DELIVERABLE 1.2B
USE CASE SCENARIOS SPECIFICATION

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List of Abbreviations

ABBREVIATION	FULL	DESCRIPTION
WP	Work Package	Category of tasks which details the description of work
IoT	Internet of things	inter-networking of devices which enable the collection and exchange data.

1 Introduction

The Vizier project has the ambition to develop a tool with connected devices and online services which will improve the management of daily activities and autonomy of the elderly. To ensure the achievement of this purpose, user needs and requirements have been assessed through personal interviews and questionnaires in various locations (different countries, and different settings), in which the seniors level of autonomy was varied. The detailed results of these assessments have been reported in the Deliverable 1.1: User needs and functional requirements.

Five key learnings about the elderly and their attitudes towards technology and the adoption of new technologies have been found and emphasized at this stage of the project:

1. **Technology is hard to figure out**: Negative evaluations about technology have been received by the elderly. For many of them, they felt that technology was unnecessary in their daily life. However, from our engagement limited understanding of technology and little experience seems to be the main reason for this negative perspective.

2. **Prevalent need to feel autonomous:** People expect the Vizier tool to be an "external aid", a device enhancing their possibilities, and sporadically acting as a reminder, but not doing things instead of them. As the seniors we interviewed want to feel autonomous as long as possible, and not to be categorized as old people, it will be important to develop a tool without an overtly "designed/meant for elderly" label.

3. **Different levels of experience with technology**: the seniors' experience with technology (computers, smartphones, apps) can be quite varied depending on their professional and private background related to the use of multimedia. Furthermore, if the technology is non-adapted for them, they will clearly not engage in its use, or not pursue it. The personalization possibilities of the tool will thus turn out to be a very important element.

4. **The system needs a simple and easy-to-use interface:** The interface of the system must have a limited amount of alternative buttons, click through screens or instructions showing at the same time. Furthermore the buttons as well as the instructions to the system will have to be simplistic, straightforward and succinct. This point is important because it avoids an overload of the seniors' normal short term memory limitation while they interact with the system, leading to less frustration and an overall more pleasant user experience.

5. **The strengthening of social interaction and activities**: A sense of belonging is very important to all of us, and this is particularly true for seniors, most of whom, enjoy doing group activities. The key driver of their health and wellbeing thus has to take in account this social need.

These five key learnings will allow the establishment of the base platform. For the selection of devices and online services for Vizier, our user needs study has indicated that the following features were the most interesting:

- the improvement of the memory, through the learning of strategies, and with appointment reminders
- recording memories on a computer tool
- internet search
- information about local activities

Interestingly, there was little interest in other suggested features of a more technically advances nature (e.g. robotic vacuum cleaner, management of the lights, Facebook, relaxation exercises, personal alarm). However, without a clear demonstrator to pint to at this early stage, it was difficult to describe to end users. Following the

development of the pre-trial demonstrator further research may be carried out with a more tangible system to showcase. For example paper models will be shown in focus groups, and in the pre-trial the users will face actually working equipment. Perhaps this will provide more positive reactions and responses from end users toward increasingly more advance smart home technologies.

To promote optimal acceptance, as well as natural interactions with the social companion, we organized interviews to have a detailed description of seniors' daily living habits. These interviews also provided an insight into the variety in people's habits and activities according to (1) their level of dependence, (2) their familiarity with the use of computers or other multimedia devices , and (3) their home status (living alone or with someone).

Based upon these dimensions, and contrasted behaviours or situations, we have created fictional personas. These will allow us to develop ***Use Case Scenarios***, which reflect a few prototypical profiles of seniors' daily lives, and the way they react towards their activities.

The Use Case Scenarios will then be used to model the type of interactions with the social companion, and identify how the Vizier system can support daily functioning and/or remove some daily frustrations such as negative thoughts or feelings of powerlessness or loneliness.

2 Methodology

2.1 Persona creation

2.1.1 What is a persona?

Personas are "hypothetical archetypes" of actual users. They are *not* real people, but they represent real people during the design process. A persona is a fictional characterization of a user.

The purpose of personas is to make the users seem more real, to help designers keep realistic ideas of users throughout the design process. Personas have proper names and are represented with pictures. Designers and evaluators refer to personas when considering design specifics; for example, "Would Hanna know to click on that button to add a new contact?" Personas put a name, face, and characteristics on users to keep the users in the forefront of design decisions.

A persona includes specific characteristics, demographics, and experience levels from a user profile, for example, which apps they use. Additional information in personas are personal details such as behaviours, attitudes, motivations, and goals.

2.1.2 Vizier personas

For the user needs and requirements gathering (D1.1*), the Vizier consortium conducted a survey among 71 possible end users. 23 of them were interviewed.

The interviewees were the main source of inspiration for our personas. Care organizations Myhomecare, VIVA and Familiehulp each created 3-4 personas, based on the users in Ireland, Switzerland and Belgium, respectively.

On the “Use Case Scenario” canvas, created by Verhaert, you will find the description of the persona in section “1” (Figure 1).

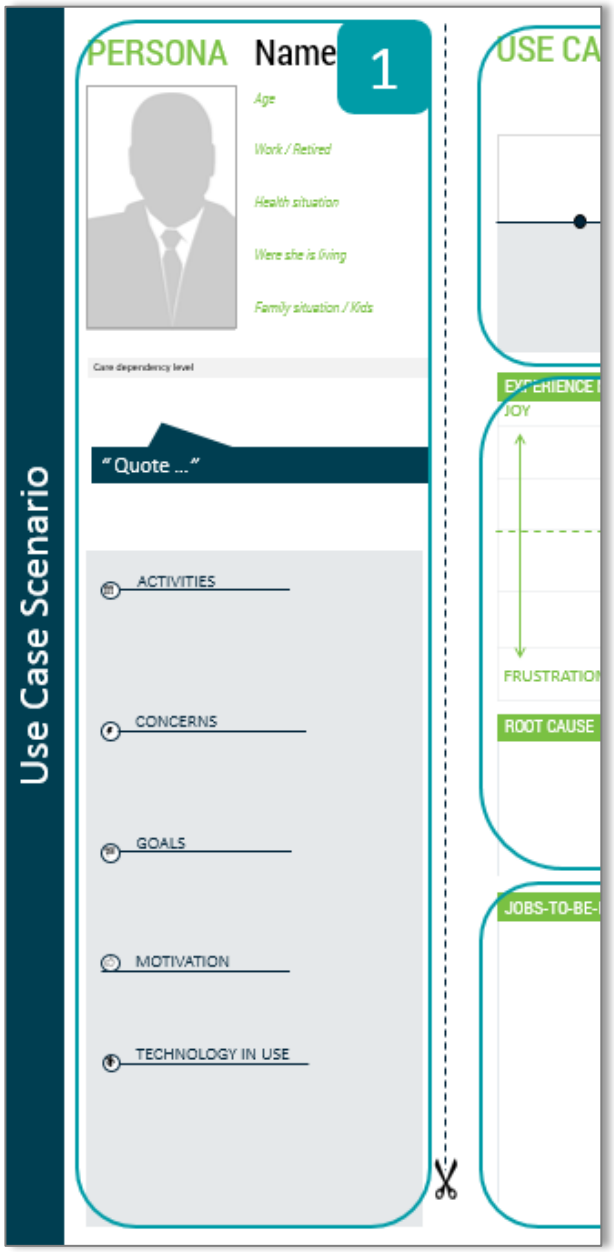


FIGURE 1 DESCRIPTION OF PERSONA

2.2 A day in the life of

To develop a use case scenario for a persona, we need to get to know him or her better. We start by describing a ‘normal’ day in their life in section “2” of the canvas. At what time do they get up? What are the first activities they do? When does the care giver come by? Etc. Up to the moment they go to bed. Time and description are noted in the grey text boxes below the timeline in Figure 2

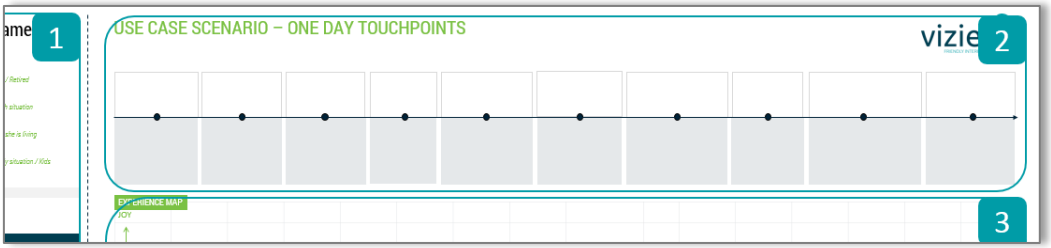


FIGURE 2 USE CASE SCENARIO – ONE DAY TOUCHPOINTS

2.3 Experience map

Area "3" is designed to reveal the needs of the persona. Therefore we assess each activity on the experience scale. If an activity brings joy, it's mapped above the 'neutral' line (green dotted, Figure 3). The higher above the line it's mapped, the more joyful this activity is experienced (relative to the other). Activities that are frustrating are mapped below the 'neutral' line and the more frustrating an activity, the lower on the map it's marked. Below the experience map, the root cause is explained, why the activity is experienced as indicated (Figure 3).

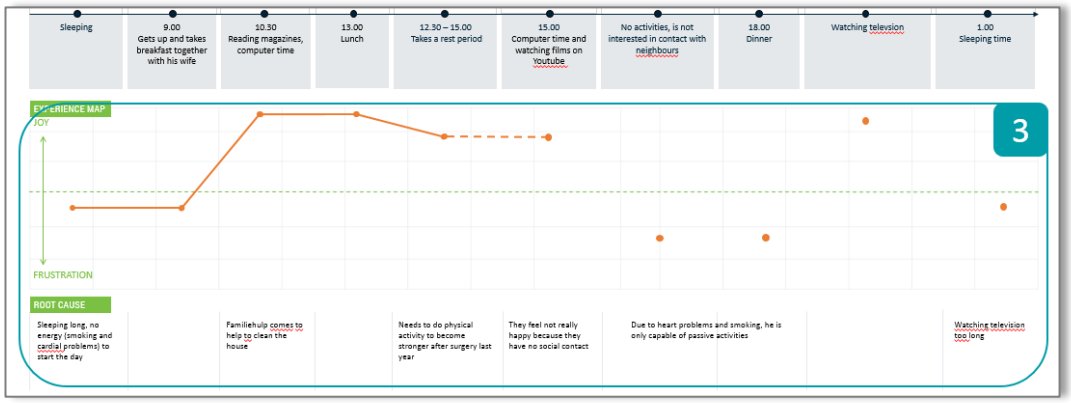


FIGURE 3 TO FINISH THE DOTS ON THE MAP ARE CONNECTED AND FORM AN EXPERIENCE GRAPH

Areas of frustration may be opportunities for Vizier to improve the experience of that activity. Other activities could score higher on the experience map when Vizier supports the persona.

2.4 Jobs-to-be-done by Vizier

The last section ("4") of the "Use Case Scenario" canvas is the part where we imagine what Vizier could do for this persona to make his / her life more pleasant. We describe touchpoints of the system with the user and the function that can be fulfilled at that point (Figure 4).

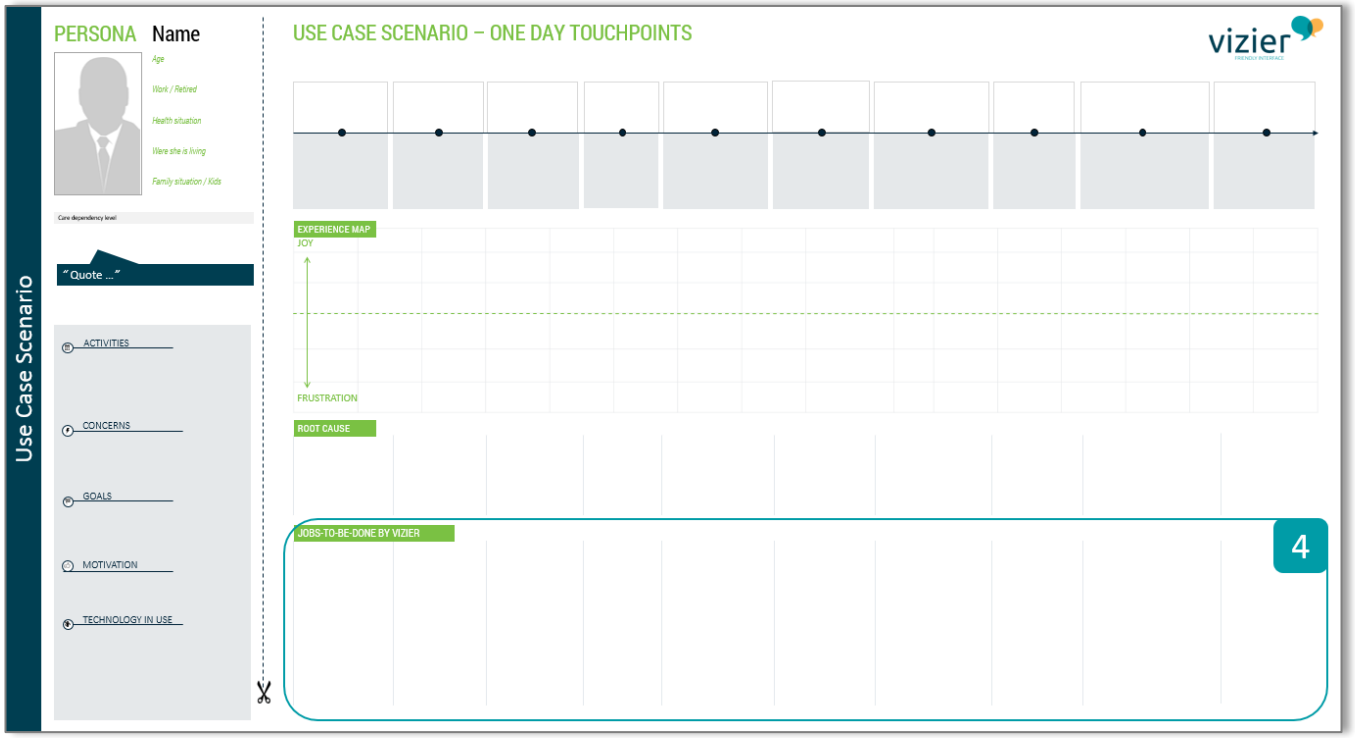
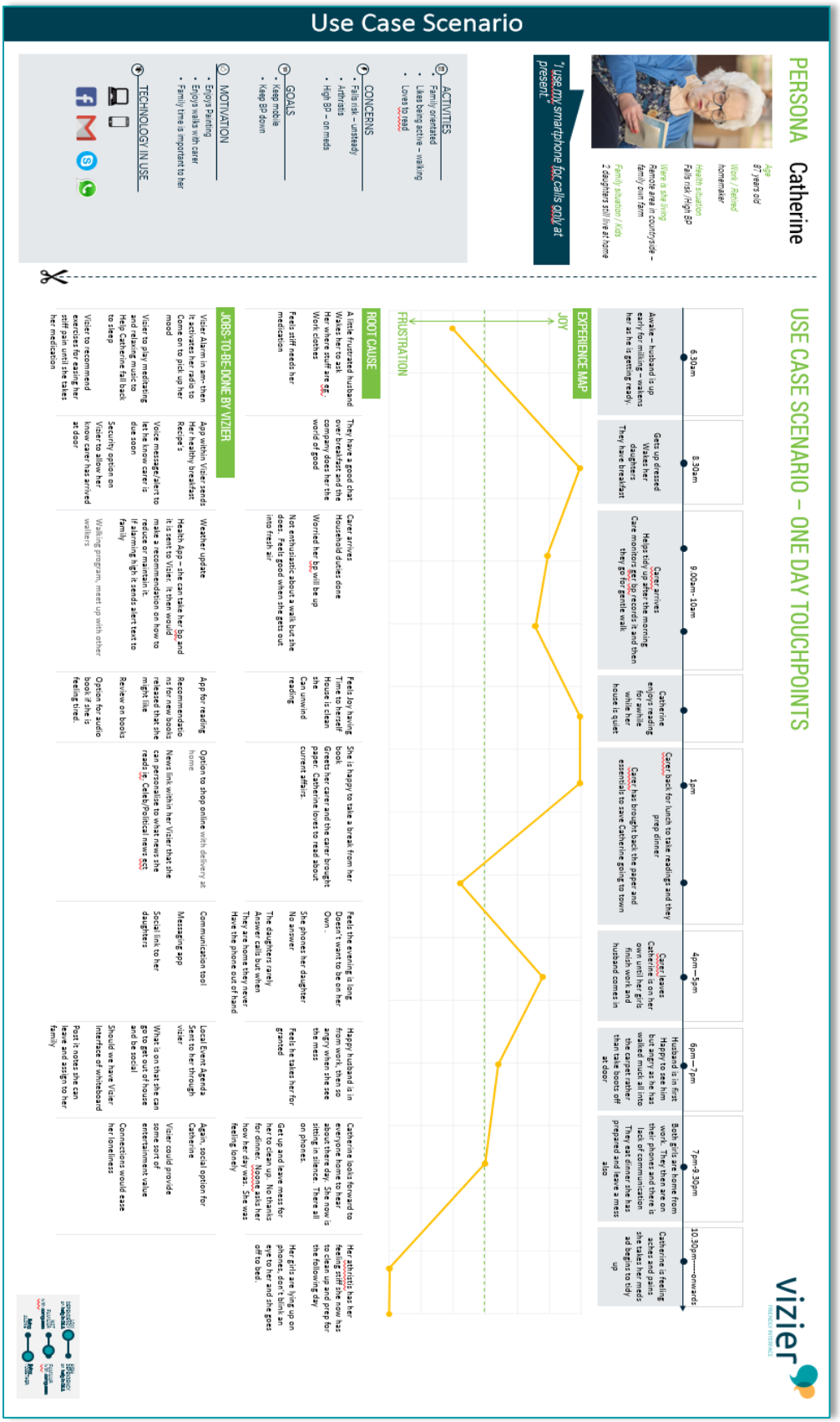
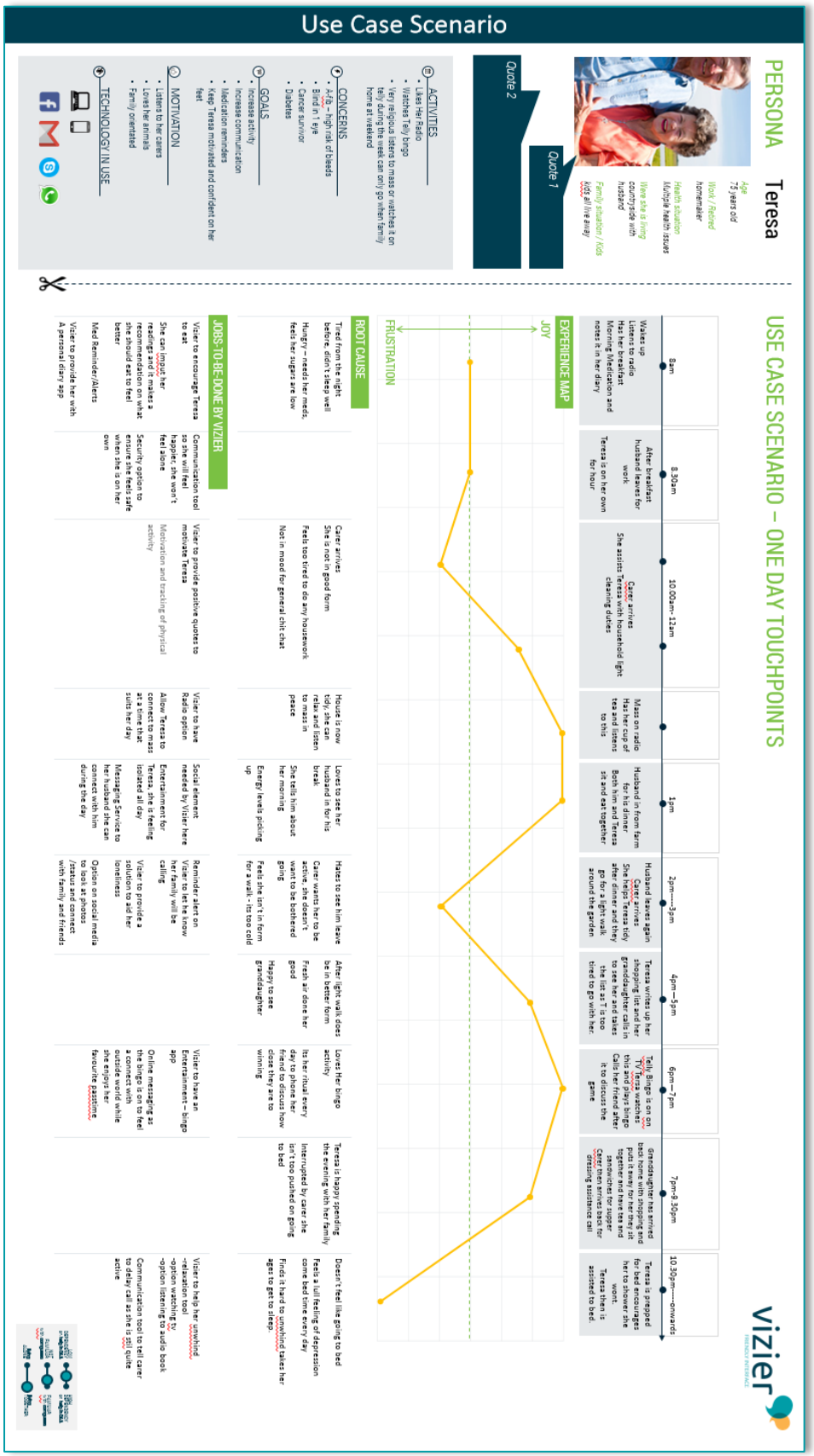


FIGURE 4 FULL USE CASE SCENARIO CANVAS

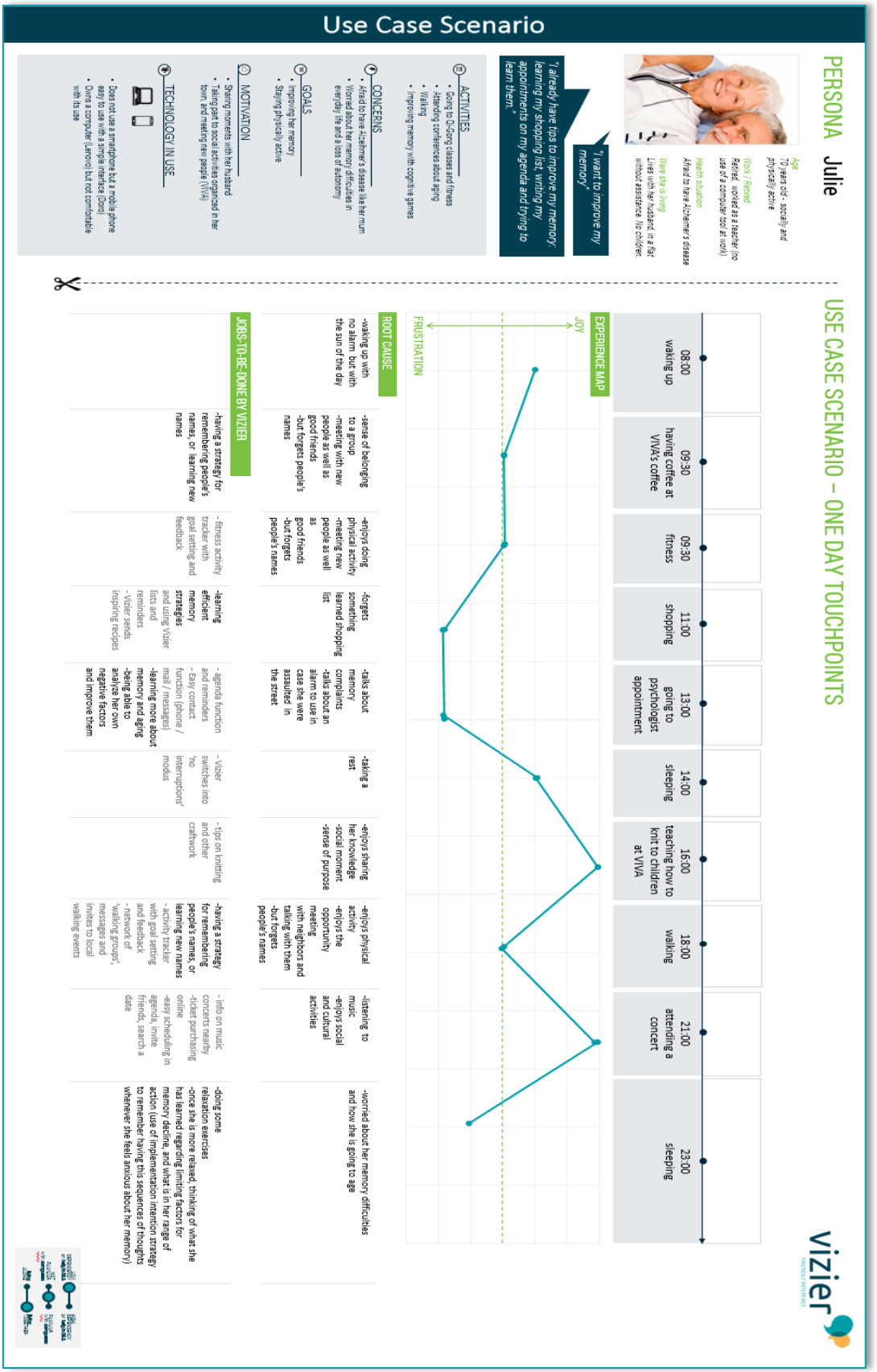
3 Ten Use Case scenarios

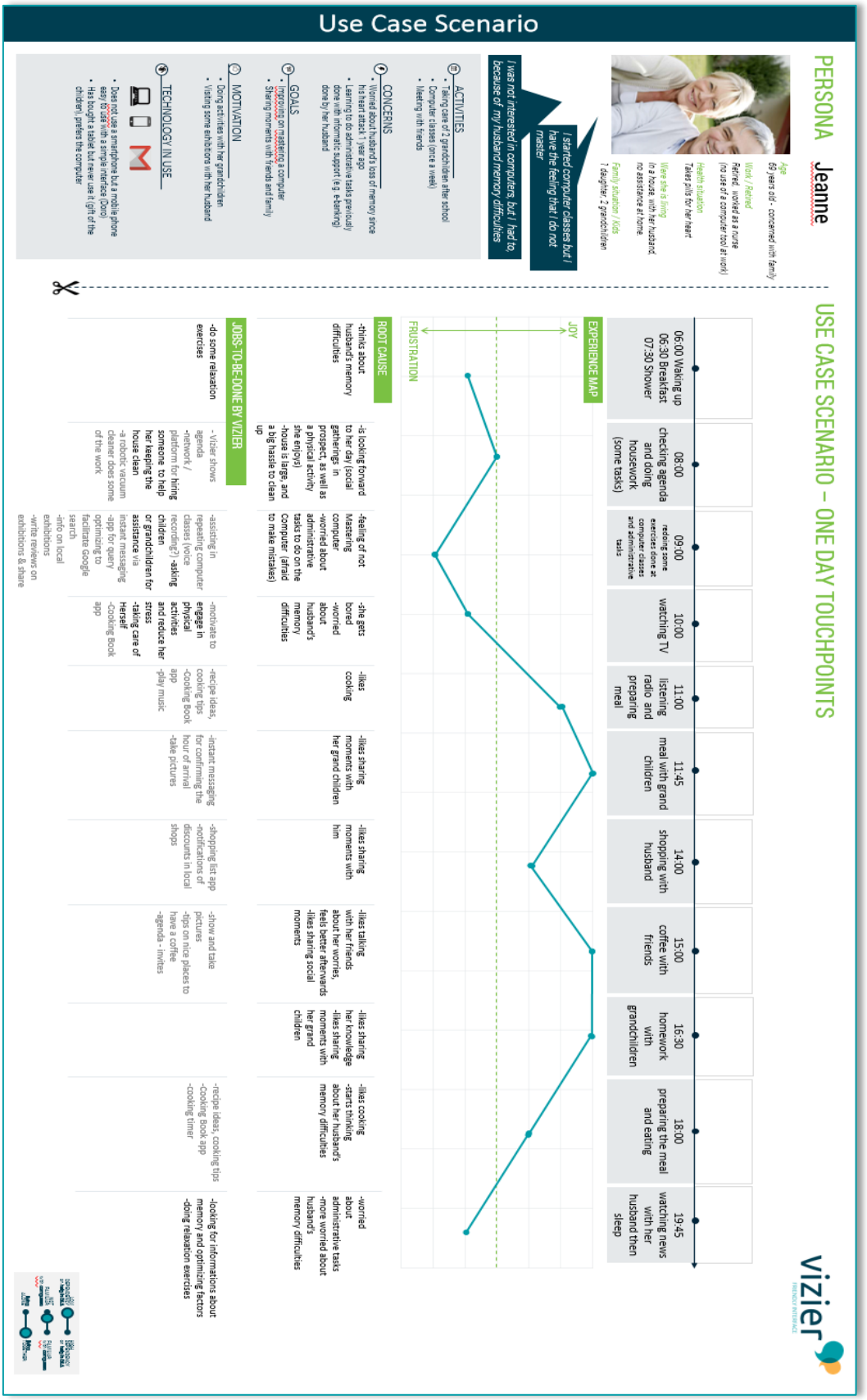
The 3 care organizations of our consortium (Viva, Familiehulp and Myhomecare) worked on this set of 10 persona. The 10 represent the breadth and diversity of their clientele. Men and women of all ages, living independently or those requiring some domestic support or individuals dependent on others for household activities, personal hygiene or medical conditions. Some of our seniors take computer lessons, some use a smartphone, others are people that are reluctant to engage with things like Facebook. Meet our end users:

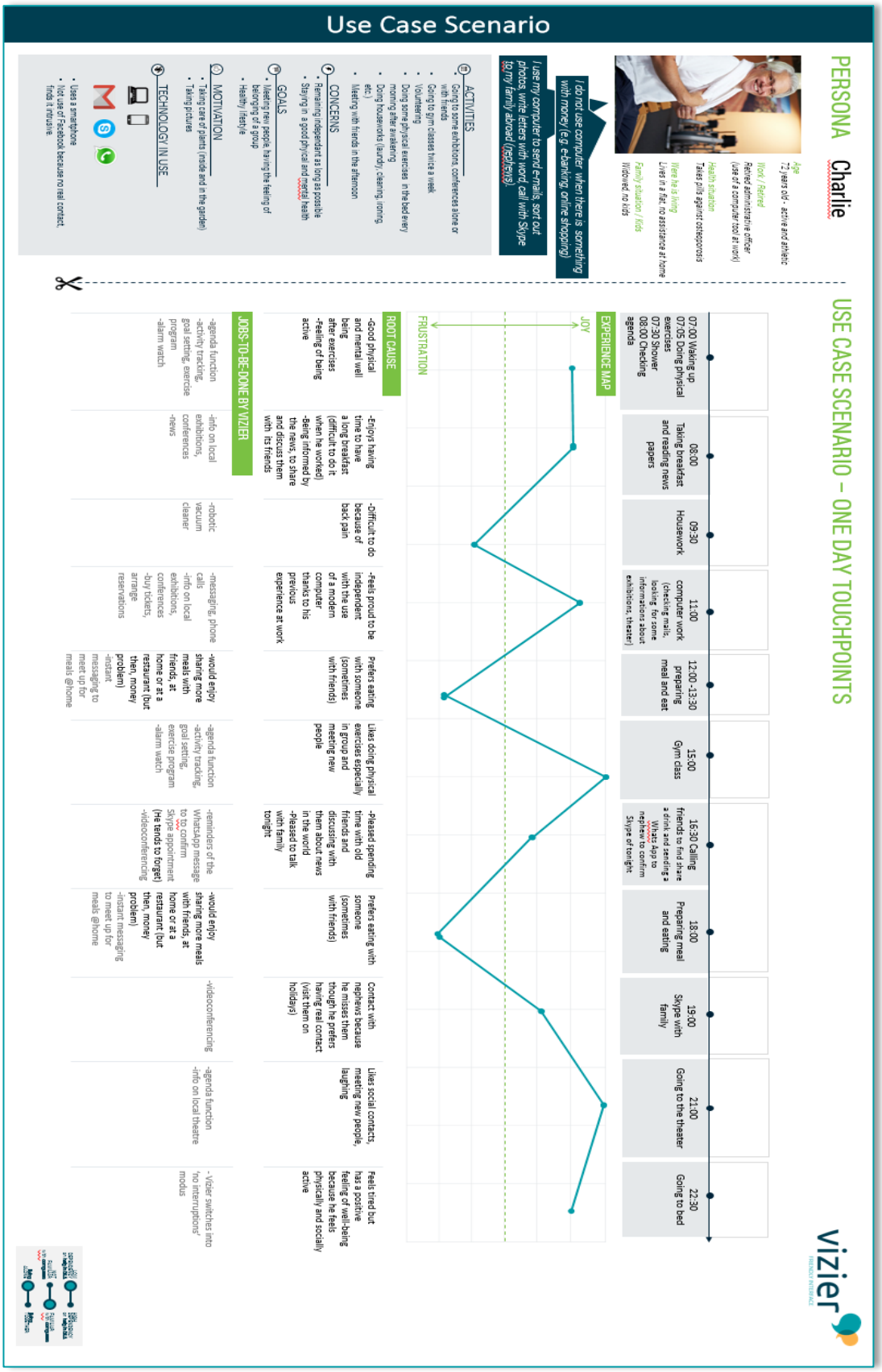

Use Case Scenario
PERSONA
Catherine
Age
87 years old
Work / Retired
homemaker
Health situation
Falls risk /High BP
Were is she living
Remote area in countryside – family own farm
Family situation / Kids
2 daughters still live at home
"I use my smartphone for calls only at present."
ACTIVITIES
Family orientated
Likes being active – walking
Loves to read
CONCERNS
Falls risk – unsteady
Arthristis
High BP – on meds
GOALS
Keep mobile
Keep BP down
MOTIVATION
Enjoys Painting
Enjoys walks with carer
Family time is important to her
TECHNOLOGY IN USE
USE CASE SCENARIO – ONE DAY TOUCHPOINTS
6.30am
Awake – husband is up early for milking – wakens her as he is getting ready.
8.30am
Gets up dressed Wakes her daughters They have breakfast
9.00am- 10am
Carer arrives Helps tidy up after the morning Care monitors ger bp records it and then they go for gentle walk
Catherine enjoys reading for awhile while her house is quiet
1pm
Carer back for lunch to take readings and they prep dinner
Carer has brought back the paper and essentials to save Catherine going to town
4pm – 5pm
Carer leaves Catherine is on her own until her girls finish work and husband comes in
6pm – 7pm
Husband is in first Happy to see him but angry as he has walked muck all into the carpet rather than take boots off at door
7pm-9.30pm
Both girls are home from work. They then are on their phones and there is lack of communication They eat dinner she has prepared and leave a mess also
10.30pm-----onwards
Catherine is feeling aches and pains she takes her meds ad begins to tidy up
EXPERIENCE MAP
JOY
FRUSTRATION
ROOT CAUSE
A little frustrated husband Wakes her to ask Her where stuff are eg. Work clothes
Feels stiff needs her medication
They have a good chat over breakfast and the company does her the world of good
Carer arrives Household duties done
Worried her bp will be up
Not enthusiastic about a walk but she does. Feels good when she gets out into fresh air
Feels Joy having Time to herself House is clean she Can unwind reading
She is happy to take a break from her book Greets her carer and the carer brought paper. Catherine loves to read about current affairs.
Feels the evening is long Doesn't want to be on her Own .
She phones her daughter No answer
The daughters rarely Answer calls but when They are home they never Have the phone out of hand
Happy husband is in from work, then so angry when she see the mess
Feels he takes her for granted
Catherine looks forward to everyone home to hear about there day. She now is sitting in silence. There all on phones.
Get up and leave mess for her to clean up. No thanks for dinner. Noone asks her how her day was. She was feeling lonely
Her athristis has her feeling stiff she now has to clean up and prep for the following day
Her girls are lying up on phones, don't blink an eye to her and she goes off to bed.
JOBS-TO-BE-DONE BY VIZIER
Vizier Alarm in am- then It activates her radio to Come on to pick up her mood
Vizier to play meditating and relaxing music to Help Catherine fall back to sleep
Vizier to recommend exercises for easing her stiff pain until she takes her medication
App within Vizier sends Her healthy breakfast Recipe's
Voice message/alert to let the know carer is due soon
Security option on Vizier to allow her know carer has arrived at door
Weather update
Health App – she can take her bp and it is sent to Vizier. It then would make a recommendation on how to reduce or maintain it. If alarming high it sends alert text to family
Walking program, meet up with other walkers
App for reading
Recommendations for new books released that she might like
Review on books
Option for audio book if she is feeling tired.
Option to shop online with delivery at home
News link within her Vizier that she can personalise to what news she reads ie. Celeb/Political news ect
Communication tool
Messaging app
Social link to her daughters
Local Event Agenda Sent to her through vizier
What is on that she can go to get out of house and be social
Should we have Vizier Interface of whiteboard
Post it notes she can leave and assign to her family
Again, social option for Catherine
Vizier could provide some sort of entertainment value
Connections would ease her loneliness

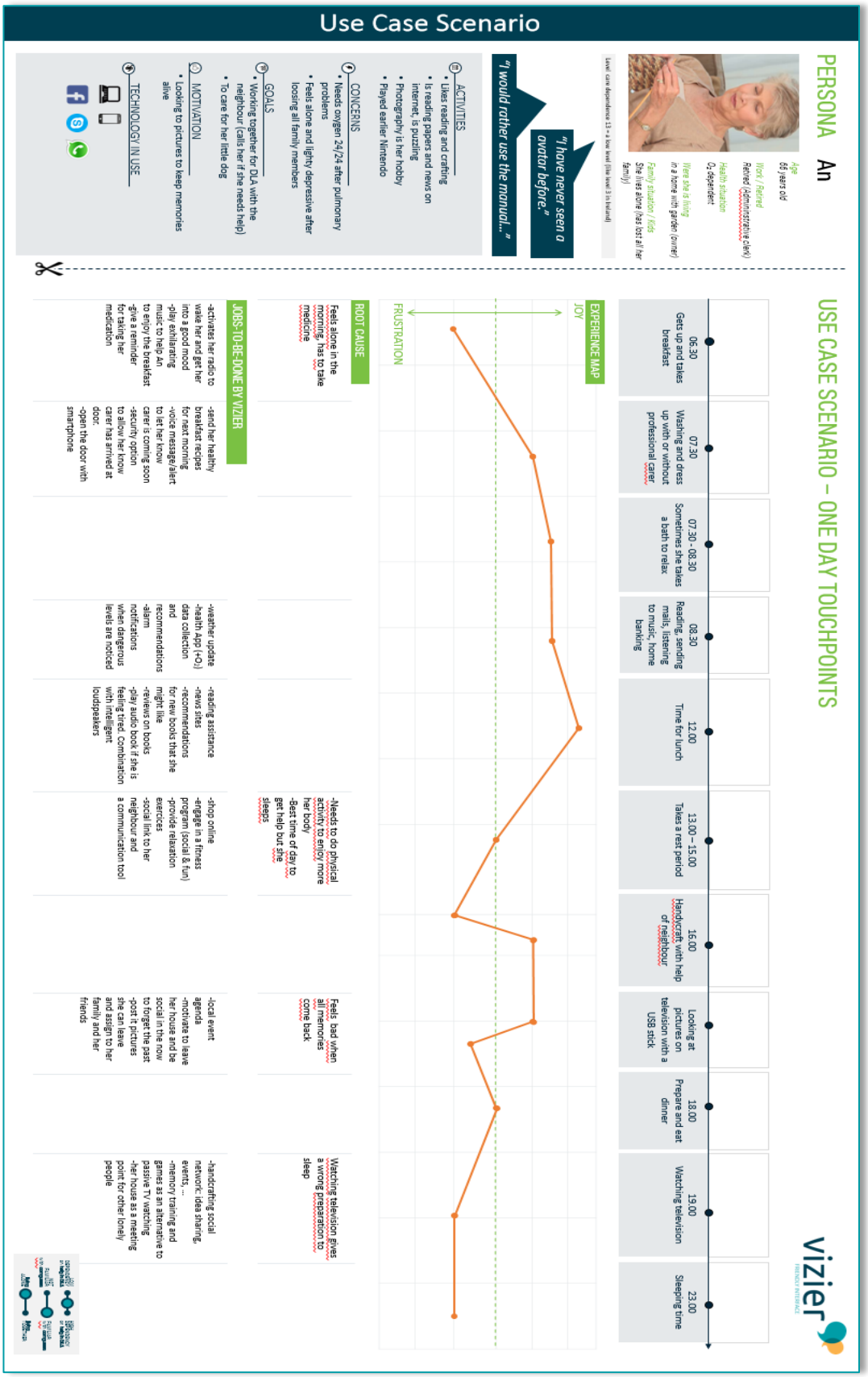

Use Case Scenario
PERSONA Teresa
Age 75 years old
Work / Retired homemaker
Health situation Multiple health issues
Where she is living countryside with husband
Family situation / Kids Kids all live away
Quote 1
Quote 2
ACTIVITIES
Likes Her Radio
Watches Telly bingo
Very religious listens to mass or watches it on telly during the week can only go when family home at weekend
CONCERNS
AMD – high risk of bleeds
Blind in 1 eye
Cancer survivor
Diabetes
GOALS
Increase activity
Increase communication
Medication reminders
Keep Teresa motivated and confident on her feet
MOTIVATION
Listens to her carers
Loves her animals
Family orientated
TECHNOLOGY IN USE
USE CASE SCENARIO – ONE DAY TOUCHPOINTS
EXPERIENCE MAP
JOY
FRUSTRATION
8am
Wakes up
Listens to radio
Has her breakfast
Morning Medication and notes it in her diary
8.30am
After breakfast husband leaves for work
Teresa is on her own for hour
10.00am-12am
Carer arrives
She assists Teresa with household light cleaning duties
1pm
Husband in from farm for his dinner
Both him and Teresa sit and eat together
2pm—3pm
Husband leaves again
Carer arrives
She helps Teresa tidy after dinner and they go for a light walk around the garden
4pm—5pm
Teresa writes up her shopping list and her granddaughter calls in to see her and takes the list as T is too tired to go with her.
6pm—7pm
Telly Bingo is on on TV Teresa watches this and plays bingo
Calls her friend after it to discuss the game
7pm-9.30pm
Granddaughter has arrived back from shopping and puts it away for her. They sit together and have tea and sandwiches for supper
Carer then arrives back for dressing assistance call
10.30pm—onwards
Teresa is prepped for bed encourages her to shower she won't.
Teresa then is assisted to bed.
ROOT CAUSE
Tired from the night before, didn't sleep well
Hungry – needs her meds, feed her sugars are low
Carer arrives
She is not in good form
Feels too tired to do any housework
Not in mood for general chit chat
House is now tidy, she can relax and listen to mass in peace
Loves to see her husband in for his break
She tells him about her morning
Energy levels picking up
Hates to see him leave
Carer wants her to be active, she doesn't want to be bothered going
Feels she isn't in form for a walk- its too cold
After light walk does be in better form
Fresh air done her good
Happy to see granddaughter
Lover Her bingo activity
Its her ritual every day to phone her friend to discuss how closer they are to winning
Teresa is happy spending the evening with her family
Interrupted by carer she isn't too pushed on going to bed
Doesn't feel like going to bed
Feels a lull feeling of depression come bed time every day
Finds it hard to somehow takes her aget to get to sleep.
JOBS-TO-BE-DONE BY VIZIER
Vizier to encourage Teresa to eat
She can input her readings and it makes a recommendation on what she should eat to feel better
Med Reminder/Alerts
Vizier to provide her with A personal diary app
Communication tool so she will feel happier, she won't feel alone
Security option to ensure she feels safe when she is on her own
Vizier to provide positive quotes to motivate Teresa
Motivation and tracking of physical activity
Vizier to have Radio Option
Allow Teresa to connect to mass at a time that suits her day
Social element needed by Vizier here
Entertainment for Teresa, she is feeling isolated all day
Messaging Service to her husband she can connect with him during the day
Reminder alert on Vizier to let he know her family will be calling
Vizier to provide a solution to aid her loneliness
Option on social media to look at photos /status and connect with family and friends
Vizier to help her unwind
-relaxation tool
-option watching tv
-option listening to audio book
Communication tool to tell carer to delay call as she is still quite active
Vizier to have an Entertainment – bingo app
Online messaging as the bingo on to feel a connection with outside world while she enjoys her favourite pastime

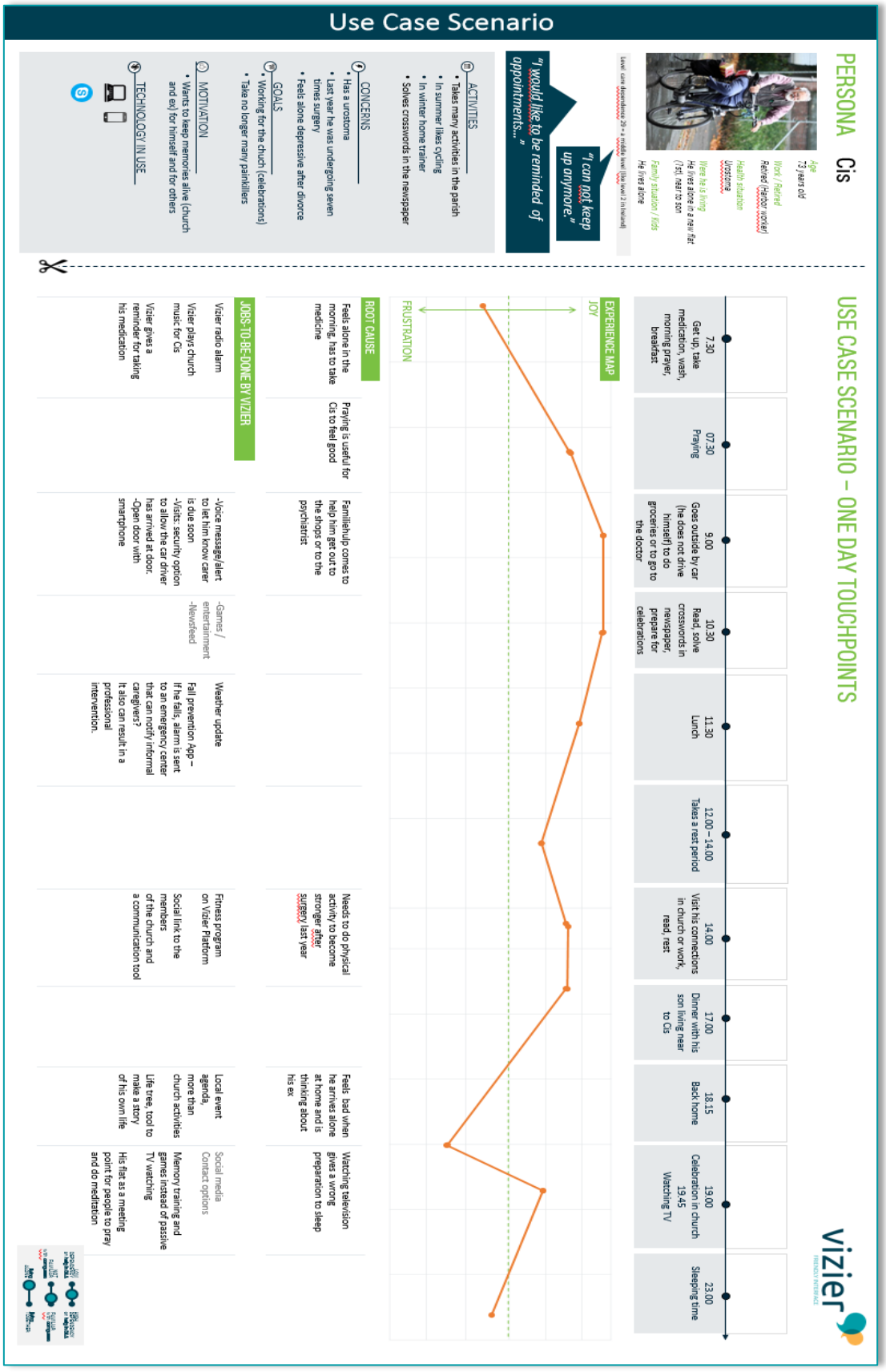
Use Case Scenario
PERSONA Karla
Age: 22 years old
Work / Retired
cannot work due to disability
Health situation
Cerebral Palsy/Non Verbal/Immobile
Where she is living
Home with family
Family situation / Kids
no children
Quote 2
Quote 1
ACTIVITIES
Attends Day Care 3 days per week
Likes when her family are at home especially her Nephew
Likes her Doll takes it everywhere
Loves TV – especially a teen soap operas
CONCERNS
Self Harms
Is hard to motivate
Unable to weight bear
GOALS
Help Karla enjoy her activities to encourage her to be happy
Keep Karla safe from self harming
Improve her communication to reduce her frustration
MOTIVATION
Influenced by her family
Her brother Harry can lift her mood and motivate
TECHNOLOGY IN USE
USE CASE SCENARIO – ONE DAY TOUCHPOINTS
JOY
FRUSTRATION
EXPERIENCE MAP
8am
Wakes up
Has to wait on someone to come in to her
8.30am
Parent comes in opens her curtains
Gets her clothes ready for the day
9.00am
Carers arrive mum lets them in.
Carers greet Karla and tell her about general news
Carers get Karla up, put her into her chair
They then take her up to kitchen for her breakfast
Karla has her breakfast and then her mum gives her meds
10am
The bus arrives and the carers help Karla out onto the bus and see her off
11am—5pm
Karla is with her friends on the bus as the go to collect all her friends for daycare
Arrives at center and they begin activities
6pm—8.30pm
Karla returns home from daycare and has dinner with family
Her brother is home from work and spends time with her watching Tv
9pm—10pm
Karla's 2 carers arrive back in and prep her for bed
Shower her and put he pjs on.
10.20pm
Her mum comes into the room when she is in bed to read her a story.
10.30pm—onwards
Karla lies there until she falls asleep. This normally takes her a long time to unwind.
ROOT CAUSE
Feeling lonely
Dependant on others to get her up and dressed.
Lying there idol
Tired from the night before struggles to sleep
Happy to see the sun is out
She likes to see her mum in the mornings
Her mum cheers her up, choses her favourite tshirt
Karla Happy to see carers
More company
As they talk about general news they make her laugh
She is happy to be up and dressed
Karla hates taking medication, she feels it makes her drowzey
Karla happy to see her friends
She is excited to go to daycare
Karla is in great form with all her friends
Karla hates leaving DC
She gets upset
When she returns home, she is made eat her dinner. Needs assistance from family.
She loves company of brother but he makes her watch soccer
Karla doesn't want to get ready for bed
She does feel better always after her shower
She loves listening to stories.
Karla isn't tired and gets upset she is now in her bed
Feels isolated from family
Feels alone
JOBS-TO-BE-DONE BY VIZIER
Vizier to enable Karla to message her mum when she is awake to alert her to come in
Option to use her tablet to turn on light
Open her curtains
Entertainment for the morning while she waits on her mum
Communication tool between Karla and her carers
Online schedule of when they are in– if they should be running late, they can notify her
Make her feel in control
Relaxation tool
Medical app to reassure Karla why her meds make her drowzey
Reminder alerts to get her excited about going to daycare.
Communication tool to keep in contact with her friends to ensure she doesn't feel upset leaving them
Social Media connection
Again Entertainment through her Vizier
When she has no control over what is on TV she can use her Vizier
Or she can use her Vizier to change the channel on TV and chose what she wants to watch
If he mum wasn't able to read to her an audio book option as entertainment
Messaging Service/Skype calls on her Vizier would help her feel mess isolated and more independent
Control to a TV in her room using Vizier as Control
She can turn off her own lights when She is ready for sleep.

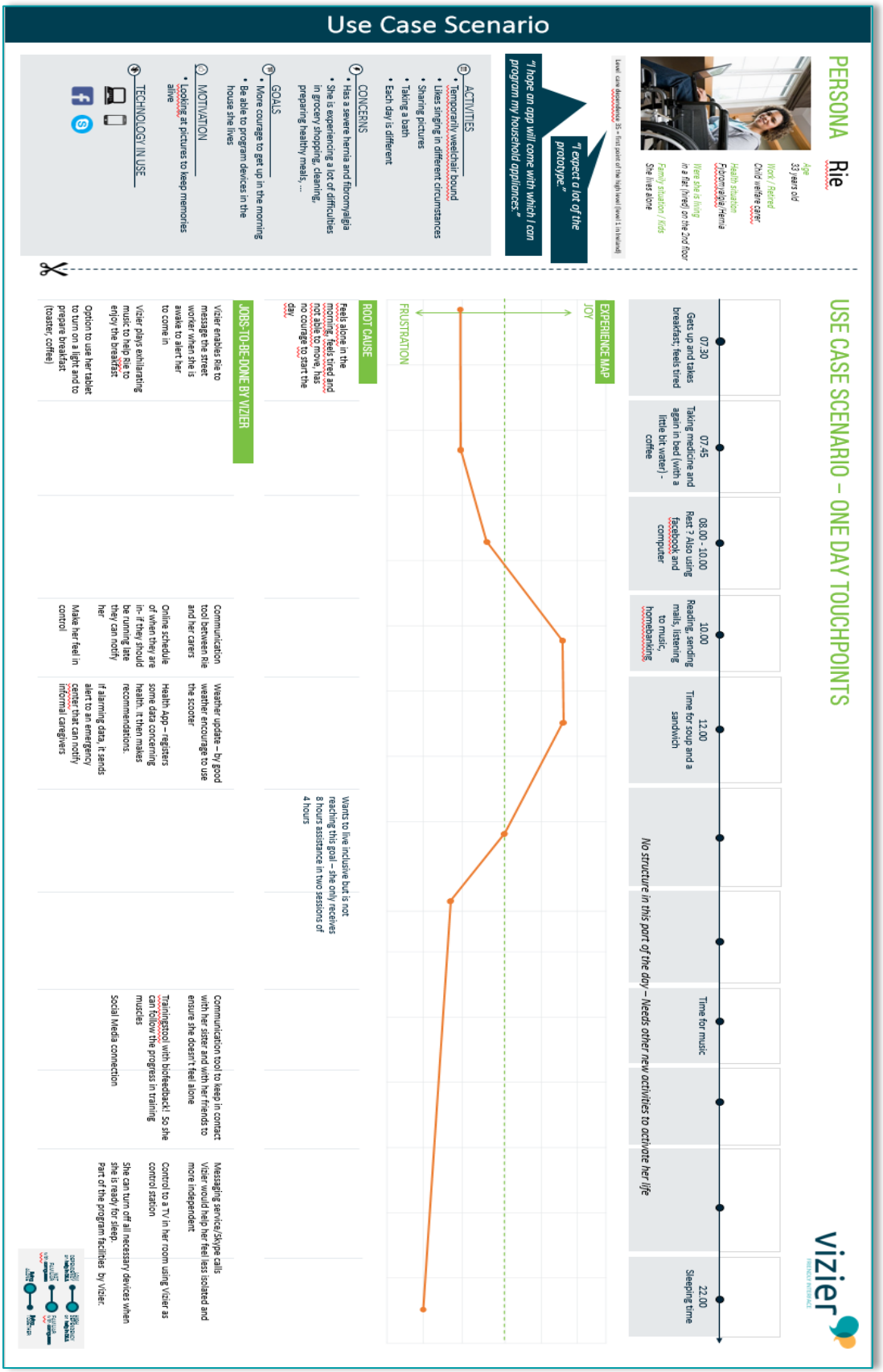

Use Case Scenario
PERSONA Julie
Age
70 years old - socially and physically active
Work / Retired
Retired, worked as a teacher / no use of a computer tool at work)
Health situation
Afraid to have Alzheimer's disease
Where she is living
Lives with her husband in a flat without assistance. No children
"I want to improve my memory"
"I already have tips to improve my memory: learning my shopping list, writing my appointments on my agenda and trying to learn them."
ACTIVITIES
Going to Qi-Gong classes and fitness
Attending conferences about aging
Walking
Improving memory with cognitive games
CONCERNS
Afraid to have Alzheimer's disease like her mum
Worried about her memory difficulties in everyday life and a loss of autonomy
GOALS
Improving her memory
Staying physically active
MOTIVATION
Sharing moments with her husband
Taking part to social activities organized in her town and meeting new people (VIVA)
TECHNOLOGY IN USE
Does not use a smartphone but a mobile phone easy to use with a simple interface (Doro)
Owns a computer (Lenovo) but not comfortable with its use
USE CASE SCENARIO – ONE DAY TOUCHPOINTS
EXPERIENCE MAP
JOY
FRUSTRATION
08:00 waking up
09:30 having coffee at VIVA's coffee
09:30 fitness
11:00 shopping
13:00 going to psychologist appointment
14:00 sleeping
16:00 teaching how to knit to children at VIVA
18:00 walking
21:00 attending a concert
23:00 sleeping
ROOT CAUSE
-waking up with no alarm but with the sun of the day
-sense of belonging to a group
-meeting with new people as well as good friends
-but forgets people's names
-enjoys doing physical activity
-meeting new people as well as good friends
-but forgets people's names
-forgets something
learned shopping list
-talks about memory complaints
-talks about an alarm to use in case she were assaulted in the street
-taking a rest
-enjoys sharing her knowledge
-social moment
-sense of purpose
-enjoys physical activity
-enjoys the opportunity meeting with neighbors and talking with them
-but forgets people's names
-listening to music
-enjoys social and cultural activities
-worried about her memory difficulties and how she is going to age
JOBS-TO-BE-DONE BY VIZIER
-having a strategy for remembering people's names, or learning new names
- fitness activity tracker with goal setting and feedback
-learning efficient memory strategies and using Vizier lists and reminders
- Vizier sends Inspiring recipes
- agenda function and reminders
- Easy contact function (phone / mail / messages)
-learning more about memory and aging
-being able to analyze her own negative factors and improve them
- Vizier switches into 'no interruptions' modus
- tips on knitting and other craftwork
-having a strategy for remembering people's names, or learning new names
- activity tracker with goal setting and feedback
- network of 'walking groups', messages and invites to local walking events
- info on music concerts nearby
-ticket purchasing online
-easy scheduling (in agenda, invite friends, search a date
-doing some relaxation exercises
-once she is more relaxed, thinking of what she has learned regarding limiting factors for memory decline, and what is in her range of action (use of implementation intention strategy to remember having this sequences of thoughts whenever she feels anxious about her memory)

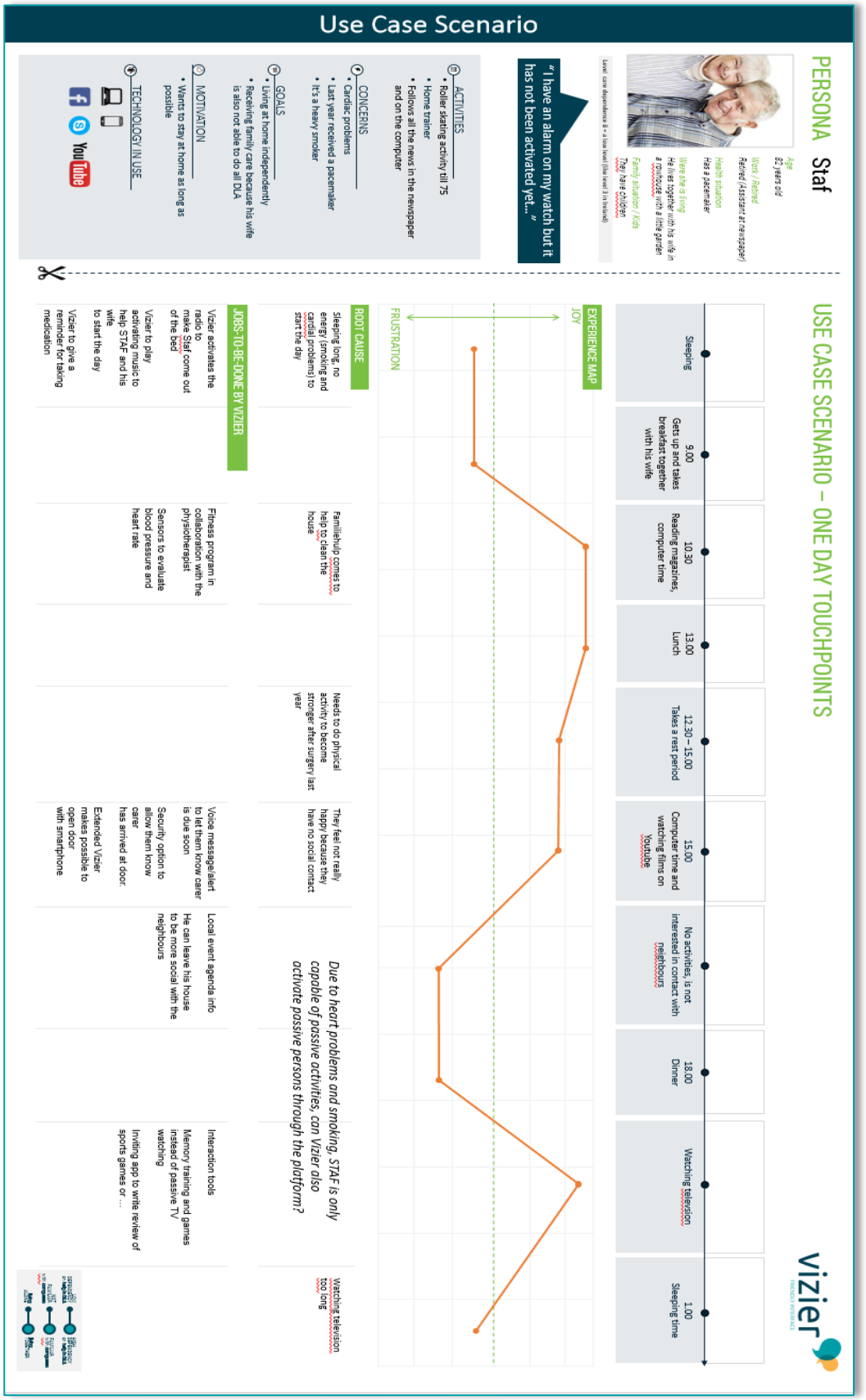

Use Case Scenario
PERSONA
Jeanne
Age
69 years old - concerned with family
Work / Retired
Retired, worked as a nurse
(no use of a computer tool at work)
Health situation
Takes pills for her heart
Where she is living
In a house with her husband,
no assistance at home
Family situation / Kids
1 daughter, 2 grandchildren
I started computer classes but I have the feeling that I do not master
I was not interested in computers but I had to, because of my husband memory difficulties
ACTIVITIES
Taking care of 2 grandchildren after school
Computer classes (once a week)
Meeting with friends
CONCERNS
Worried about husband's loss of memory since his heart attack 1 year ago
Learning to do administrative tasks previously done with informatic support (e.g. e-banking) done by her husband
GOALS
Improving on mastering a computer
Sharing moments with friends and family
MOTIVATION
Doing activities with her grandchildren
Visiting some exhibitions with her husband
TECHNOLOGY IN USE
Does not use a smartphone but a mobile phone easy to use with a simple interface (Doro)
Has bought a tablet but never use it (gift of the children), prefers the computer
USE CASE SCENARIO – ONE DAY TOUCHPOINTS
EXPERIENCE MAP
JOY
FRUSTRATION
06:00 Waking up
06:30 Breakfast
07:30 Shower
08:00 checking agenda and doing housework (some tasks)
09:00 redoing some exercises done at computer classes and administrative tasks
10:00 watching TV
11:00 listening radio and preparing meal
11:45 meal with grand children
14:00 shopping with husband
15:00 coffee with friends
16:30 homework with grandchildren
18:00 preparing the meal and eating
19:45 watching news with her husband then sleep
ROOT CAUSE
-thinks about husband's memory difficulties
-is looking forward to her day (social gatherings in prospect, as well as a physical activity she enjoys)
-house is large, and a big hassle to clean up
-feeling of not Mastering computer
-worried about administrative tasks to do on the Computer (afraid to make mistakes)
-she gets bored
-worried about husband's memory difficulties
-likes cooking
-likes sharing moments with her grand children
-likes sharing moments with him
-likes talking with her friends about her worries, feels better afterwards
-likes sharing social moments
-likes sharing her knowledge
-likes sharing moments with her grand children
-likes cooking
-starts thinking about her husband's memory difficulties
-worried about administrative tasks
-more worried about husband's memory difficulties
JOBS-TO-BE-DONE BY VIZIER
-do some relaxation exercises
- Vizier shows agenda
-network / platform for hiring someone to help her keeping the house clean
-a robotic vacuum cleaner does some of the work
-assisting in repeating computer classes (voice recording?) -asking children or grandchildren for assistance via instant messaging
-app for query optimizing to facilitate Google search
-info on local exhibitions
-write reviews on exhibitions & share
-motivate to engage in physical activities and reduce her stress
-taking care of Herself
-Cooking Book app
-recipe ideas, cooking tips, Cooking Book app
-play music
-instant messaging for confirming the hour of arrival
-take pictures
-shopping list app
-notifications of discounts in local shops
-show and take pictures
-tips on nice places to have a coffee
-agenda - invites
-recipe ideas, cooking tips
-Cooking Book app
-cooking timer
-looking for informations about memory and optimizing factors
-doing relaxation exercises


Use Case Scenario
PERSONA Charlie
Age 72 years old - active and athletic
Work / Retired
Retired administrative officer (use of a computer tool at work)
Health situation
Takes pills against osteoporosis
Where he is living
Lives in a flat, no assistance at home
Family situation / Kids
Widowed, no kids
I do not use computer when there is something with money (e.g. e-banking, online shopping)
I use my computer to send e-mails, sort out photos, write letters with word, call with Skype to my family abroad (nephews).
ACTIVITIES
Going to some exhibitions, conferences alone or with friends
Going to gym classes twice a week
Volunteering
Doing some physical exercises on the bed every morning after awakening
Doing housework (laundry, cleaning, ironing, etc.)
Meeting with friends in the afternoon
CONCERNS
Remaining independent as long as possible
Staying in a good physical and mental health
GOALS
Meeting new people, having the feeling of belonging of a group
Healthy lifestyle
MOTIVATION
Taking care of plants (inside and in the garden)
Taking pictures
TECHNOLOGY IN USE
Uses a smartphone
Not use of Facebook because no real contact, finds it intrusive
USE CASE SCENARIO – ONE DAY TOUCHPOINTS
EXPERIENCE MAP
JOY
FRUSTRATION
07:00 Waking up
07:05 Doing physical exercises
07:30 Shower
08:00 Checking agenda
08:00 Taking breakfast and reading news papers
09:30 Housework
11:00 computer work (checking mails, looking for some informations about exhibitions, theater)
12:00 -13:30 preparing meal and eat
15:00 Gym class
16:30 Calling friends to find share a drink and sending a Whats App to nephew to confirm Skype of tonight
18:00 Preparing meal and eating
19:00 Skype with family
21:00 Going to the theater
22:30 Going to bed
ROOT CAUSE
-Good physical and mental well being after exercises
-Feeling of being active
-Enjoys having time to have a long breakfast (difficult to do it when he worked)
-Being informed by the news, to share and discuss them with his friends
-Difficult to do because of back pain
-Feels proud to be independent with the use of a modern computer thanks to his previous experience at work
Prefers eating with someone (sometimes with friends)
Likes doing physical exercises especially in group and meeting new people
-Pleased spending time with old friends and discussing with them about news in the world
-Pleased to talk with family tonight
Prefers eating with someone (sometimes with friends)
Contact with nephews because he misses them though he prefers having real contact (visit them on holidays)
Likes social contacts, meeting new people, laughing
Feels tired but has a positive feeling of well-being because he feels physically and socially active
JOBS-TO-BE-DONE BY VIZIER
-agenda function
-activity tracking, goal setting, exercise program
-alarm watch
-info on local exhibitions, conferences
-news
-robotic vacuum cleaner
-messaging, phone calls
-info on local exhibitions, conferences
-buy tickets, arrange reservations
-would enjoy sharing more meals with friends, at home or at a restaurant (but then, money problem)
-instant messaging to meet up for meals @home
-agenda function
-activity tracking, goal setting, exercise program
-alarm watch
-reminders of the WhatsApp message to confirm Skype appointment (He tends to forget)
-videoconferencing
-would enjoy sharing more meals with friends, at home or at a restaurant (but then, money problem)
-instant messaging to meet up for meals @home
-videoconferencing
-agenda function
-info on local theatre
- Vizier switches into 'no interruptions' modus


Use Case Scenario
PERSONA
An
Age
66 years old
Work / Retired
Retired (Administrative clerk)
Health situation
O2 dependent
Were she is living
in a home with garden (owner)
Family situation / Kids
She lives alone (has lost all her family)
Level care dependence 13 = a low level (like level 3 in Ireland)
"I have never seen a avatar before."
"I would rather use the manual..."
ACTIVITIES
• Likes reading and crafting
• Is reading papers and news on internet, is puzzling
• Photography is her hobby
• Played earlier Nintendo
CONCERNS
• Needs oxygen 24/24 after pulmonary problems
• Feels alone and lighty depressive after loosing all family members
GOALS
• Working together for DLA with the neighbour (calls her if she needs help)
• To care for her little dog
MOTIVATION
• Looking to pictures to keep memories alive
TECHNOLOGY IN USE
USE CASE SCENARIO – ONE DAY TOUCHPOINTS
06.30 Gets up and takes breakfast
07.30 Washing and dress up with or without professional carer
07.30 - 08.30 Sometimes she takes a bath to relax
08.30 Reading, sending mails, listening to music, home banking
12.00 Time for lunch
13.00 – 15.00 Takes a rest period
16.00 Handycraft with help of neighbour
Looking at pictures on television with a USB stick
18.00 Prepare and eat dinner
19.00 Watching television
23.00 Sleeping time
EXPERIENCE MAP
JOY
FRUSTRATION
ROOT CAUSE
Feels alone in the morning, has to take medicine
-Needs to do physical activity to enjoy more her body
-Best time of day to get help but she sleeps
Feels bad when all memories come back
Watching television gives a wrong preparation to sleep
JOBS-TO-BE-DONE BY VIZIER
-activates her radio to wake her and get her into a good mood
-play exhilarating music to help An to enjoy the breakfast
-give a reminder for taking her medication
-send her healthy breakfast recipes for next morning
-voice message/alert to let her know carer is coming soon
-security option to allow her know carer has arrived at door.
-open the door with smartphone
-weather update
-health App (+O2)
data collection and recommendations
-alarm notifications when dangerous levels are noticed
-reading assistance
-news sites
-recommendations for new books that she might like
-reviews on books
-play audio book if she is feeling tired. Combination with intelligent loudspeakers
-shop online
-engage in a fitness program (social & fun)
-provide relaxation exercices
-social link to her neighbour and a communication tool
-local event agenda
-motivate to leave her house and be social in the now to forget the past
-post it pictures she can leave and assign to her family and her friends
-handcrafting social network: idea sharing, events, ...
-memory training and games as an alternative to passive TV watching
-her house as a meeting point for other lonely people


Use Case Scenario
PERSONA Cis
Age
73 years old
Work / Retired
Retired (Indoor worker)
Health situation
Urostoma
Where he is living
He lives alone in a new flat (1st) near to son
Family situation / Kids
He lives alone
"I would like to be reminded of appointments..."
"I can not keep up anymore."
ACTIVITIES
• Takes many activities in the parish
• In summer likes cycling
• In winter home trainer
• Solves crosswords in the newspaper
CONCERNS
• Has a urostoma
• Last year he was undergoing seven times surgery
• Feels alone depressive after divorce
GOALS
• Working for the chuch (celebrations)
• Take no longer many painkillers
MOTIVATION
• Wants to keep memories alive (church and ex) for himself and for others
TECHNOLOGY IN USE
USE CASE SCENARIO – ONE DAY TOUCHPOINTS
EXPERIENCE MAP
JOY
FRUSTRATION
7.30 Get up, take medication, wash, morning prayer, breakfast
07.30 Praying
9.00 Goes outside by car (he does not drive himself) to do groceries or to go to the doctor
10.30 Read, solve crosswords in newspaper, prepare for celebrations
11.30 Lunch
12.00 – 14.00 Takes a rest period
14.00 Visit his connections in church or work, read, rest
17.00 Dinner with his son living near to Cis
18.15 Back home
19.00 Celebration in church 19.45 Watching TV
23.00 Sleeping time
ROOT CAUSE
Feels alone in the morning, has to take medicine
Praying is useful for Cis to feel good
Familiehulp comes to help him get out to the shops or to the psychiatrist
Needs to do physical activity to become stronger after surgery last year
Feels bad when he arrives alone at home and is thinking about his ex
Watching television gives a wrong preparation to sleep
JOBS-TO-BE-DONE BY VIZIER
Vizier radio alarm
Vizier plays church music for Cis
Vizier gives a reminder for taking his medication
-Voice message/alert to let him know carer is due soon
-Visits: security option to allow the car driver has arrived at door.
-Open door with smartphone
-Games / entertainment
-Newsfeed
Weather update
Fall prevention App – If he falls, alarm is sent to an emergency center that can notify informal caregivers? It also can result in a professional intervention.
Fitness program on Vizier Platform
Social link to the members of the church and a communication tool
Local event agenda, more than church activities
Life tree, tool to make a story of his own life
Social media
Contact options
Memory training and games instead of passive TV watching
His flat as a meeting point for people to pray and do meditation


Use Case Scenario
PERSONA Rie
Age 33 years old
Work / Retired Child welfare carer
Health situation Fibromyalgia Hernia
Where she is living In a flat (shed) on the 2nd floor
Family situation / Kids She lives alone
"I expect a lot of the prototype."
"I hope an app will come with which I can program my household appliances."
ACTIVITIES
Temporarily weelchair bound
Likes singing in different circumstances
Sharing pictures
Taking a bath
Each day is different
CONCERNS
Has a severe hernia and fibromyalgia
She is experiencing a lot of difficulties in grocery shopping, cleaning, preparing healthy meals, ...
GOALS
More courage to get up in the morning
Be able to program devices in the house she lives
MOTIVATION
Looking at pictures to keep memories alive
TECHNOLOGY IN USE
USE CASE SCENARIO – ONE DAY TOUCHPOINTS
07.30 Gets up and takes breakfast; feels tired
07.45 Taking medicine and again in bed (with a little bit water) - coffee
08.00 - 10.00 Rest ? Also using facebook and computer
10.00 Reading, sending mails, listening to music, homebanking
12.00 Time for soup and a sandwich
No structure in this part of the day – Needs other new activities to activate her life
Time for music
22.00 Sleeping time
EXPERIENCE MAP
JOY
FRUSTRATION
ROOT CAUSE
Feels alone in the morning, feels tired and not able to move, has no courage to start the day
Wants to live inclusive but is not reaching this goal – she only receives 8 hours assistance in two sessions of 4 hours
JOBS-TO-BE-DONE BY VIZIER
Vizier enables Rie to message the street worker when she is awake to alert her to come in
Vizier plays exhilarating music to help Rie to enjoy the breakfast
Option to use her tablet to turn on a light and to prepare breakfast (toaster, coffee)
Communication tool between Rie and her carers
Online schedule of when they are in- if they should be running late they can notify her
Make her feel in control
Weather update – by good weather encourage to use the scooter
Health App – registers some data concerning health. It then makes recommendations.
If alarming data, it sends alert to an emergency center that can notify informal caregivers
Communication tool to keep in contact with her sister and with her friends to ensure she doesn't feel alone
Trainingstool with biofeedback! So she can follow the progress in training muscles
Social Media connection
Messaging service/Skype calls Vizier would help her feel less isolated and more independent
Control to a TV in her room using Vizier as control station
She can turn off all necessary devices when she is ready for sleep.
Part of the program facilities by Vizier.


Use Case Scenario
PERSONA Staf
Age 82 years old
Work / Retired
Retired (Assistant at newspaper)
Health situation
Has a pacemaker
Where she is living
He lives together with his wife in a penthouse with a little garden
Family situation / Kids
They have children
Level of care dependence 8 = a low level (like level 3 in Belgium)
"I have an alarm on my watch but it has not been activated yet..."
ACTIVITIES
• Roller skating activity till 75
• Home trainer
• Follows all the news in the newspaper and on the computer
CONCERNS
• Cardiac problems
• Last year received a pacemaker
• It's a heavy smoker
GOALS
• Living at home independently
• Receiving family care because his wife is also not able to do all DLA
MOTIVATION
• Wants to stay at home as long as possible
TECHNOLOGY IN USE
USE CASE SCENARIO – ONE DAY TOUCHPOINTS
Sleeping
9.00 Gets up and takes breakfast together with his wife
10.30 Reading magazines, computer time
13.00 Lunch
12.30 – 15.00 Takes a rest period
15.00 Computer time and watching films on Youtube
No activities, is not interested in contact with neighbours
18.00 Dinner
Watching television
1.00 Sleeping time
EXPERIENCE MAP
JOY
FRUSTRATION
ROOT CAUSE
Sleeping long, no energy (smoking and cardial problems) to start the day
Familiehulp comes to help to clean the house
Needs to do physical activity to become stronger after surgery last year
They feel not really happy because they have no social contact
Due to heart problems and smoking, STAF is only capable of passive activities, can Vizier also activate possive persons through the platform?
Watching television too long
JOBS-TO-BE-DONE BY VIZIER
Vizier activates the radio to make Staf come out of the bed
Vizier to play activating music to help STAF and his wife to start the day
Vizier to give a reminder for taking medication
Fitness program in collaboration with the physiotherapist
Sensors to evaluate blood pressure and heart rate
Voice message/alert to let them know carer is due soon
Security option to allow them know carer has arrived at door
Extended Vizier makes possible to open door with smartphone
Local event agenda info
He can leave his house to be more social with the neighbours
Interaction tools
Memory training and games instead of passive TV watching
Inviting app to write review of sports games or ...

During the process of developing a set of 10 persona, the partners started with the personal data available from questionnaires and interviews. This was a first exercise in the pseudonymisation & anonymization. This is the processing of personal data in such a manner that such data can no longer be attributed to a specific data subject without the use of additional information. Provided that such additional information is stored separately and is subject to technical organizational, the anonymised data cannot be used to an identify a natural person. To this effect, each persona in this set of 10 has been pseudonymised. The photos are not linked to the existing persons.

4 Assimilation

The set of 10 personas and their use cases, lead us to imagine how Vizier could be constructed in order to fulfil the needs of as many users as possible. Figure 5 shows how we mapped Vizier functions that would fit the personas (Who would use this function?). This view of both common and different needs allowed us to determine the core functionality for the basic version of Vizier.

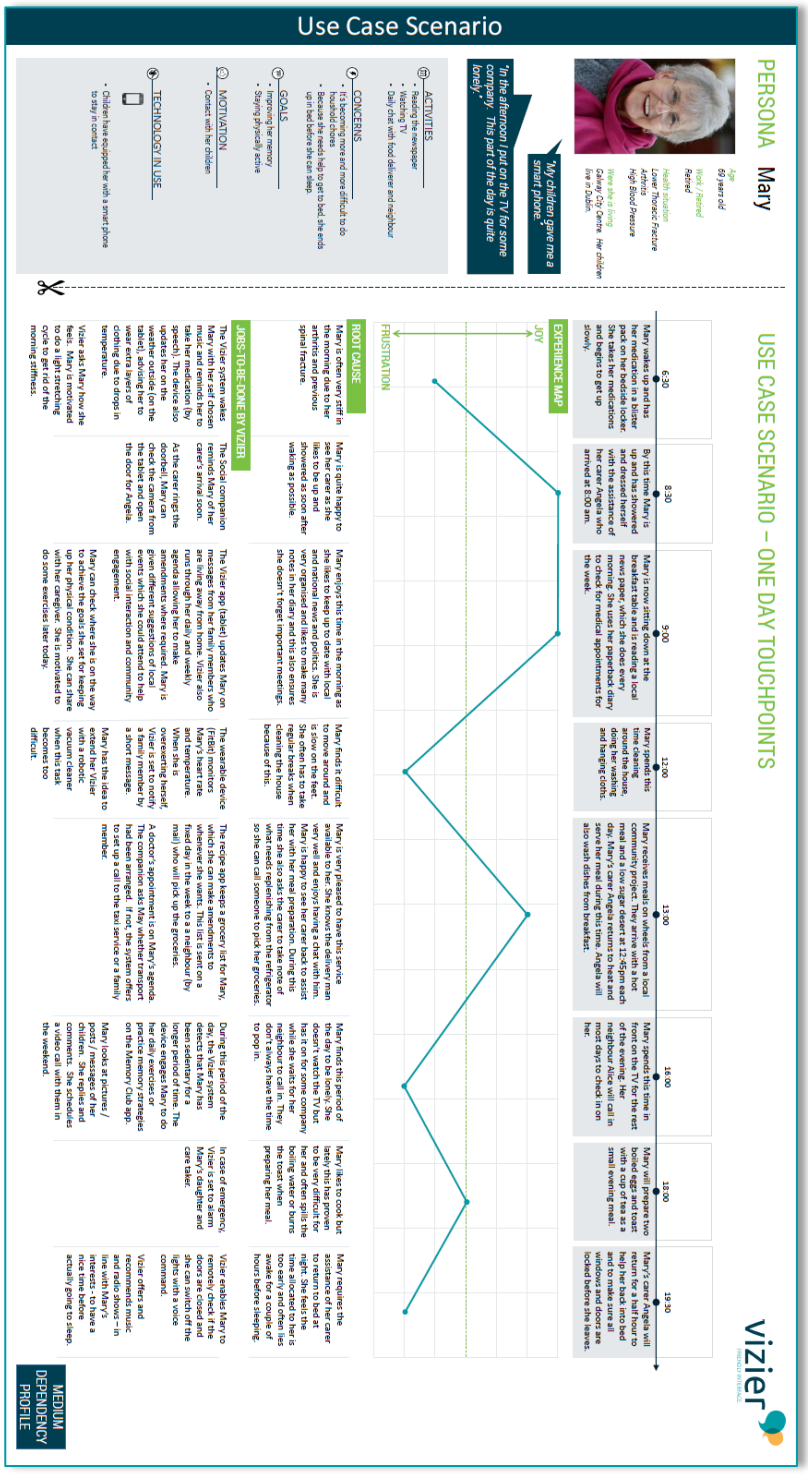
		QUESTIONNAIRES [/10]	INTERVIEWS [/10]	PERSONAS [/10]	PERSONA Karla	PERSONA Rie	PERSONA An	PERSONA Jeanne	PERSONA Charlie	PERSONA Julie	PERSONA Cis	PERSONA Teresa	PERSONA Staf	PERSONA Catherine
HARDWARE	**Heath related devices**													
	- Activity tracker	/	/	4				X		X	X			X
	- Scales	/	/	/										
	- Medial parameter sensors	/	/	4		X						X	X	X
	- Sleep monitoring / movement detection	/	/	3										
	Domestic help devices													
	- Home management (lights, temp., ...)	2-	/	6	X	X	X	X	X				X	
	- Household appliances (IoT)													
	- Security	/	/	5	X		X				X	X	X	
	- Finding objects	3	/	0										
	Entertainment & activity devices													
	Contact devices													
	- Devices for communication (tablet, TV, robot, audio speakers, ...)	/	/	10	X	X	X	X	X	X	X	X	X	X
	- Camera (pictures, videoconferencing, ...)	/	/	5	X			X		X		X		X
SOFTWARE	**Physical health**													
	- Physical activity program (walking, fitness, ...)	3	/	6			X	X		X	X		X	X
	- Trainingstool with biofeedback	/	/	1		X								
	- Medical parameter registration	/	/	4		X						X	X	X
	- Alarm (fall, high bp, ...)	3	2	3							X	X		X
	Mental health											X		
	- Memory training	4	7	4			X			X	X		X	
	- Relaxation	2	4	5	X		X	X		X		X		
	Food	/	/	4			X			X		X		X
	Agenda ★	/	/	5	X	X		X	X	X				
	Reminders ★	3	6	7	X		X		X	X	X	X	X	
	Notes	/	/	2				X						X
	Alarm clock	/	/	5			X		X		X		X	X
	Domestic tasks ★													
	- Cleaning, laundry, ironing	/	/	0										
	- Vacuum cleaning	1	/	2				X	X					
	- Grocery & other shopping (online)	/	/	4			X		X	X				X
	Finding objects	3	/	0										
	Home automation (lights, doors, curtains, ...)	2	/	5	X	X	X				X		X	
	Security	/	/	3	X							X	X	
	News, weather	/	/	5	X	X	X				X			X
	Social media	3	6	6	X	X		X	X		X	X	X	X
	Tips for local activities / events ★	/	7	7			X	X	X	X	X	X	X	X
	Tips on hobbies	/	/	3			X	X		X				
	Search info on the internet	3	/	2			X	X						
	Photo management (take, share, ...) *	/	6	2	X			X						
	Digital diary / Life tree / memory recording *	/	6	2							X	X		
	Play music / radio / podcast	/	/	8	X	X	X	X			X	X	X	X
	Reading (reviews, audio books, ...)	/	/	3	X		X					X		
	Games & entertainment	/	/	6	X			X			X	X	X	X
	Control TV	/	/	3	X	X						X		
	Communication (phone, sms, mail, IM, videoconf...)	/	/	10	X	X	X	X	X	X	X	X	X	X
	- Carer communication (app)	/	/	7	X	X	X				X	X	X	X

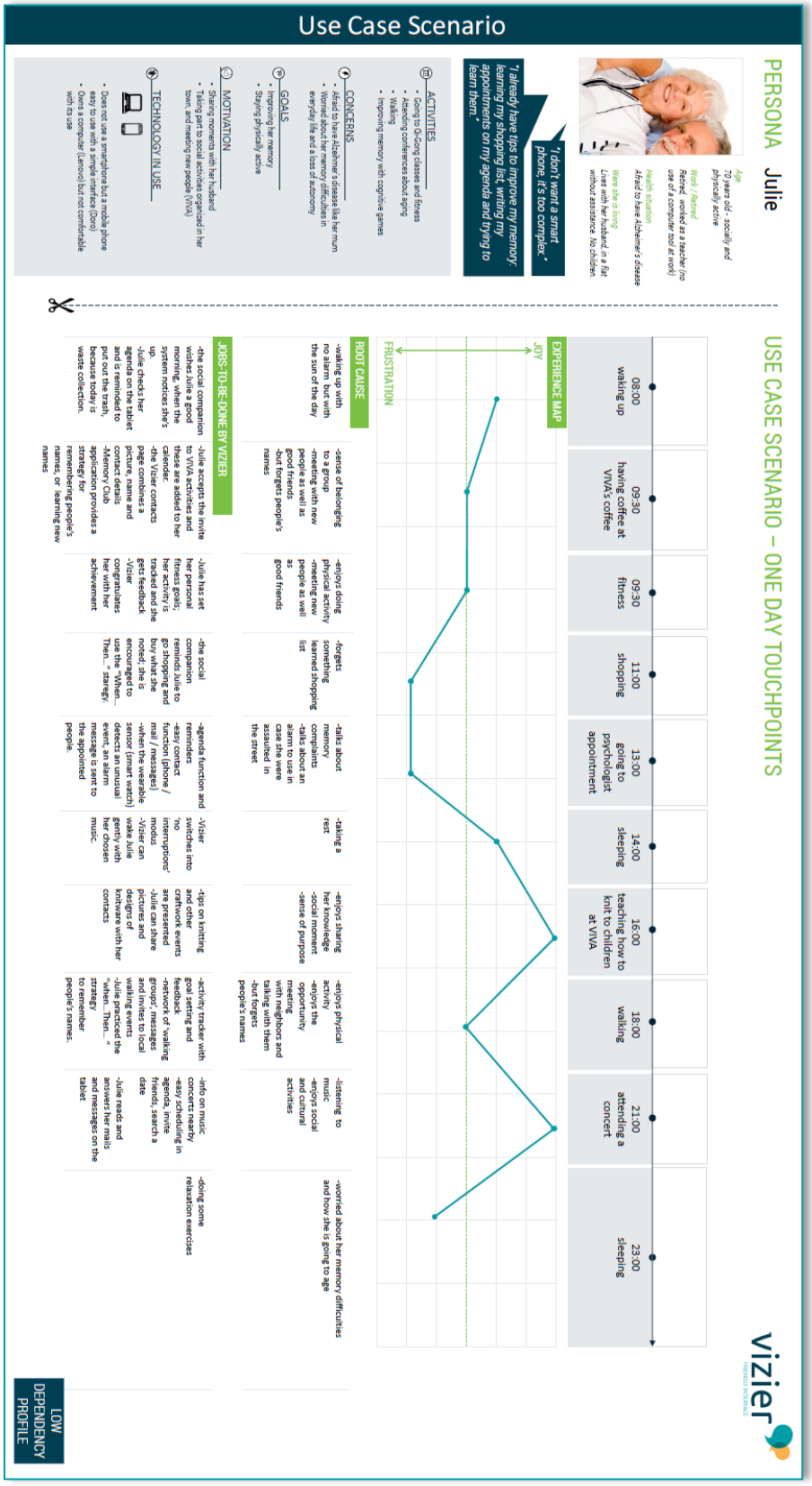
FIGURE 5 PERSONAS VS USER NEEDS

5 Two target use cases

As a synthesis of the work done on the use cases, we created 2 use cases to guide the further development. One is a very independent older adult and the second has a carer to support her to live on her own.

Meet Mary and Julie.




Use Case Scenario
PERSONA Julie
Age
70 years old - socially and physically active
Work / Retired
Retired, worked as a teacher (no use of a computer tool at work)
Health situation
Afraid to have Alzheimer's disease
Where she is living
Lives with her husband, in a flat without assistance. No children.
"I already have tips to improve my memory: learning my shopping list, writing my appointments on my agenda and trying to learn them."
"I don't want a smart phone, it's too complex."
ACTIVITIES
Going to Qi-Gong classes and fitness
Attending conferences about aging
Walking
Improving memory with cognitive games
CONCERNS
Afraid to have Alzheimer's disease like her mum
Worried about her memory difficulties in everyday life and a loss of autonomy
GOALS
Improving her memory
Staying physically active
MOTIVATION
Sharing moments with her husband
Taking part to social activities organized in her town and meeting new people (VIVA)
TECHNOLOGY IN USE
Does not use a smartphone but a mobile phone easy to use with a simple interface (Doro)
Owns a computer (Lenovo) but not comfortable with its use
USE CASE SCENARIO – ONE DAY TOUCHPOINTS
EXPERIENCE MAP
JOY
FRUSTRATION
08:00 waking up
09:30 having coffee at VIVA's coffee
09:30 fitness
11:00 shopping
13:00 going to psychologist appointment
14:00 sleeping
16:00 teaching how to knit to children at VIVA
18:00 walking
21:00 attending a concert
23:00 sleeping
ROOT CAUSE
-waking up with no alarm but with the sun of the day
-sense of belonging to a group
-enjoys doing physical activity
-forgets something: learned shopping list
-talks about memory difficulties
-talks about an alarm to use in case she were assaulted in the street
-taking a rest
-enjoys sharing her knowledge
-social moment
-sense of purpose
-enjoys physical activity
-enjoys the opportunity meeting with neighbors and talking with them
-but forgets people's names
-listening to music, social and cultural activities
-worried about her memory difficulties and how she is going to age
-doing some relaxation exercises
JOBS-TO-BE-DONE BY VIZIER
-the social companion wishes Julie a good morning, when the system notices she's up.
-Julie checks her agenda on the tablet and is reminded to put out the trash, because today is waste collection.
-Julie accepts the invite to VIVA activities and these are added to her calendar.
-the Vizier contacts page combines a picture, name and contact details
-Memory Club application provides a strategy for remembering people's names, or learning new names
-Julie has set her personal fitness goals; her activity is tracked and she gets feedback
-Vizier congratulates her with her achievement
-the social companion reminds Julie to go shopping and buy what she noted; she is encouraged to use the "When... Then..." strategy.
-agenda function and reminders
-easy contact function (phone / mail / messages)
-when the wearable sensor (smart watch) detects an unusual event, an alarm message is sent to the appointed people.
-Vizier switches into 'no interruptions' modus
-Vizier can wake Julie gently with her chosen music.
-tips on knitting and other craftwork events are presented
-Julie can share pictures and designs of knitware with her contacts
-activity tracker with goal setting and feedback
-network of 'walking groups'; messages and invites to local walking events
-Julie practiced the "when... Then..." strategy to remember people's names.
-info on music concerts nearby
-easy scheduling in agenda, invite friends, search a date
-Julie reads and answers her mails and messages on the tablet
LOW DEPENDENCY PROFILE

6 Conclusions

6.1 Product configuration

This study has underscored the importance of a broad platform, such as Vizier to be customizable. Not every user will use every possible function. However, every user should be able to select the functionality that they require to a degree.

We identified the following functionalities as basic common requirements for most users. These are the functions every Vizier user will get.

1. Communication (phone, mailing, messages, …)
2. Internet services (like Facebook, Google, …)
3. Agenda
4. Reminders (medication)
5. Pictures

From the personas we were able to group the other potential functionalities under themed groups, see Figure 6. This supports the idea that people could gradually extend their Vizier as their needs evolve. This configuration scheme will serve as input to define the scope of our pre-trial demonstrator.

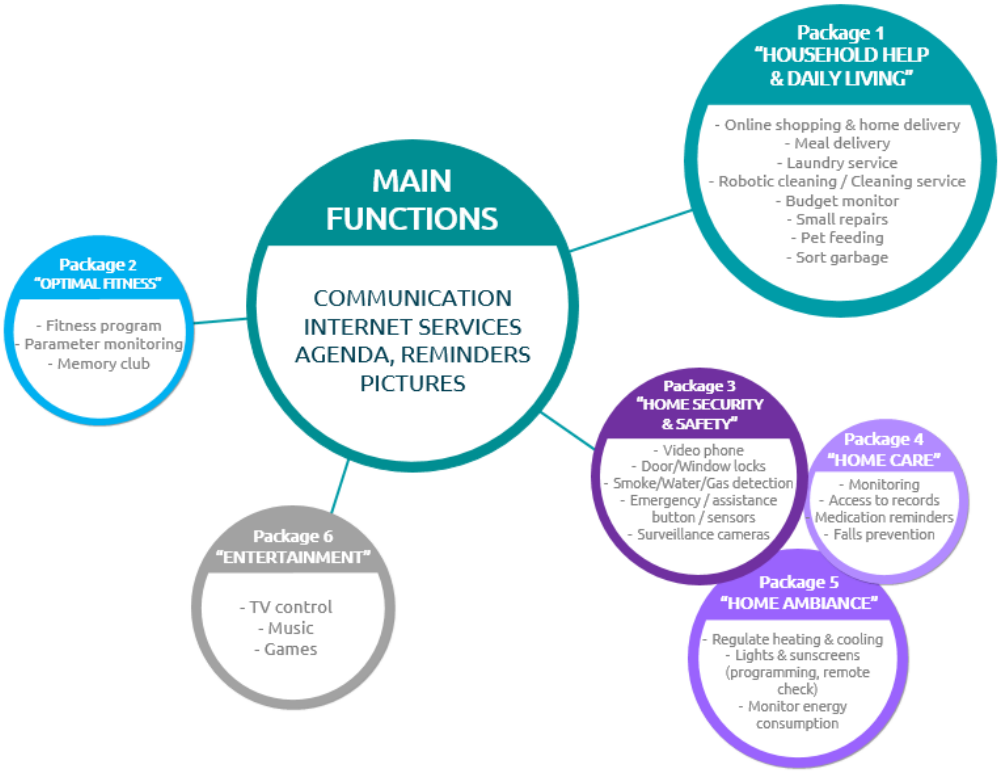


FIGURE 6 CORE VIZIER AND PROPOSED THEMATIC "PACKAGES"

6.2 Meeting the user needs

Building the 'jobs-to-be-done' part of these use cases, confirmed that a user friendly Vizier solution will meet actual user needs supporting them to improve the management of their daily life and to stay mentally, physically and socially active and ensuring their safety and wellbeing.

The following functions have been confirmed to be important by the combination of surveys and use cases and were recommended to be included in the pre-trial demonstrator if feasible from a technical point of view:

- (Medication) reminders
- Memory training
- Tips for local activities
- Physical activity promotion and tracking

6.3 User profiles for the (pre-) trial

For the development of our solution, we decided to focus on the basic functions and the 'optimal fitness' package (Figure 6). As this represents a focus on people with a low to medium dependency on care.