. We learned that for this group the app should mainly be fun as there is not intrinsic need or motivation. Therefore we can conclude that this is a difficult group to focus on first in our exploitation.

In pilot 2 we investigated the potential in the *health care setting*. Professional caregivers in general responded positively on both the concept and the usability, but also indicated that there is some work to do in terms of functionality of the app. In the exploitation we should therefore focus on a good service model around the app – after solving all technical issues that are still left.

In pilot 3 we investigated the potential of the app in the *Böhm setting*. This case was the initial reason for starting the MI-Tale project in the first place, so we expected that this would be an important potential market segment. The pilots confirm this. We therefore conclude that the first step should be an extensive development / update of the app, integrating all recommendations, mainly from the professional caregivers.

# 1 Introduction

## 1.1 Background

After the final rounds in the co-designing phase the prototype was finalized for final testing in the pilot. Before the actual pilots started to run, we did run a short pre-pilot phase (task 4.2) where different versions of the prototype (Dutch, Austrian, Cypriot) were tested in their robustness by staff of the NFE, LFTL and MKP. Results of these tests were presented in deliverable 4.1.

Based on these results, final improvements were made in order to start the larger scale pilot trial. In this field study and evaluation the focus was on the usability, user interaction and business opportunities of the app in different settings and countries and for different types of users. During the period of the field trials, some improvements were made based on the first feedback derived.

## 1.2 Aims

Aim of the field trials was multiple. First we aimed to test the **current status** of the app. We used the pilots to find out in a field context whether all the technical functionalities of the app were working for the different aimed types of users, using the app at different locations and on different devices. The feedback collected in the field trial would allow us to improve the app afterwards to make sure all functionalities would work.

Secondly we aimed to test the **usability of the app** as perceived by different types of users. Even when all functionalities would technically work well, this wouldn't necessarily mean that the app is usable for different types of users. We explored e.g. whether all functionalities were clear, if users intuitively could use the app without too much instruction, whether users would understand the purpose of all functionalities in the app and whether functions were displayed in the right place.

Third aim was to investigate the **service design** in different settings. In what way would the types of users like to use the app? Individually, together, in a groups setting? How does the app fit within programs and projects already offered in a certain setting? Here we also further explored the applicability / added value of the app to use in the psychobiographic care model from Böhm.

Eventually we also used the field trials to explore the **business model** of the app. We asked users if they would pay for using the app and if yes, how much and in what way. We used the trials as well to find out in which setting or context we could expect the best business opportunities. This information was also used to finalize the business plan.

### 1.3 Set-up

As described in the description of work, we conducted three types of pilot, focusing on three types of end-users and settings. The pilots were conducted in the three countries represented in the consortium.

As task 4.2 focused on the definition of the different pilots, we refer to deliverable 4.2 for a complete overview of all the measurements, questionnaires and recruitment strategy. However, to make the current deliverable well readable independently we now and then will repeat the most important information throughout this document.

Here we give a brief overview of the focus of the pilots, later on in this document we will elaborate more in depth on the pilots.

In **Pilot 1** we focused on the target group of healthy older people living independently. This pilot was conducted in the Netherlands only and NFE was responsible for this trial. About 20 participants (age 60-90) from NFE's network were included.

In **Pilot 2** we explored the use of the MI-Tale app in the context of older people with dementia, but specifically those not involved in a Böhm care setting. This pilot was organized in all the partner countries, the Netherlands, Austria and Cyprus.

The **Dutch pilot 2** was organized by NFE in collaboration with *Samenwerkende Zorgboeren Zuid* (SZZ). SZZ is an umbrella of (about 100) care farms in the Netherlands where people with dementia come for therapeutic daily activities. Specifically, those care farms that do not work with the Böhm methodology were invited. In this pilot we involved three care farms. From these farms, three professional caregivers, ten clients with dementia and ten informal caregivers participated in the pilot.

The **Austrian pilot 2** was planned by LFTL in collaboration with the Diakonie, reaching people with dementia and their families through Alzheimer daycare centers. The aim was to involve formal and informal caregivers. Unfortunately the participating client with dementia stopped visiting the daycare center just after the start of the pilot. Alternatively, the MI-Tale app was tested by a private person with dementia in a family setting. Another pilot site was a municipality retirement home with residents diagnosed with dementia and professional caregivers.

The **Cypriot pilot 2** was organized by MKP, in collaboration with Matera, a main day care centre in Cyprus that works with people with dementia. Four people with dementia participated in the pilot, as well as four caregivers. Caregivers were trained for the use of the platform, and individual meetings with end-users and caregivers were organised for further inquiries before and during the pilot.

In **Pilot 3** we investigated the added value of the MI-Tale app to the psychobiographic care model. This pilot was performed at Böhm certified dementia care organisations in the Netherlands and Austria.

The **Dutch pilot 3** was organized by CZG, together with certified dementia-care farms in the Netherlands. In total two caregivers participated in this pilot with 17 clients with dementia.

The **Austrian pilot 3** was conducted by ENPP, involving Böhm care centres from their network in Austria. The platform was tested both in individual and groups sessions to investigate the added value of the game on the traditional Böhm interviewing technique.

<b>Pilot</b>	<b>Country</b>	<b>Types of participants</b>	<b>Number</b>
<b>Pilot 1</b>	The Netherlands	Healthy older people	19
<b>Pilot 2</b>	The Netherlands	Professional caregivers	3
		Clients with dementia	6
		Informal caregivers	6
	Austria	Professional caregivers	8
		Clients with dementia	5
		Informal caregivers	1
	Cyprus	Professional caregivers	2
		Clients in care setting (with/out dementia)	5
		Informal caregivers	2
<b>Pilot 3</b>	The Netherlands	Professional caregivers	3
		Clients with dementia	17
		Informal caregivers	-
	Austria	Professional caregivers	8
		Clients with dementia	4
		Informal caregivers	-
<b>Total number of participants</b>			<b>87</b>

## 1.4 Reading guide

In Chapter 2, 3 and 4 we describe the results of the three types of pilots we conducted. We give an overview of the findings obtained through quantitative surveys as well as through qualitative focus groups and one to one interviews. We elaborate on the usability and usefulness of the app as perceived by the different types of users, their input on the business model and their recommendations for further development both in terms of technical functionalities and service design.

In Chapter 5 we describe how we processed the feedback and recommendations collected in the pilot. Some of these were mentioned multiple times and we used the time available in the project for development and improvement of the most relevant functions of the app.

In Chapter 6 we summarize our findings and formulate recommendations for next steps. These 'to do's' are mainly formulated as 'notes to self', as we are currently as a project team working on the agreements of the post-project phase.

## 2 Pilot 1: healthy independent older people

### 2.1 The Netherlands

#### 2.1.1 Introduction

In pilot 1 we focused on healthy older people living independently. This pilot was conducted in the Netherlands and NFE was responsible for this trial. About 20 participants (age 60-90) from NFE's network were included. We expected the app to be most interesting and attractive for those who like to look back on their life (for instance just entering a new stage in their life, such as retirement or getting grandchildren) and who like to collect, record and share their memories with others. Especially seniors with any interest in/affinity with technology may be interested in the app to be developed.

#### 2.1.2 Procedure

NFE was responsible for the recruitment of participants and did this by contacting older people who more often participate in our research projects by e-mail, we published an announcement at the organizations website as well as through personal (social) media channels and we sent out our call for participation to several associations of independent living older people. After some weeks we started to call the people whom we had sent an e-mail and invited them by telephone.

We recruited participants by inviting them for a bigger research project about reminiscence and technology, as NFE was/is running multiple projects on this topic simultaneously (AAL projects MI-Tale and HiStory; Erasmus+ project Sharing Stories, Sharing Life). Embedding the pilot of the app in the bigger context<sup>1</sup> was useful as it provided us more insights in the perception and attitudes towards the concept of reminiscence, which would help us to maximize our services and projects with regard to the concept of reminiscence, rather than only feedback on the functionality of the specific MI-Tale app. The (translated) invitation can be found in Annex I.

---

<sup>1</sup> In this report we mainly describe the knowledge gained from this overall project that is useful to understand the field trials of the MI-Tale app, such as background and attitude of the participants as well as – of course – the experiences in testing the app. A structured description of the theoretical framework, methodology and analysis will be added in the scientific reporting of the data, which we considered to be outside the scope of this pilot.

When people were willing to participate, we visited them for a first explorative qualitative interview about recalling memories. We asked e.g. to their attitude towards the concept of reminiscence as well as apps and technology; we asked for what reasons they recalled memories; with whom and what triggers and tools played a role.



At the end of this meeting participants received a diary in which they were asked to collect examples of memories they recalled in daily life over a period of three weeks. We asked them to describe the setting, based on a set of questions. The examples served as input for a second interview.

In the second interview we dived deeper in the examples the participants described. The interviews provided us insights in the why, how, with whom and under what conditions older people recall memories and what role technology may play in these processes. This knowledge helped us in this context to investigate for what types of older people ('types of recallers') the MI-Tale app would be interesting and in what type of service design.

At the end of the second interview, the participants received the MI-Tale app. We started with an instruction tour through the app and answered questions and played. The participants received a tutorial booklet with some assignments but in principal they were free in conducting any activity in the app that they would like. Participants were asked to report about their use in a diary (either on paper or online). During the pilot phase the participants were called in order to check if everything was clear and fine. After a month we visited the participants again to ask them about their experiences.

### 2.1.3 Sample of participants

In the bigger project we recruited 21 elderly people living independently at home. Eventually (after introduction) 16 of them participated in the pilot of the MI-Tale app. Participants dropped out (or didn't participate at all) for a diversity of reasons. Some of them didn't feel 'old' or 'in dementia' and didn't feel like watching old pictures was something for them. At the other side of the spectrum, there were people in our target group that felt too old for testing an app. They liked recalling memories but didn't feel like learning how to use an app or new device such as a tablet. Eventually there were drop-outs who didn't like to recall memories because they didn't want to talk about negative memories and experiences from the past, either with us as project leaders or with their social environment. As there were some drop-outs, we involved some additional participants for the pilot part. We didn't use the same age threshold, but included 4 more people between 60 and 75 years old in order to make the sample more diverse in terms of age.

We collected data from 17 participants data by questionnaires and qualitative interviews. Age of the participants ranged from 60-90. The sample of participants who completed the pilot period, consisted of 9 men and 11 women. From these participants, 9 lived alone (without a partner), 11 were married and lived with their spouse. Among the participants were three couples. Both of the partners participated in these cases with their own account. Although they may have talked about the app or even used it together, we collected their input separately and independently.

In terms of preferences for recalling memories, as well as in terms of technology use, we roughly found the following types of participants:

Type of person	Type of recalling memories	ICT use
<b>Memory avoiders</b>	Didn't enjoy recalling memories because of negative experiences in the past. They are afraid that recalling memories comes with too many emotions which they find too overwhelming and not a pleasant experience.	Differs, not one homogenous group.
<b>'I'm not that kind of person yet'.</b>	Didn't recall memories, or at least pretend they didn't. They emphasized all the time that they are not old and in dementia yet. They think recalling memories is something for silly elderly people.	Often able to use new stuff, especially as they consider themselves as young, they would like to emphasize their skills.
<b>Nostalgic people</b>	These older people simply loved recalling the past! Their house was full of photos, souvenirs, objects with stories etc. They enjoyed talking about the past with others – although they thought young ones wouldn't be interested. It gave them melancholic but positive feelings	Not really into new gadgets. Prefer photo albums or objects. On the other hand, they watch television, which also turned out to be an important channel of triggers.
<b>Memory makers</b>	These people live in the current, with a view into the future. Making new memories every day and proactively recording them for the future.	In love with new gadgets and stuff as these could also help them to track the memories. These people love traveling and making pictures there. The smartphone is a good tool for this and they use <i>Albelli</i> to compose their own memory book on the pc.

#### 2.1.4 Feedback with regard to the concept

Most participants in this pilot did like the concept behind the app. Only one participant indicated that she rather would watch a regular photo album, as she found the app too difficult to use. Some other people remarked that they found it sometimes hard to understand the higher purpose / meaning of the app and that it was not clear for them what they were supposed to do. However, most participants in general liked to watch pictures and if the app would provide that in a good way, they think it could be a pleasant experience to use the app. Alone or with family members, either from their own age or from younger generations. The pictures overall reminded them of the past and this triggered stories and gave participants, in general, a positive feeling. However, as the app doesn't necessarily trigger a primary higher need (like it could do - as we will describe later on in this report - for people with dementia or their caregivers), participants in this pilot would mainly use the app for fun purposes. So the app should in the first place be *fun* to use. However, there were still too many things that should be solved before people would really enjoy and have fun using the app.

In terms of types of participants, we found the following. Some participants, mainly the *memory avoiders* and the '*Im not that kind of person yet*' types, didn't like to recall memories at all. Some memory avoiders did like the app, but avoided specific topics, as they didn't want to be triggered about this. An example is the WWII. The memory makers liked the idea, as they liked trying out new stuff. However, they found the pictures often boring or too outdated. The nostalgic people liked the concept the most.

#### 2.1.5 Feedback on usability of the app

When we asked participants what they liked most about the app, all of them answered: watching pictures! When we asked the same question in a more qualitative way, participants mentioned that the pictures are nice and do remind successfully of the past. People also liked to talk about these pictures, for example to explore the contrasts between the past and the present. One participant considered it in a certain way a kind of 'reward' every time to get a photo.

We also asked participants to give a grade to the app. These grades did differ quite a lot. Nine of the respondents give the app a grade below sufficiency level. Some of them really low (0; 10; 14; 19; 20; 20; 40; 50; 50). Four people also remarked that they didn't like anything from the app at all. The others gave higher grades (55; 55; 60; 70; 70; 75; 75), but the highest grade that was given, was still 'only' 75.

As the mean grade of all respondents is 43 (out of 100), it is needless to say participants think the app should be improved before they would use it. Fortunately, the test-users provided us with quite concrete feedback for further development.

When people indicated that they didn't like anything from the app at all, this was most of the time because they didn't exactly know how to use the app or they didn't use the app often enough to say something about this question – although this was often related.

As most of the participants did like watching pictures the most, the perceived lack of number of pictures available in the app was the most frustrating element for them. '*You need more photo's to excite people*', one respondent said. Furthermore, the participants say, the pictures need to trigger different types of persons with different backgrounds. So users should be able to differentiate.

Additionally participants mentioned a number of 'small' particular frustrations that altogether often resulted in a negative review of the app. Examples that were mentioned, included that participants found it sometimes difficult to return to the main menu; that they found it too difficult to find all the different functionalities of the app; the pause function was hardly to find; participants mentioned that it took time to make the app 'their own', as they found it not very intuitive. Very often mentioned, was the log-in functionality. People found it quite frustrating that they needed to log in every time again and the password wasn't saved. In general participants didn't find the app very user-friendly.

In terms of types of participants, we found the following. Although the nostalgic people liked the concept, they often found the technical side of the app too difficult. The memory makers on the other didn't get everything either. Most of them were used to use regular apps and devices, and compared to these, MI-Tale is – in this stage - not very intuitive yet.

#### **2.1.6 Feedback on market aspects**

Although participants did like the concept of the app, only two of them responded positively on the idea of buying the app in the future. These were also the only ones who would recommend the app to others. The others wouldn't use it as long as the technical and usability issues weren't solved. If they would buy it, they would prefer buying the app as a onetime purchase, for a small fee. Nearly all respondents wouldn't be willing to pay any monthly fee. It would be useful to rethink a service model in which the app could be part of another service or app, so people better feel the intention and idea behind the app and they will be more triggered to keep using it.

### 3 Pilot 2: People with dementia in care (non-Böhm setting)

Although looking back on life is a process all elderly people experience, the MI-Tale project has a particular focus on elderly people with dementia, since for these persons memories play an even more important role. The values they have formed in their early adult years often resurface as guiding values in current behaviour. However, the skill of recalling and sharing memories does decrease during the process of dementia. Technology can play a role in compensating these diminishing cognitive skills.

At the same time the app may also help the caregivers – both professional and informal - to get a better understanding of and more respect for how the person in need acts and reacts. Understanding the past of a client will help to provide personal care in the present. The app may help professionals in this process, make it more fun and easier to record and save stories and insights.

In pilot 2 we therefore investigated the role of the MI-Tale app for older people with dementia, in a care setting (non-Böhm), either a nursing home, home-care setting or as day activity. Informal caregivers / family members of the clients were involved as well, in order to investigate whether the app could also be useful in the home setting. Pilot 2 was conducted in the Netherlands, Austria and Cyprus.

#### 3.1 the Netherlands

##### 3.1.1 Introduction

The pilot in the Netherlands was conducted by NFE, in close collaboration with Samenwerkende Zorgboeren Zuid (SZZ), the umbrella organization of care farms in the South of the Netherlands. Among these care farms are centers that work according to the Böhm methodology, but also locations that don't. Most of them, however, still base their work on the principals of personal history and recalling memories of clients with dementia, which could be a trigger to join the pilot.

##### 3.1.2 Procedure

In collaboration with SZZ, NFE made an invitation letter for contact persons of care farms. This set-up was similar to the activities with regard to the user requirements collection, in which we also involved the care farms. We first approached contact persons of the farms that also participated in this earlier stage of the project. After that we approached, some other farms SZZ recommended, as they had the overview about what different farms were focusing at and could estimate for which farm the pilot could be interesting to join. Eventually three care farms were willing to participate, two of them were also involved in the user requirement stage, the other was new to the project. The contact persons of the

farm took care for the recruitment of clients and their informal caregivers. Once a client subscribed for participation, we contacted them to ask for information in order to generate an account and to make an appointment for visiting them. At the start both the clients, informal and professional caregivers got an instruction of how to use the app. After that participants with dementia were supposed to use the app at home, for example with a spouse, or at the farm together with the professional caregiver.

### **3.1.3 Sample of participants**

In this pilot we included 6 elderly people with dementia and their informal caregivers, in most of the cases spouses. Most of the times, an adult child was also involved in the process after the kick-off as using the app was more complicated than the (older) participants expected. Primary participants were clients at 3 different care farms (non-Böhm). Three professional caregivers of the farms participated as well.

Unfortunately, only 2 of the informal caregivers participated in the questionnaire and qualitative feedback phone call at the end of the pilot. The others found both the app, the project as well as the questionnaires / evaluation too complicated. Some of them even asked another family member to act as a contact person as the project gave them too much stress. They postponed the evaluation and promised their feedback would come later: they needed more time. So far, however, we didn't get the input.

### **3.1.4 Feedback with regard to the concept**

#### **Professional caregivers**

The professional caregivers were more positive about the concept behind the app than the clients and their family members. They mentioned that the app could be an addition to their work of reporting about their clients with dementia, especially if these clients are further in the process in decline and talking has become more difficult. However, in this pilot, the caregivers mainly tested with clients with early dementia. The caregivers remarked that they used the app several times when a client felt stress and that that worked out positively – although there was not that much response from the side of the client. Especially when the pictures were familiar (such as idols from the past) or even personal. The caregivers at the farm found the app a good alternative for regular photo albums. You would need a lot of those then and it's less easy to share pictures in books compared to the app.

#### **Clients**

The feedback on behalf of the clients, was given by their family members / informal caregivers. The feedback was in general positive, but we need to remark that the participants who felt most negative

about the project, didn't give their feedback yet as they kept postponing the evaluation because the expectation to give feedback on the app gave them stress.

The informal caregivers who did give their feedback, really believed in the concept behind the app, and said they found the idea very good. The participants had positive experiences, although they didn't play very often. The persons with dementia in general became calm from watching the pictures. However, an important condition here was that they had to recognize the image. A family member of one of the persons with dementia reported that she got very confused by the (unknown) persons on photos. The client was therefore more concerned with who were on the pictures than with retrieving the memories themselves. Choosing personal photos, for example with own family, would feel more familiar and therefore be more fun. One of the informal caregivers did indeed also upload own photos by taking a photo of a photo and this worked out well for the person with dementia.

### **3.1.5 Feedback on usability**

#### **Professional caregivers**

The professional caregivers were in general positive about the app. They mentioned that they did not really need instructions to use the app, they also found it very user-friendly. However, they also mentioned a list of functionality issues that disturbed the usability of the app. Most mentioned frustration was the dysfunctionality of the audio recording. Although in principal it did work at the start of the field trials. However, there were many factors that turned out to be of influence on this, including the type of device, the settings of both the app and the device, the Internet connection. This made it difficult for us as a project team, in the role of help desk, to give instructions remotely when participants called us about this malfunctioning. Another functionality that didn't work perfectly yet, was that of uploading own photo materials. All types of participants mentioned that they preferred own pictures over those from the database, as own photos trigger more emotions and the database didn't provide enough suitable photos yet, such as photos from the own area. Another caregiver said that one of the client found the pictures quite old-fashioned – which was, however, of course the purpose of the app as well. Own photos would therefore work the best. However, the functionality of adding new photos wasn't in a perfect state yet. Next to the fact that the function was hard to find, adding the photos wasn't easy either. One caregiver was frustrated to *'go up and down every time again to add the photos'*. Furthermore people suggest to also include videos in the app. Moreover, this should already have been the case in this stage, but the number of videos was still too small.

Finally, participants were instructed to run the app on a tablet. Participants who didn't have a tablet themselves yet, received one for rent from us. However, some of the caregivers remarked that they

found it more convenient to use a laptop. Probably because most participants were more familiar with the laptop as a device and the tablet is quite new.

### **Clients**

The informal caregivers indicated that a little more support and instruction about the app at the start of the pilot period would have helped them. They didn't find everything easy or logical to use. Additional to the basics of how to use the app, the informal caregivers came up with several functionalities that in their opinion should be improved. A first point of feedback was that the suitcases in the background of the interface were perceived as distracting. Especially for older people with visual decline, it was not always easy to distinguish the background from the 'main screen'. Also related to the clarity of visuals in the app, was the feedback that the photos should be larger over the entire tablet. We received this feedback from several groups of users. A big part from the screen is still empty and not used for showing the picture. This has to do with the shape of the picture, which does not always allow the image to fill the full screen, but it makes it hard for older users to recognize pictures. Next to this, the small size also implies that there is more space used for the distracting background.

#### **3.1.6 Feedback on market aspects**

### **Professional caregivers**

Two out of the three professional caregivers said they would like to use the app in the future. The other one said: '*maybe yes*'. If they would purchase it, they would like to use it for at least once a week. The caregivers therefore would prefer to have it as a one-off purchase, preferably for free, but if it works well for 1-3 euros, under the condition that they would know what they get and that the app will be updated regularly. Another condition would be that users must be able to use the app everywhere. But overall, the caregivers find it very difficult to determine what to spend for such an app or what you would like as a subscription form, as it is all still quite hypothetical. We also asked the caregivers what tools or apps they currently use to recall memories. One mentioned the brain trainer plus, with songs from the 50s, 60s and 70s. According to this respondent, that app works better. Music is always a good trigger, so in order to compete with these types of tools, the tip is to add music.

### **Clients**

Informal caregivers probably won't buy the app. However, if they would do, they would prefer to buy it as a onetime purchase. One participant would be willing to pay 1-3 euros, the other 4-7 euros.

## **3.2 Austria**

### **3.2.1 Introduction**

This pilot was conducted by partner LIFEtool, in close collaboration with the senior residence in Bad Hall and in a private setting at home.

### **3.2.2 Procedure**

Senior Residence Bad Hall received two tablets for the period of 3 months (May until August). At the start of the pilot a 2-hour training session was carried out with some of the professional caregivers, additional caregivers were trained by their colleagues in the course of the pilot. Due to problems with the login and bad internet connections the real testing was delayed for about three weeks. The participants knew about the help desk but only used it once to ask for help with the login (password was incorrect).

### **3.2.3 Sample of participants**

All in all, eight professional caregivers used the MI-Tale app with four clients with dementia (one with mild, two with medium and one with a severe form of dementia). Originally it was planned, that also an informal caregiver (a relative) would be included in the pilot. This informal caregiver was present at the start workshop but apologized and left the workshop, because he could not imagine to use the tablet.

It was also planned to test the app at a daycare center and at home with an informal caregiver. The pilot started in May with a 2-hour training session. All seemed fine, but unfortunately the client, who was intended to use the app with, left the daycare center the day after and the daycare center did not provide another client. Alternatively, the app was used in a private home setting with an elderly woman without diagnosis but phases of disorientation. The app was used in partner settings, often led by the 10-year old nephew.

### **3.2.4 Feedback with regard to the concept**

#### **Professional caregivers**

The professionals caregivers generally liked the app and would like to continue using it. The two tablets were accessible to the caregivers at all times at a central place. Sessions with clients were planned (e.g. for group sessions and dementia training) but also spontaneous, when there was time for partner activities. Especially the younger caregivers had no problems learning to use the system and tablets proved to fit for everyday use. The caregivers stated that they learned new things about their clients using the MI-Tale app.

## Clients

The general feedback from the clients was good, in principal they reacted positively towards the app. One client, who did not like to talk much about herself, told lots of stories when looking at the photos. With one client the app was used with religious content for calming the client in the evening, when she was agitated and this worked quite well.

### 3.2.5 Feedback on usability

#### Professional caregivers

The professional caregivers in this pilot are very satisfied and positive about the usability of the app. They give very high grades when we ask them to respond on a set of statements and indicate that the app is a great tool to ease their work and find new stories. The results can be found in the table below. These high scores are in line with the other information collected in this pilot and an interesting insight in the potential of the use of the app in this setting.

Statement	Average grade on a scale 0 – 10 (N=8)
<i>'Basically, I am satisfied with the simplicity of the MI-Tale app'</i>	9
<i>The MI-Tale app is a great way to talk about memories</i>	9,8
<i>With the help of the MI-Tale app I found stories that I would not have found otherwise.</i>	8,8
<i>The MI-Tale app provides an efficient way to collect stories.</i>	9
<i>I feel comfortable using the MI-Tale app.</i>	9,6
<i>The operation of the app was easy to learn.</i>	8,4
<i>I can easily correct my mistakes in the app</i>	7,8
<i>The information (for example, online help, context help and other information) should be clearly understood</i>	8,4
<i>The information provided helps me effectively to solve the desired tasks.</i>	8,5
<i>The arrangement of the information on the pages is understandable.</i>	8,9
<i>The lay-out of the MI-Tale App are comfortable for older clients.</i>	8,8
<i>The MI-Tale app has all the features and facilities that I expect.</i>	9,3
<i>Basically, I am satisfied with the MI-Tale app.</i>	9,6

Table 1 Average scores professional caregivers AT

The participants did not use all functionalities of the MI-Tale app. They primarily used the single activity; the group activity for dementia trainings in group settings; the puzzle mode; the memory books and the memory book editor. The caregivers also tried to upload own photos during the sessions but did not always succeed.

As we can see, the professionals are very positive. They nevertheless have also some points of feedback. Most frequent and important feedback is that the photos are too small and that categories like nature, seasons and annual circle are missing. There are no functionalities missing at the moment, it would be nice to have music and videos though. It takes some time before a new system has been established and the need for more functionalities arises.

*In this pilot we didn't collect feedback from the clients separately, all feedback was reported by the professional caregivers.*

### **3.2.6 Feedback on market aspects**

#### **Professional caregivers**

As shown in the previous paragraph, the professional caregivers were very positive about the use of the app in their work. It may therefore not be surprising that most of them (5/8) would like to use or buy it in the future. Two of them reported 'maybe yes' on this question, one person answered 'I don't know'. Three of them would use the app daily, the others once a week. They would buy it immediately after launching the app or within a year afterwards. Only three of the participants answered the question how they would prefer to buy it, this would be as a onetime purchase. They would be willing to pay 8-12 euros.

*In this pilot we didn't collect feedback from the clients separately, all feedback was reported by the professional caregivers.*

## **3.3 Cyprus**

### **3.3.1 Introduction**

Partner MKP was responsible for the pilot in Cyprus. As MKP is a business partner and does not work directly with older people themselves, they worked together with a care organization, Materia group. Materia group is a social enterprise in Cyprus aiming to provide a holistic range of support, care, nursing and rehabilitation services to older adults and their families. The organisation operates based on a multi-disciplinary approach, aiming for the provision of high-quality person-centered services. Among the clients are also older adults with cognitive impairments, such as dementia<sup>2</sup>.

---

<sup>2</sup> [www.materia.com.cy](http://www.materia.com.cy)

### 3.3.2 Procedure

Materia Group participated in this study through 2 day care centres: Materia and Thalpori. At both centres one professional caregiver took part, so two in total. Three tablets were provided for the period of 3 months (June – August 2019). Before the pilot started, a training session was carried out with the professional caregivers for each centre individually. Tablets were accessible to all the caregivers at all times.

### 3.3.3 Sample of participants

In total 3 participants (aged 72-88 with dementia) took part in this evaluation. In addition, two participants without cognitive problems participated in this study using 2 of the project's tablets with their family members<sup>3</sup>. In total 2 family members participated in the pilot. It is important to note, that more elderly people expressed their interest initially but withdrawn before the beginning of the pilots. Some of them left the centres and some family members did not provide consent for participation.

### 3.3.4 Feedback on the concept

#### Professional caregivers

In general, both clients and (in)formal caregivers found the app a really good tool for triggering enjoyable discussions. The caregivers also thought the app would be an insightful and interesting tool for their centres. Caregivers were able to learn about the client's personal life. They found this tool as a great way of '*breaking the ice*' and getting to know the patient and especially as a way of connecting with them. They described occasions when the elderly had a bad day with respect to mood and memories and used a story previously described during a session to "wake" them up and users provided a positive feedback as the app generated positive feelings. Caregivers found this tool also very helpful for group activities as this allows them to connect as a group and trigger discussions. They believe that it will even be better used as a group activity than in an individual session. Care professionals liked how the pictures triggered memories; that clients were very excited and happy while storytelling on viewing pictures; they liked the ability to connect personal life stories with images and they liked how the tool gave information about the clients that helped them as caregivers to get to know them.

---

<sup>3</sup> Although these participants didn't have any cognitive impairments, we still consider them as participants of Pilot 2, as they were clients of the care center and therefore used the app in the care setting.

## Clients

Clients also liked the app, although they did not really use it by themselves, as they seemed to be afraid to use it. Instead a caregiver was using it for them. Only one client without cognitive impairments did use it by himself, but only for switching images. Clients did like similar things as the caregivers, but also mentioned additional feedback. First they pointed out the importance of relevant pictures in order to trigger specific memories. The more specific a picture was (e.g. a social event, field work), the more likely emotional memories were triggered – which was the purpose of the app. Pictures covering historic events in Cyprus triggered emotional memories as well. Eventually food images triggered many and positive memories. This is due to the fact that Cypriots connect food with socializing. Next to the feedback on content of pictures, clients reported that they liked the social function of the app. It gave them the ability to share knowledge about the past with others, but also supported them in spending quality time with family members such as grandchildren.

### 3.3.5 Feedback on usability

The participants received a tutorial booklet in order to make sure that they in principal would know about all functionalities of the app, but it was up to them whether they wanted to use all functions or not. Most popular functionality was that of watching the images, 86% of the participants used this function. The quiz mode was tried out by more than half of the participants (51,1%), the same for the story recording functionality (audio). Only 10% of the participants tried out to view a memory book. There was also a couple of functionalities that was not used at all. Participants didn't upload images in a memory book, nor did they edit a memory book – both functions were of course related. Reasons for that were that both participants and caregivers found these functions too difficult; participants were not willing or motivated enough – they did not find it useful to do; caregivers found it difficult to persuade clients to do it when they also spent some time to prep them for the session. Participants mostly used the app from 15 minutes up to an hour, for entertainment.

### Professional caregivers

Professional caregivers mentioned that the use of the app must be assisted by them in order to initiate and help with discussion triggering, as well as with the usage of the app. However, it is hard to say whether this is part of the usability or rather of the concept, as we didn't specifically aim for the client with dementia using the app independently. Furthermore they mentioned several functions to be further developed in order to improve the usability:

First of all the *quiz mode*. The experience of the caregiver was that this function confused the

client and they found it frustrating. Also, it was not helpful for discussion as it could not give a hint of what the image was about. The caregivers recommend to make the image larger, this might be helpful in the quiz mode to recognize them. Moreover, the recommendation to make the pictures larger or allow the user to adapt the size, was also mentioned in the other modes. Sometimes the caregiver needed to explain the image multiple times because the image was too small. There should be an ability to *zoom in* or to switch to bigger tablets or monitors – which is in fact already possible.

Another recommendation with regard to the usability, concerned the *number of pictures* in each category. Most of the categories only contain a small number of pictures and that makes that the user after playing some times, not will be surprised anymore. As developers of the app we were already aware of the need of a bigger amount of pictures, but it also takes a lot of efforts. We filled the pilot version with as many pictures as possible, but the current amount of material was apparently not sufficient. Additionally, caregivers would like to be able to *view the number of images* that each category has and be able to view the progress on viewing the images. This would help them during the category picking. There are cases that a client does not have much time or energy, seems tired. In these cases, they might for example "push" them for a couple of minutes if there are only a couple of images left or instantly stop the game if there are many images.

Furthermore, the '*routing of the app*' was a point of discussion. When a user finishes a category, s/he needs to select another category again to start viewing the images again. One professional would prefer that images would load automatically, others believe it helped them pause the game or start a new conversation. Related to this: most caregivers would like to have the ability to pause a session or even the recording. As there are cases that a user might want to talk to the phone or go to the toilet.

A functionality that seemed not to work properly yet, is the *reaction button*. This is not always visible, even if dragging around the image it seemed that there were cases these buttons did not appear

Eventually, the professional caregivers reported *loading issues*. The app needs an Internet connection and when this was not working well enough, it sometimes suddenly obstructed or disturbed the game, which was very annoying. As consortium we were aware of this issue, but as the possibility to share and save information easily, the web based approach is something we wouldn't prefer to replace by an offline functionality. Nevertheless we will take this in consideration in further development.

Additionally, participants mentioned some other recommendations for improvement:

The *graphics quality* throughout the app should be enhanced to provide a more modern feeling. They clarified, though, that the images resolutions is very important to change.

Each image should already have a *small description* to read. This could help the caregiver to lead the session with the client, when it is not clear for both of them what's on the picture. In the version that was tested, only new pictures that users upload could be supported by some explanatory text.

Most clients would want to know where the images are coming from so it can help them trigger even more specific stories. There were cases that user spent time to realize where this image is from rather than what memory it triggers

Although the app is based on the theory that people with dementia currently 'live' and experience their past and formative years, participants remark they also like to watch *pictures of today*.

Eventually some *Greek translations* need to be fixed, as not everything was already complete.

## **Clients**

Also the clients provided us with feedback with regard to the usability. As most of the feedback from the professionals was collected when working with the clients, much of the feedback was overlapping. However, the clients also mentioned additional issues they faced when using the app:

There were specific images that triggered sad or positive memories. For example, specific categories such as farm, baptism, social events, occupations triggered specific memories. It could be recommended to add pictures well-considered, so the best reactions will be triggered.

Clients reported to be a bit cautious when using the recording functionalities. Another participant was concerned on how the albums and recordings are stored and how they can be used across users. They said that it might be useful to add this description on the app.

Clients were sometimes disappointed by the fact that they viewed the same pictures multiple times, as the collection of photos was still too small.

### **3.3.6 Feedback on market aspects**

#### **Professional caregivers**

In general, the professionals believe that this is a very useful tool for their centres and as an individual tool. They were keen to persuade their manager as a needed tool to purchase. They mainly though described that they would be more interested to use it as a group activity. They rate the app with 7.8/10 and its usage with 6.2/10. From these grades we can conclude that there definitely is potential for exploiting the app among this target group. However, the usage of it should be improved.

The professionals indicate they would use the app once a week for around 40 minutes. A period which an activity usually takes place in regular settings. The game is good, especially as a group activity of 2-3 users. It is good as a triggering tool. They would buy after a few months after the launch, when they would see some reviews about it, others even though they responded that they will buy after a year. These professionals would like either a trial offer OR the ability to purchase monthly and then a yearly or once off payment.

Users prefer it as an application and especially adaptable to big screens such as a big tablet or TV so they can mirror it on a big screen and use it as a group activity. This set up will also help the users since they have visual impairments. Game is most willing to use as group activity rather than individual. Therefore, they would like to have the respective license. But they would like to have the ability for individual recording and album making

## **4 Pilot 3: People with dementia in Böhm care setting**

As the app was based on the methodical approach of Professor Erwin Böhm, we expected Böhm-certified organisations to benefit most from it. These specific organisations requested for this development in the first place. Therefore pilot 3 specifically focused on elderly people with dementia in the Böhm setting and their caregivers. These professional caregivers included the specific group of professionals who are trained through the ENPP training-program for the Böhm care method and work in officially ENPP-certified organisations like day-care centres (e.g. care farms) and nursing homes.

### **4.1 The Netherlands**

#### **4.1.1 Introduction**

In pilot 3 we focused on older people with dementia in a nursing home or day-care setting (e.g. care farms) certified to use the psychobiographic method according to Böhm. CZG was responsible for the Dutch pilot, in which two care-farms located in Drunen and Tholen participated. About 17 clients of these care farms were included. In Drunen, a total of 44 sessions with 12 clients took place, of which 11 group sessions. In Tholen, 5 sessions with 5 clients took place, but no group sessions. The sessions were seen as a way to gather biographical information about clients, but also as a moment of relaxation and fun for the client at the same time.

#### **4.1.2 Procedure**

Participants were recruited among the network of care providers in the Netherlands working with the Böhm methodology. Partner CZG knows this network from the inside out, as they play an important role in distributing the methodology throughout the country. Two care providers were selected and invited that were located in different areas of the country, worked with different types of older people in different setting and with different amount of experience with working with the Böhm method. The professionals of both locations got an instruction as well as all the materials needed and were asked to test the prototype with their clients over a period of two months. The group of participants consisted of professional caregivers, individual clients as well as various (anonymous) visitors in group sessions. Participants were asked to track their activities during the pilot in a diary and to fill out some questionnaires afterwards. The pilots were finalized with qualitative panel discussions in order to exchange opinions and collect additional feedback.

### 4.1.3 Sample of participants

As described, the pilot was conducted at two care settings, in two different areas of the Netherlands, namely in Drunen (care farm for day care) and in Tholen (nursing and residence care) Three professional caregivers were included, who tested the app with several of their clients visiting the farm. In the individual test sessions 17 clients were involved, 12 in Drunen, 5 in Tholen. Furthermore, a number of anonymous visitors participated in the groups sessions. In total, in Drunen, one professional account was used for 40 sessions with 10 clients and 9 group sessions. The other account was used for 4 individual sessions with 2 clients and no group sessions. At the start, both caregivers in Drunen used their own account, but when it became clear that a client's account could only be linked to one professional, only one professional account was used by both of the caregivers. This explains the big differences in use of both accounts. The caregiver in Tholen did 5 sessions with a total number of 5 clients and no group sessions. Most sessions lasted 30 minutes to one hour (14 times), then 15-30 minutes (11 times) and especially at the end of the pilot sessions were sometimes shorter than 15 minutes (5 times). Only 2 times lasted a session longer than an hour.

### 4.1.4 Feedback on the concept

#### Professional caregivers

In general, the caregivers were cautiously positive about the app. They see potential in the idea behind the app. The employees of the care-farm in Drunen said they would definitely recommend the MI-Tale app to other care organizations that work with elderly people with memory problems. Employees thought the app was a nice and creative addition to their work as it enables them to find out what is important to their clients in an informal way. The sessions were always seen as a way to gather biographical information but also as a pleasure or relaxation for the client at the same time.

On the other hand, however, the app does require a lot of attention which cannot always be provided by the supervisor of the group. To use the app with a client, more assistance from for example a volunteer or trainee is needed. In Tholen, the common feedback from the five sessions with clients was that the photos are too small for users, making it hard to use the app. Unfortunately, in both places technical issues made the app less attractive and efficient in practice as they had hoped for.

#### Clients

A number of clients, mostly from the care-farm in Drunen, found the app very nice to use. They found the pictures recognizable and they stimulated them to tell more, yielding new biographical information about these clients. The group setting here was also very stimulating for the elderly to share stories about the past. On the contrary, the residents in the nursing home, in Tholen, were less vital and that

apparently is also noticeable in a worse eye-sight. The clients had to make a great effort to see the pictures and that diminished the fun experience of using the app. Clients lost their interest and gave up because it did not motivate them anymore. In addition, the photos in the app often recalled too little recognition among the residents. The photos were all from regions other than Zeeland or Tholen and gave little reaction from the participants. It is not entirely clear whether the format or the recognizability of the picture-scene was decisive in the dropping out of participants.

#### **4.1.5 Feedback on usability**

##### **Professional caregivers**

The professional caregivers mentioned different problems with the usability of the app, making it, despite the positive feedback on the concept, unattractive to keep using the app. The issues are partly in the app itself: logging in and out was found to be difficult, clients could only be connected to one caregiver and the size of the pictures was too small. Besides, personal pictures would do better, but the technique was found to be difficult in terms of uploading their own material. Moreover, this is relatively cumbersome if you have to do that over for every new client again. The app should support an easy and quick way to add personal materials.

Furthermore, it was sometimes hard to estimate the length of a working session, as some topics come with lots of pictures and others with less. According to the caregivers, displaying the number of pictures that are in one suitcase would enable them to plan time they need for a 'session'.

Besides, caregivers from the care-farm sometimes ran into problems with the app not working when there is no or weak Wi-Fi connection. This was found quite tricky as it meant that they could not sit around with clients anywhere or that the app was working very slow.

##### **Clients**

The feedback of the clients were given on behalf of the professional caregivers. Most positive feedback came from the daycare center in Drunen. It seems that the application is working well in this setting as the clients were in the beginning stage of dementia and could easily recognize the pictures. It made them feel nostalgic. Besides, the app was used in a group setting here which stimulated the clients to collect memories together. A client who was hardly able to talk could communicate using the pictures. Besides, one client could even tell we had played before. Most pictures were recognizable for this group, but sometimes when clients look at a picture that doesn't trigger anything, they can get a little confused looking for something they can recognise.

In the nursing home in Tholen, the clients were in a more progressed stage of dementia, making the recollection of memories and recognition of circumstances more difficult. For them, pictures should

come from their own personal past, general pictures didn't trigger sufficiently. Besides, they had trouble with their vision, which made it hard to recognize details on pictures. Altogether this raised doubts about the usability of the app in this setting. It would be recommended to try on a larger screen, such as a TV and test both general nostalgic and personal photos to get a better review on this issue.

Another issue mentioned related to usability was when clients wanted to say something about a previous photo, it was not possible to go backwards in the app. The puzzle mode was fun for some users, but for others it made them loose interest, especially when it felt like a competition. Besides, the export function to export photobooks generated to another file type seemed not finished yet.

#### **4.1.6 Feedback on market aspects**

Only the (professional) caregivers provided us input with regard to the market aspects. Any claims on business case by the feedback from this experience is a wild guess at best. People see the potential of the idea, but nobody would buy or pay for the app as it is. All three professional caregivers graded the MI-Tale app to be important to communicate and interact with clients (72;70;74). Besides, all three caregivers said 'maybe yes' to using the MI-Tale app in the future. However, only one out of three caregivers would recommend the app to another colleague. Two caregivers were willing to spend 8-12 euros on the app, the other caregiver would spend 4-7 euros. One caregiver would pay for the app by monthly subscription, the other two through one time purchase.

## **4.2 Austria**

### **4.2.1 Introduction**

The pilot in Austria was conducted in seniors' home Bischofshofen, a nursing residence in Austria, based on the principals of Böhm. ENPP was responsible for this pilot. On the one hand this partner is the founder / owner of the methodology as well. On the other hand they know the care sector in Austria from the inside out, as they play a key role in the distribution of the methodology throughout the German speaking countries. The collaboration between ENPP and the care enters is very close, their activities are often intertwined and the care centres often serve like a '*living lab*'.

### **4.2.2 Procedure**

The professionals of the seniors home who would participate were invited for a kick-off meeting for an instruction. They received all the materials needed and were asked to test the prototype with their clients over a period of two months. The group of participants consisted of professional caregivers and

individual clients. Participants were asked to track their activities during the pilot in a diary and to fill out some questionnaires afterwards. The pilot was finalized with qualitative discussion with the professional caregivers in order to exchange opinions and collect additional feedback.

#### **4.2.3 Sample of participants**

In this pilot 8 professional caregivers were involved. They tested the app with four clients with dementia in individual sessions and with several groups of clients in group activities.

#### **4.2.4 Feedback on the concept**

##### **Professional caregivers**

The caregivers who worked professionally with the MI-Tale app reported positive feedback about the app. They liked for example, the possibility of quiz mode in both individual and group sessions.

Especially the idea, at the basis of the app, as a central theme of the MI-Tale app, was praised. The preference of the timing of a session depended on the day and user's mood. Clients were more willing when they thought that this is a scheduled activity. They made them believe as of an event

The game was an excellent tool for connecting older adults with grandchildren. When played with grandchildren, the clients found things to discussed and grandchild was excited from what learnt from grandparents

##### **Clients**

The clients in general liked the concept. They like the idea of testing out an innovative concept and the idea behind it, namely the possibility of watching pictures and adding own personal pictures. They are in general positive about the idea of having so many pictures in an app.

#### **4.2.5 Feedback on usability**

##### **Professional caregivers**

This field trial shows that, although the concept was considered positive, the interest of the caregivers in using the app was not sufficient. Due to technical issues, most participants in this pilot were not convinced of the added value. Some of the participants reported the app was too complicated.

Because of these technical difficulties it was not a positive experience in communicating with the clients about their personal history. The use of the app by the professional caregivers in this setting showed clear once again that the desired requirements did not meet the expectations of the pilot participants.

Criticism was aimed at the size of the photos and the difficulty of uploading own material.

A focus group session was set up between the MI-Tale researchers and caregivers. The discussion aimed to understand the overall use of the app, problems occurred, what users liked and overall perception with respect to marketing questions.

The professional caregivers found *uploading photos* the most difficult function to perform. They tried it with only one client who agreed but were both confused how to use it and due to time restrictions, they were not keen to try it again. They explained that client had a restricted period willing to participate which made them unwilling to even try to persuade to use this. They were also not interested in uploading personal photos. They preferred their *own physical personal album*. The game would not replace that. Nevertheless, professional caregivers find the app, compared to a physical album, more interesting and interactive, more fun and interesting, especially because it provides the ability to record their stories. However, the physical album provides the clients the ability to use own pictures. Although they could also use the app for this, they were not eager to try out this function, probably due to different types of concerns (technical, usability, privacy).

*Viewing and responding to images* was the most preferred and easiest task to initiate and execute. It was the most enjoyable part as well.

Caregivers didn't manage to use *the recording* function. Either an error occurred or user was not really interested in listening to themselves.

## **Clients**

Although a lot less extensively, the clients also provided some feedback with regard to the usability. As described above, the clients liked the idea behind the app. Nevertheless they gave very low grades to the technical functionalities. They found the tablet difficult to operate, found the app in general difficult and although they liked the possibility of uploading own pictures, they found the function too difficult, which was often frustrating. On the other hand, they found the number of pictures available in the app not sufficient.

### **4.2.6 Feedback on market aspects**

#### **Professional caregivers**

Professional caregivers indicate in the focus group session that if they would buy the app, they would use it once per week. They found the game good, especially as a group activity of 2-3 users. It is good as a triggering tool. However, when we asked them similar questions in the questionnaire, almost none of them would buy it, or '*probably not*'. If they should say something about this, they would prefer

purchase as a onetime purchase, paying 4-7 euro for it. They answer that they would use it less than once a month.

### **Clients**

The questionnaires among clients show similar results. Although the clients liked the idea and concept behind the app, the technical issues were too much present and avoided the clients from a positive response on the question whether they would buy it or not. If they should say something about this, they would prefer purchase as a onetime purchase, paying 1-3 euro for it.

## 5 Conclusions

In this pilot we aimed to investigate for which types of users the MI-Tale app has most potential for further development and investment. Overall, in all groups, most participants in this pilot did like the concept behind the app. However, it differs per group whether the concept was really *futureproof*

In pilot 1 we investigated the potential for *healthy older people*. We learned that for this group the app should mainly be fun as there is not intrinsic need or motivation. We can conclude, however, that the app in this stage doesn't have the *fun factor* yet. For nostalgic people, who love recalling memories, the app was often too complicated to use. For participants with more digital skills, the pictures were often too boring. Therefore we can conclude that this is a difficult group to focus on first in our exploitation.

In pilot 2 we investigated the potential in the *health care setting*. Professional caregivers in general responded positively on both the concept and the usability, but also indicated that there is some work to do in terms of functionality of the app. The technical recommendations will be processed in order to satisfy this group. Furthermore a proper instruction or training is key! In the Netherlands the participants were often confused, which decreased their positive experience. In the exploitation we should therefore focus on a good service model around the app – after solving all technical issues that are still left.

In pilot 3 we investigated the potential of the app in the *Böhm setting*. This case was the initial reason for starting the MI-Tale project in the first place, so we expected that this would be an important potential market segment. We can conclude after conducting this pilot, that this is indeed the case. Both the participants, mainly the professional caregivers, in Austria and the Netherlands were very positive about the concept as well as the application in their work. However, especially in Austria, the caregivers were not yet satisfied with the current status of the app. We therefore conclude that the first step should be an extensive development / update of the app, integrating all recommendations, mainly from the professional caregivers. After that we will develop and refine a suitable training- and service model to make sure all prospect users know how to use it. Eventually we will work on exploiting the app among the care centers, as these settings are most feasible.

## 6 Annexes

### I Invitation participants pilot 1

#### Recall memories and contribute to our research



Many people recall memories as they get older. That is very valuable; it helps you not to forget the beautiful stories; it can help you understand your life better and it can contribute to processing past experiences. Sharing memories with others also gives a sense of belongingness. Yet little is known about how people recall memories. The National Foundation for the Elderly and VU University Amsterdam are studying the way in which people recall memories as they get older. We are interested in *why* and how they do that. Are you 75+, living independently and available this spring? We invite you to participate.

#### What does your participation look like?

- We will visit you at the end of March / beginning of April for an introduction and we will talk to you about your motivations to reminisce. This visit takes approximately one hour.
- You will receive a diary for three weeks to keep track of when and how you recall memories.
- After three weeks we will talk further with you about the ways in which you recall memories.
- Your participation is voluntary. Everything you tell is confidential. The researcher ensures that no one else can recognize that you have participated in the study or what information comes from you..

#### Are you enthusiastic?

If you become enthusiastic about retrieving reminders during the investigation, we would like to invite you to participate for another month. You will receive the new one on our second visit MI-Tale app to try. We will come by again to ask you about your experiences.

#### De MI-Tale app

The MI-Tale app helps you retrieve memories! The app contains photos and video material from the 40s and 50s and also offers the possibility to add and share own images. For example with siblings, with whom you grew up or grandchildren who like to talk about the past but find it difficult to ask the right questions.

#### Does this photo immediately remind you of the past?

Then the app might be something for you! We are looking for 75+ people who want to try out the app for at least a month and help us to develop it further.



*Over the past years, the Elderly Fund has developed the app together with partners and is curious about your opinion as a user. Your participation is entirely without obligation and we therefore have no commercial interests.*

#### Why would you participate?

- You contribute to scientific research that is applied directly in practice.
- You get the chance to be one of the first to use the MI-Tale app.
- If you participate in both parts, you will receive a surprise package with, among other things, a VVV voucher.

Are you interested? That's great! Please contact the project leader, to make further arrangements. You can do this by e-mail or by telephone. Feel free to do that if you have any questions.

## II Informed consent older people

Dear participant,

Thank you for participating in this project. Before we get started, we kindly ask you to sign this informed consent. By doing this, you declare that you voluntarily participate and are aware of what your data are used for. This document provides more information about the project in general and your participation more specifically. The last part contains the actual declaration.

### The project

Many people recall memories as they get older. That is very valuable. Yet little is known about exactly how people recall memories. The National Foundation for the Elderly and the VU University Amsterdam are researching the way in which people reminisce when they get older. This is done within the European MI-Tale and HiStory projects.

### What does your participation look like?

In a first visit we get acquainted and discuss what exactly *recalling memories* means to you; You will receive a diary for three weeks to give examples of how to retrieve reminders; After three weeks we will continue to discuss the collected examples with you.

### Testing the MI-Tale app

In the next part of the project we ask you to test the MI-Tale app. You will receive additional information specifically to that component. We ask you to indicate again that you agree with your participation. The app has been developed to help elderly people with their social environment to retrieve and record their personal memories and thus share their lives with people who are important to them.

### Your rights as a participant

- You have the right to stop participating at any time. We will ask you for a reason, because we can learn from it, but you are not obliged to give it;
- The diary that we ask you to complete remains with you. It serves as support for the second interview we have, but you do not have to hand it in;
- You decide what you do or don't share in a conversation. You certainly do not have to share sensitive memories, we are mainly interested in the stories around the memory;

- Your data will be anonymized and processed confidentially; Your answers will not be traced back to you as a person afterwards;
- You can ask your questions at any time, we will always do our best to answer them;
- The conversations are recorded (audio) and worked out. The data is stored securely and stored separately from this statement (which contains your name);

Protecting your data is important for us

The National Foundation for the Elderly and the VU University Amsterdam find it very important to handle your personal information with care. We guarantee that we will treat your information anonymously and confidentially. The results are only presented in processed form and will not be traceable to you as a person. The material will only be used within the MI-Tale project, HiStory and (scientific) publications as a result from this.

#### **Declaration by the participant**

I hereby declare that I voluntarily participate in this project and that I am well informed about its goals and consequences. With my signature I give permission for the use of the answers I give during the two conversations. All questions I had were answered satisfactorily. I am aware that I can stop participating at any time without giving a reason.

Place and date:

Name:

Signature:

#### **Declaration from the project leader**

I hereby declare that I have fully informed the participant about (his / her) participation in the project. If new information becomes known during the project that may influence the consent of the participant, I will always inform him or her of this.

Place and date:

Name:

Signature:



### III Informed consent care professionals

Dear participant,

Thank you for participating. Before we get started, we kindly ask you to sign this informed consent. This indicates that you voluntarily participate and that you are well informed about what we do with the information we collect. This document contains more information about the project in general and your participation in particular. The last part contains the actual declaration.

#### **The development of the MI-Tale app**

Within the MI-Tale project we have developed an interactive digital app that helps elderly people (65+) to retrieve memories together with others. The app contains photo and video material to stimulate the memory and also has a function to add and share your own photos. Before we started developing the app, we conducted interviews with stakeholders. A first complete version is now available and we would like to test it.

#### **The pilot**

One of the settings where we want to test the app is the care setting for the elderly with dementia. Retrieving reminders together with a client offers you insight into what concerns him / her. This helps in providing personal care. In this pilot we investigate what you, as a healthcare provider, think of the MI-Tale app. Your client simultaneously tests the app in the private setting.

#### **What does your participation entail?**

In the coming period (approx. 2 months) you can use the app as much as you want.

You can stop participating at any time. We will always ask you why, because we can learn from this, but you don't have to answer. When you stop, we will discuss with you whether we may use the information that you have provided so far.

You will receive an instruction booklet with information about it at the start of the pilot project and the various functions of the app. You can always contact us if you run into something, but we challenge you to first investigate.

The booklet also contains a few small assignments to familiarize you with the app. We encourage you to practice these assignments before you start. We also recommend that you organize a group session, we are happy to support you with this!

We ask you to write a few short notes every time you use the app make, preferably online, via the link you have received for this.

After the pilot, we will ask you about your experiences in a questionnaire. We also invite you to share your ideas with us in a focus group with other healthcare providers.

We use the results of the pilot to further develop the app and as input for (scientific) publicity around the project. Hereby we will always treat your data anonymously and confidentially.

You have the right to delete the information that you share in the app at any time.

Your participation is anonymous. The input that you provide is processed anonymously. Only the one who meets you for introduction and completion knows that you are participating. We ask you to fill in a profile, but we cannot view it. We only use your e-mail address to create an account.



## TEMPLATE SOCIALCARE DELIVERABLE

You participate in a test. This means that the app is not yet officially in the air. After the pilot, all data collected during the pilot will be deleted. If you want to save the content of the app, we recommend that you save and export everything before the end of the pilot. You should always consult this with the client about who the information is about.

If you do not have a tablet yourself, you will get one from us on loan. We ask you this to be returned to us at the end of the pilot period.

**Declaration by the participant**

I hereby declare that I volunteer to participate in this project and that I am well informed about the goals and consequences. With my signature I give permission for the use of the answers I give in the discussions with the pilot leader. All questions I had were answered satisfactorily. I am aware that I can stop participating at any time without giving a reason.

Place and date:

Name:

Signature:

Participant code:

**Declaration from the pilot leader**

I hereby declare that I have fully informed the participant about participation in the project. If new information becomes known during the project that may influence the consent of the participant, I will always inform the participant about this.

Place and date:

Name:

Signature: