

D2.1 [Co-design and Requirements Analysis]



**Personalized platfOrm aSsisting senlors in healThy, fulfilled and active
lifE**

Project No.	AAL-2018-2-118
Project Acronym	POSITIVE
Start date (duration)	01/05/2019
Deliverable Leader	ESKILARA
Contributors	FSL, AAIF, REALL, MAGG
Deliverable No.	2.1
Deliverable Title	Co-design and Requirements Analysis
Dissemination level	PU
Status	Final
Version	5

Copyright © AAL-2018-2-118 POSITIVE Consortium

This document is proprietary of the POSITIVE Consortium. Neither this document nor the information contained herein shall be used, distributed or communicated, in any form or by any means, without the prior written consent of the POSITIVE Consortium.

Delivery date	December 2019
----------------------	----------------------

Revision History

Revision	Date	Organization(s)	Changes
Draft1	22-07-2019	ESKILARA	First version of the users' questionnaire and methodology
Draft2	26-08-2019	ESKILARA	Integration of partners' inputs
Draft3	28-08-2019	AAIF	Guidelines and questionnaire for the semi structured questionnaires
Draft4	14-10-2019	MAGG	Corrections
Draft5	09-01-2020	ESKILARA	Conclusions included
Final	07-02-2020	ESKILARA	Final version with Italian focus group results included
Final	12-02-2020	REALL	Partner review
Final	18-02-2020	MAGG	Partner review
Final	13-03-2020	ESKILARA	External partner
Final	31-10-2020	ESKILARA	Update of the deliverable with Pilot Operations Phase 1 preparation
Final	16-11-2020	REALL	Final Partner Review
Final	16-11-2020	MAGG	Final Partner Review

Executive Summary

This deliverable analysis the user needs and requirements during the “Design and requirements confirmation” evaluation phase that will help the design of the different modules of POSITIVE solution as well the needs and requirements for the Pilot Operation Phases 1 and 2.

The document includes the methodology defined by FSL, AAIF, REALL and ESKILARA as well as the description of the target users recruited for the Focus Groups. The questionnaires and the interviews included in the document are oriented to these target groups.

Finally, the determination of user needs is summarised in the conclusions chapter, based on the results of the overtaken questionnaires (structured and semi-structured questionnaires) and mockups presentation to the target users by the end users organizations, which will also help POSITIVE partners to evaluate the usability of the foreseen solution.

Table of Contents

LIST OF FIGURES	5
LIST OF TABLES	5
ABOUT THIS DOCUMENT	6
3.1 ROLE OF THE DELIVERABLE	6
3.2. RELATIONSHIP TO OTHER DELIVERABLES	6
INTRODUCTION	7
4.1. SCOPE AND OBJECTIVES	7
USER NEEDS AND METHODOLOGY	8
5.1 USER RECRUITMENT PROCESS	9
5.2 STRATEGY OF SHOWING THE PROJECT TO PARTICIPANTS	10
USER QUESTIONNAIRES AND INTERVIEWS WITHIN THE “DESIGN AND REQUIREMENTS CONFIRMATION” PHASE.	11
6.1 METHODOLOGICAL STRUCTURE	11
SURVEY FOR USERS’ REQUIREMENTS ANALYSIS	19
7.1 ETHICAL ASPECTS OF GATHERING PERSONAL DATA	19
USER QUESTIONNAIRES AND INTERVIEWS WITHIN THE “PILOT OPERATION PHASE 1”	31
8.1 METHODOLOGICAL STRUCTURE	31
8.2 PILOT OPERATIONS PHASE I PREPARATION	31
8.3 STRUCTURED QUESTIONNAIRES	34
8.4 SEMI STRUCTURED INTERVIEWS	36
END-USER REQUIREMENTS FROM PREVIOUS PROJECTS	37
EXPLORATORY WORK	38
UPDATES ON NEW SOLUTIONS FOR SENIORS	43
CONCLUSIONS	45
ANNEX 1	48
ANNEX 2	51
REFERENCES	55

1. List of Figures

Figure 1: The phases of identification of User Needs. Page 8

Figures 2 – 7. Mock up screen shots. Pages 16, 17 and 18

2. List of Tables

Table 1. List of deliverables related to D2.1 Codesign and Requirements Analysis. Page 6

Table 2. Pilot I Preparation. Page 33

3. About this Document

3.1 Role of the deliverable

This deliverable will try to analyse the user needs and requirements during the “Design and requirements confirmation” evaluation phase. Once the methodology is well defined, the target user groups are described. The questionnaires and the interviews are oriented to these target groups. The determination of user needs is practically based on a questionnaire survey and mockups presentation to the end users by the end users organizations, which will also help us evaluate the usability of the foreseen solution.

3.2. Relationship to other deliverables

The deliverable is related to the following POSITIVE deliverables:

Deliverable	Relation
D2.2	Report on End User Recruitment and Mobilization
D2.3	System architecture and Technical Specifications
D4.1	Validation and Demonstration Planning
D4.2	Pilot Operation Summary Report
D4.3	Evaluation Report

Table 1. List of deliverables related to D2.1 Codesign and Requirements Analysis

4. Introduction

4.1. Scope and Objectives

The POSITIVE Project should define specific target users and investigate their needs in order to understand at best how to satisfy them. POSITIVE project is aiming at different target user groups within the elderly. Their needs should be identified for each one of these target user groups, since they have different needs. This means a survey will provide information that will be helpful to define the market and, therefore, for the project implementation and exploitation.

This deliverable will try to analyse the user needs methodology process and its phases. Once the methodology is well defined, the target user groups are described. The questionnaires and the interviews are oriented to these target groups. The determination of user needs is practically based on a questionnaire survey and mock-ups presentation to the end users by the end users' organizations, which will also help us evaluate the usability of the foreseen solution.

Research objectives are:

1. Capitalizing on transferable results from previous successful AAL projects that can really add value to the present users' requirements analysis. The AAL projects are:
 - MyMate
 - CarerSupport
 - Sociable
 - Give & Take
 - TSBank
 - SeniorTV

There is also some exploratory work done in these projects that could indicate the direction of further studies.

2. Research on users' requirements based on the assessment of the characteristics of real needs as well as identifying their expectations and preferences even together with unconscious determinants of the decision making process.

Qualitative and quantitative research using tools like questionnaires, focus groups interviews are used to gather data considered relevant to explore ideas and develop the POSITIVE solution.

5. User needs and Methodology

The methodology of identifying the user needs can be divided in three phases. These three phases are illustrated in Figure 1.

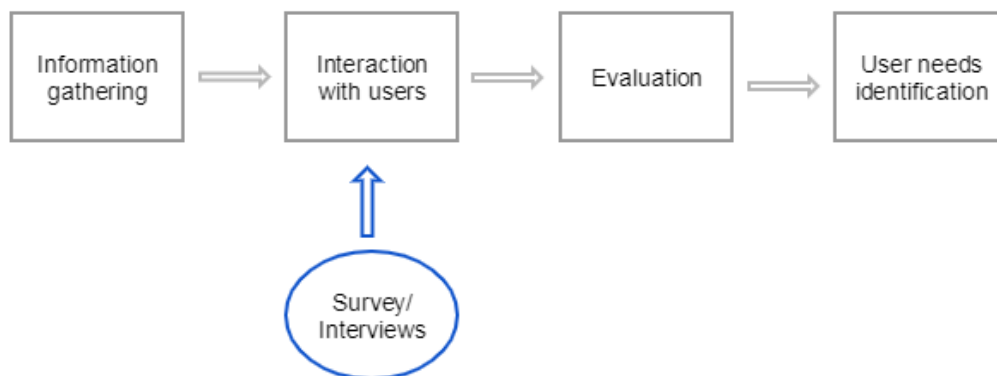


Figure 1: The phases of identification of User Needs

The first one is the phase of Information Gathering. In order to identify the user needs, a lot of information should be taken into account. The user requirement analysis starts from the analysis of past AAL projects' results (MyMate, CarerSupport, Sociable, Give & Take, TSBank, SeniorTV), as well as basic exploratory work, which provides the basis for the POSITIVE project.

The POSITIVE user community, according to the user needs methodology, is represented by:

- Primary end-users: active seniors between 55 and 75 years old, not immobile and who do not suffer from any physical or mental disability.
- Secondary end-users: family members, formal and informal care persons, friends and care organizations.
- Tertiary users: associations, NGOs, commercial partners, healthcare providers, local municipalities and senior clubs/centres

The researched group will also cover users with no Internet experience to gather insights regarding the ease of use of POSITIVE.

Since the organizations Ana Aslan International Foundation, Fondazione Santa Lucia, Reall and Eskilara represent different groups in the aforementioned target user categories, they will be leading the interaction with users, which will be achieved via questionnaires and interviews. The following strategy applies:

- Preparation and circulation of structured questionnaires: appropriate questionnaires to be drafted addressing a specific beneficiary group (primary users). The different questionnaires will be available either online and offline in order to be supervised during the interviews.

- Semi structured Interviews: Most interviews will take place with primary end users. The interviews will address a wide range of topics regarding accessible design, usability, practicality and development of the POSITIVE solution. Particular problems in these areas will be documented and passed to POSITIVE partners for further analysis and consideration for inclusion in the project User needs and system requirements. All of the interviews will be semi-structured, with a focus on loneliness issues to be highlighted by interviewees, but with the questionnaires as a basis.

The main advantage of the questionnaires and interviews is that the users themselves will have the opportunity to contribute to the co-design and co-development of the POSITIVE solution by testing and answering different questions addressing their needs and requirements.

Thus, the evaluation phase that will be performed after the collection of questionnaires and interviews data, it will address the user needs that will feed into POSITIVE's final requirements and architecture definition.

5.1 User recruitment process

The description of the user group is very important. The group is recruited on a voluntary basis, people who mainly do not know each other but are able to share their experiences and express their opinion and they are asked to offer their insights about the POSITIVE solution.

The segmentation criteria gives the group certain homogeneity, having the same demographic characteristics. The platform is designed for the specific needs of a certain/given target group.

The selection criteria are: age, status of health and technology usage level. Whereas gender, place of origin and certain level of education though they are aspects taken into consideration when analyzing the results, they are not exclusive criteria.

Therefore, before initiating the requirements analysis, partners agreed on the following aspects:

- The target groups of the evaluation: elderlies between 55 and 75 years, with two groups of age range: 55-65, 66-75 years old.
- According to health status, the target group is formed by healthy people with minor health problems and/ or disabilities and independent.
- The size of the sample:
 - 30 structured questionnaires (9 per Ana Aslan International Foundation, 9 per Fondazione Santa Lucia, 9 per Eskilara and 3 per Reall) and, in the case of the semi structured interviews, there will be between 4-5 interviews within each of the 3 pilot countries and 2-3 interviews for the Polish participants within the "Design and requirements confirmation" phase during M5.
 - During Pilot Operations Phase I 60 Primary End Users and 10 Tertiary End Users were recruited among the 4 countries participating. A detailed description of

the size of samples needed for each tool within the pre-test and post-test is described in Annex 2, which corresponds also to Table 2. Tools for analysis, within D4.1 Validation and Demonstration Planning.

5.2 Strategy of showing the project to participants

Contacting & Motivation Manipulation:

- **First Contact:** Small details make a difference when it comes to contacting seniors. In order to distinguish ourselves from the overload of promotional materials everybody is flooded with, we decide to take a more personalised approach. In Positive AAL each person is not a figure. Everyone is an individual with an opinion and a different perspective, carefully noted by our team and taken into account while creating the platform. Guided by this, we start from a preliminary contact via personalised emails. Every email is written to the person, explaining which feedback we appreciate and why. This helps with creating a more meaningful interaction when everyone feels included, listened to and powerful enough to make an impact on the final look of the platform.
- **Appreciation:** After fruitful cooperation seniors are thanked for their participation and a summary is shared with them to sum up and present the results of the meeting. Emails also encourage everyone to follow us on our website and social media to remain informed and engaged in Positive AAL's progress.
- **Staying in touch:** Reporting the current progress, being active on social media and creating engaging content is a must if the enthusiasm about the project is to remain. Regular posts, updates and other content is constantly updated and monitored by our team.

Report outlining strategy of showing the project to participants:

Delivering a message to a larger number of people with the intention of attracting their attention requires a structured framework not only to manage to do it in a reasonable time frame but also to actively engage potential participants in the future cooperation e.g hands-on pilot testing.

Hence, in Positive AAL while introducing the project we follow several steps:

- **Introduction:** In Positive AAL we believe that human capital is our most valuable asset, thus in order to gain seniors' trust, we begin our interaction with some ice breakers to prove that we are humans just like them. Small talk regarding simple topics, information about the surroundings and refreshment helps with creating a casual, friendly atmosphere. Most of the participants treat these meetings very seriously and dress properly, thus Positive representatives should dress accordingly as well. The importance of such seemingly irrelevant elements is great, which is especially true when dealing with elders.
- **Schedule:** In order to smoothly conduct the meeting, a proper schedule is needed. Its short version can be found in the invitation letter (email), more detailed description is

presented on the spot. We respect each other's time and understand that some people might be willing to leave early without missing the most important parts.

- **About the project:** Volunteers cooperating with Positive AAL come from numerous organisations and have been recruited at different occasions, therefore it is crucial to remind everyone what this project is about, what has been accomplished, problems we're dealing with and other necessary information to make them feel a part of our initiative working towards the same goals.
- **The main part:** In this section, the core part of the meeting takes place e.g. surveying, hands-on pilot testing, etc. Seniors must be informed about each part with due diligence so that they clearly understand every part of what they are doing. Transparency is one of our domains.

6. User Questionnaires and Interviews within the “Design and Requirements Confirmation” Phase.

6.1 Methodological Structure

In order to obtain adequate information of user needs and requirements, the POSITIVE project will define surveys based on the classical methods of empirical social research, especially on the methods of User Centered Designs such as structured and semi-structured user questionnaires.

6.1.1 Structured questionnaires

Structured questionnaires have the great advantage that a huge number of people can be consulted and the costs of realization and analysis are low, especially by using closed questions. Furthermore, it is easy to draw comparisons and generalizations and the criteria of objectivity and reliability can approximately be fulfilled. The disadvantage of this method, primarily lies in

the fact that the interviewees are obligated to answer given questions with the already given possible answers – the criterion of validity needs to be assured. Using this method the researcher who is going to evaluate the system must already know the system quite well. The effort therefore is to formulate the right questions and choices of answers.

In the case of the evaluation of POSITIVE, it is intended to use an offline survey with 30 end users (as indicated above) during the mock up phase evaluation. Subsequently, the questionnaires will be designed on the basis of discussing the following topics:

- Contents: Which questions must be raised; which information must be gathered?
- Scope: Which scope (number of questions) is reasonable?
- Time and procedure: How much time do we have for the survey?
- Target group: Are the target groups/the sample known?
- Sequence: How are the questions ordered, e.g. demographic questions at the beginning or at the end?
- Types of questions
- Variety of questions
- Open-ended questions
- Close-ended questions
- Matrix
- Dichotomy
- Demographic questions
- Question tendencies/control questions
- Comments
- Instructions for interview partners: Who conducts the interviews? Phrasing of concrete instructions and explanations for the interviewee.
- Feedback

The aforementioned is the basis for the development of a standardized questionnaire for primary end users in order to determine special users' needs. With a view to the statistical analysis, the questionnaires contain close-ended as well as hybrid questions.

Questionnaire categories that have been selected by POSITIVE are:

- Demographic data: Required to identify significant connections between age and IT needs.
- Comprehension of loneliness: Required to develop ontology and identify similarities and differences within the EU. It is assumed that information gathered on this topic correlates with the user requirements for an assessment tool.

- Expectations: Required to identify user needs which the user himself/herself might not be aware of.
- Information on user behaviour on the internet (mobile devices and PC): Relevant for a possible market analysis
- Assessment tool: Direct survey of user needs.

In order to meet classification specifications (completeness, exclusivity, unambiguity) we will present the questions as a matrix as well as in lists with dichotomous and multiple response options. It is also necessary to use hybrid questions in addition to close-ended questions if we have to assume that the answer categories are incomplete or if we need/want to be aware of national and cultural specifics. We include a “Don’t Know” option for all questions in order to minimize potential uncertainties by the interviewee as well as to reduce the amount of missing values during statistical evaluation.

6.1.2 Semi structured questionnaires

Semi structured interviews, on the other hand, will allow us to gather focused and qualitative textual data. This method will offer to the POSITIVE project a balance between the flexibility of an open-ended interview and the focus of the structured questionnaire that end-users will undertake.

A set of guidelines have been defined for conducting focus groups interviews following the semi structured method:

1. **Who?** - Potential primary end users of POSITIVE will be the interviewees.
2. **How many participants?** – Minimum of 6 to 12 participants per end user organization per country. That is, in total maximum 36 interviewees in the 3 countries.
3. **Why?** – The objectives of the focus group interviews will be:
 - To involve primary end users in the co-design from the early stages of POSITIVE
 - to gather more in-depth information about their needs, preferences and requirements related to the proposed solution
 - To collect information about their attitudes toward technology use and future adoption
4. **How?** – Preferred method of collecting data: **focus group interviews that will be semi structured**

Basic structure of the focus group interviews:

1. **Welcome + brief introduction** – The interviewer welcomes participants and describes the objectives of the focus group interview. That is, participants are provided with information regarding the purpose of the meeting, given an explanation of how the

interviewees were chosen to participate as well as how the information from the interview will be used in the future. Pointing out the significance of this interview for the future development of POSITIVE is important.

2. **Informed consent + demographic information** – The interviewer has to collect the signed and dated informed consent from all participants prior to the beginning of the session (Annex 1). Then, he/ she collects the necessary demographic data on the interviewees. Gathering demographic data from interviewees is beneficial for the POSITIVE's consortium because it will give a clear description of the focus group participants. The demographic data should include: **age, gender, education status, living status, and socio-economic status**. By living status, we mean a multiple-choice question like:

What is your living status? Choose one answer only.

- I live alone
- I live with spouse/ partner only
- I live with spouse/ partner and other family members
- I live with other members of my family
- I live in a retirement home
- Other – please specify:

Identifying the living status is important because people who live alone are prone to loneliness.

Data related to the **socio-economic status** of the participants will also be included because it is an important influencing factor on decision making and access to technology. People with lower socio-economic status (poor people) have limited or no access to technology, internet at home and modern devices such as tablets and smartphones. This is one of the reasons why they belong to one of the vulnerable groups that are affected by the digital divide nowadays.

3. **Confidentiality** – Interviewees might have concerns regarding the confidentiality of their answers. Therefore, prior to the beginning of the session, the interviewer has to assure respondents that their replies will be kept confidential. That is, the interviewer and the other members of the evaluation team will know who the interviewees and what their answers are, but they will not reveal them to anyone. No identifying information will be given without their permission.
4. **Recording responses** – Responses can be documented in various ways i.e. digital audio recording, video recording, handwritten or computer written notes. If digital audio or video recording is used, each interviewee must agree to the recording in advance. The best option is the combination of digital audio recording and taking notes, if this is possible. Digital audio recording is a good way to prevent summarizing or paraphrasing

participants' responses. 'Summarizing or paraphrasing a response results in a loss of information and can distort the interpretation of the interview data, since the summarized response obscures the interviewee's own answer' (Russ - Eft and Preskill, 2009)

5. **Refreshments** – It might seem obvious and logical to some but it is good not to forget that some refreshments need to be provided before and during the session.
6. **Rules for group discussion** – Clarifying and agreement on some basic rules for discussion are important in ensuring a relaxed and friendly atmosphere. These rules might include: confidentiality (whatever is said here, stays here), freedom of expression (the right to express your opinions/ views freely whatever they might be), respect to other people's opinions and open-mindedness, there are no right or wrong answers (just answers).

Suggested structure and questions to be followed during the semi-structured interview:

0- Warm-up questions

- How is your typical day structured?
- Are there any aspects/behaviours in your lifestyle you would be willing to change/improve? If yes, which ones?

1- Technological literacy

- Which technological devices/services/apps do you use?
- What is the most frequent purpose of using such technological devices/services/apps?
- What type of communication tool do you prefer to contact your relatives and friends?

2- Attitudes toward technology

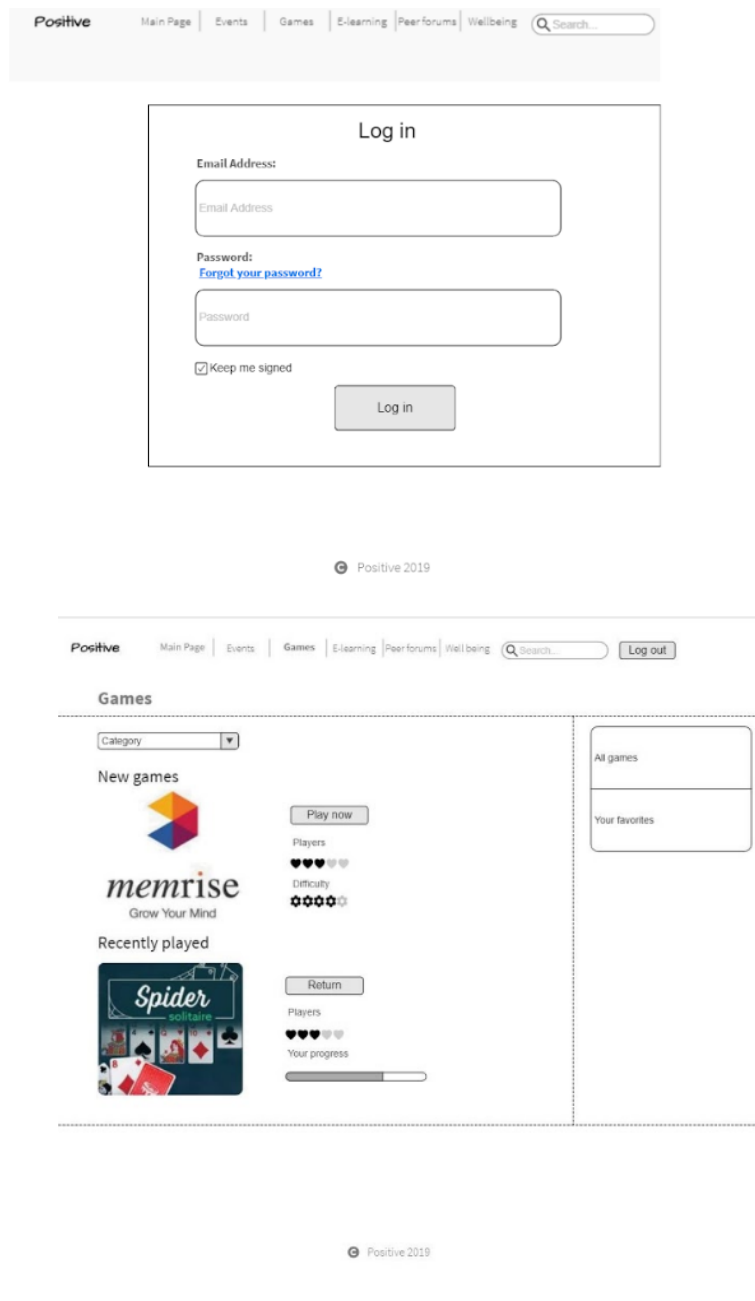
- In which situations do you feel the need to use some specific devices/services/apps?
- Are the current available devices/services/apps appropriate for your needs?
- Would you like to use other or better devices/services/apps? If yes, what kind of devices/services/apps should be?

3- Current inclination toward POSITIVE

- Would you like to use a digital platform with an integrated event facilitation and content part?
- Do you use reminders?
- Do you feel that notifications/reminders should be better "personalised"? How?

Finally, in between the semi-structured interviews, a first version of the POSITIVE mock-up will also be presented to participants in order to have a first feedback and initial validation of the

project solution to be developed in the following months. Attached different screenshots of the mock-up to be presented to target users:




Positive Main Page Events Games E-learning Peer forums Well-being [Log out](#)

Events

Choose the city

Warsaw, Friday 2




ARGENTINE TANGO
Friday, November 2 & 10

7 people going

[Attend](#)

Warsaw, Tuesday 13



POTTERY WORKSHOPS
Brick-It-Up-And-Mixology

10 people going

[Attend](#)

Didn't find what you were looking for? Create your own event!

[Let's start!](#)

All upcoming events

Your events

Create an event

September 27, 2019

Su	Mo	Tu	We	Th	Fr	Sa
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30					

Category

- ☒ Sport
- ☒ Art
- ☒ Cooking
- ☒ Travel
- ☒ Science

© Positive 2019

Positive Main Page Events Games **E-learning** Peer Forums Well-being [Log out](#)

E-learning

Course 1

[Enter](#)

Tag: sport

Course 2

[Enter](#)

Tag: health

Course 3

[Enter](#)

Tag: leisure

Course 4

[Enter](#)

Tag: food

My courses

Course 1 ~

Course 2 ~

Course 3 ~

My credits

★★★

My documents

Document 1

Document 2

Document 3

Positive

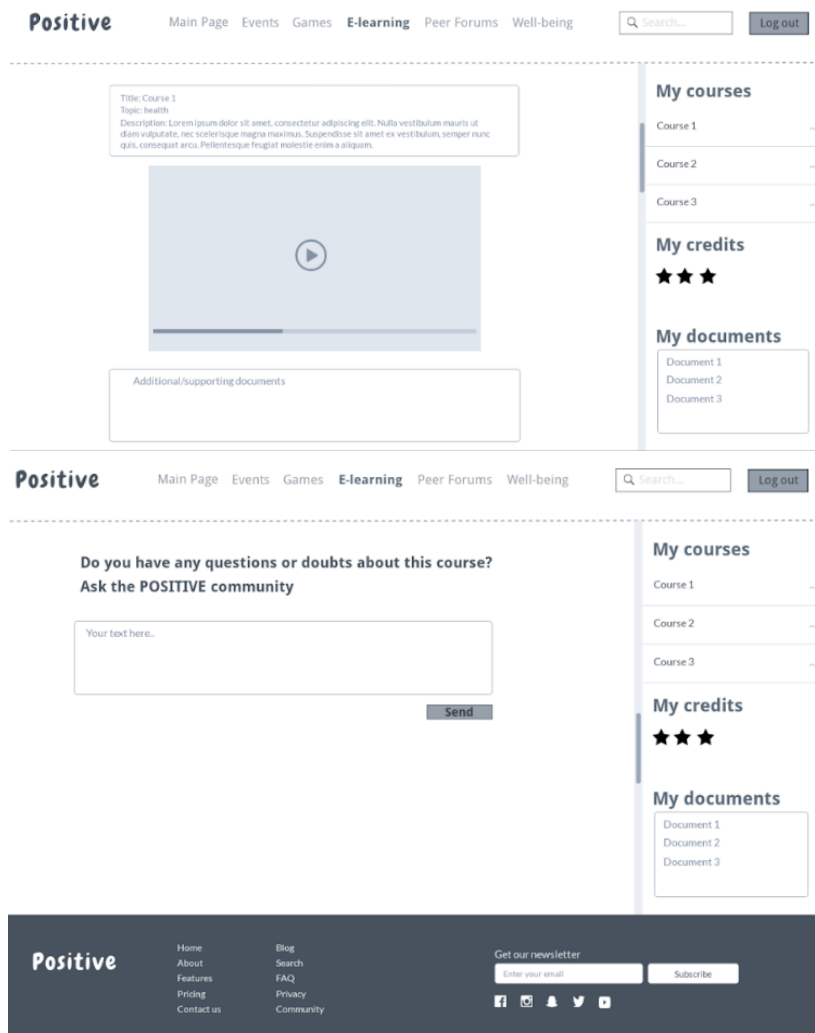
Home
About
Features
Pricing
Contact us

Blog
Search
FAQ
Privacy
Community

Get our newsletter

[Subscribe](#)

[f](#) [t](#) [in](#) [y](#) [p](#)



Figures 2-7. Mock up screen shots

7. Survey for users' requirements analysis

7.1 Ethical aspects of gathering personal data

POSITIVE consortia will pay particular attention on ethical aspects of gathering personal data. Therefore, all personal data gathered from data subjects will be protected by adopting the following measures:

1. **Pseudonymisation** - Pseudonymisation will be used in personal data processing. That is, personal data such as name and surname, age, education level, living status of our data subjects will be collected and kept separately from the project's findings. Data will be handwritten in a notebook that will be stored in a safe. Coding i.e. unique identifiers will be used for the recording of our users' responses and results. Thus, the personal data will no longer be attributed to a specific data subject. In all computer files, participants will be referred to by a code that cannot identify them. When personal data is stored in a computer file, the file will be protected by a password. All computer files should be stored only on secure equipment.
2. **Informed consent** – End user volunteers will be recruited only after they have been thoroughly informed about the project. Then, a written informed consent has to be signed by every project participant. Researchers will explain to project participants what POSITIVE project is about, what their participation in our project will entail as well as any risks that may be involved. Detailed information about POSITIVE will be provided to future participants and only after they have fully understood it, their express permission to include them in our project will be obtained by signing the informed consent form.

The informed consent must contain the following information:

- Explanation of the purposes of the project, objectives and methodology of current research to be conducted
 - Who will conduct the study as well as the other people who will be present;
 - Who will have access to the participants' data;
 - Where and how long data will be stored;
 - Anonymity and confidentiality
 - A statement offering the participant the opportunity to ask questions and to withdraw at any time from the project without consequences
3. **Withdrawal** – The end user volunteers are entirely free to withdraw from the Project at any time. Explanation of their withdrawal is important for the project management and the research but it is up to the end user volunteer to provide it or not.

4. **Transfer of data** – Particular care should be taken on security issues if files are transferred between partners for analysis. This should be undertaken using secure means and the transferred data should not include any personal identification.

7.2 Structured Questionnaire

According to the above described methodology, the POSITIVE consortia has defined a questionnaire with a list of questions to be answered by the selected end-users during the Design and requirements confirmation phase that will be conducted at the end of M5 by the end user organizations.

The aim of the questionnaire will be to gather information from the end users about specific needs regarding the POSITIVE platform, the expected utility and the usability of the solution for its early design and potential future needs end users may have.

Questionnaire:

Q1: Gender

☐Female ☐Male

Q2: Please, select your age range

☐55-65 years old ☐66-75 years old

Q3: Please, select your country of origin

☐Italy ☐Poland ☐Romania ☐Spain ☐Other (Please, specify:_____)

Q4: Please, specify the highest degree or level of school you have completed

☐Primary education ☐Secondary education ☐Post-secondary non-tertiary education ☐Tertiary education ☐PhD

Q5: Do you use a smartphone?

☐Yes ☐No

Q6: Do you use any of these other technological devices?

☐Tablet ☐PC

Q7: What is the most frequent purpose of using them?

☐Calls ☐Texting ☐Entertainment ☐Information (news, updates, weather forecast, etc.) ☐Social Media ☐Playing games

Q8: How often (on average) do you use your phone/smartphone for writing text messages (SMS, Whatsapp, Telegram, etc.?)

☐Every day ☐2-3 days ☐4-5 days ☐Rarely ☐Never

Q9: How often (on average) do you use your phone/ tablet/ PC for writing posts on social media (like Facebook, Twitter) per week?

☐Every day ☐2-3 days ☐4-5 days ☐Rarely ☐Never

Q10: How often (on average) do you use your phone/ tablet/ PC for reading others' posts on social media (like Facebook, Twitter) per week?

☐Every day ☐2-3 days ☐4-5 days ☐Rarely ☐Never

Q11: Do you have anyone to help you with a smartphone, internet or any application?

☐Yes ☐No

Q12: Do you have Wi-Fi internet access at home?

☐Yes ☐No

Q13: Are you willing to participate in a project which implies the installation of a specific application (POSITIVE solution), sharing of personal data (previous authorization), etc?

☐Yes ☐No

Q14: Are you in touch with your relatives?

☐Yes ☐No

Q15: If you have answered Yes to the previous question, how often do you hear from your relatives?

☐Every day ☐On a weekly basis ☐On a monthly basis ☐Rarely ☐Never

Q16: Do you have friends with whom you have relationship with?

☐Yes ☐No

Q17: Are your friends available whenever you need them?

☐Always ☐Rarely ☐Very rarely ☐Never

Q18: How many acquaintances do you currently have?:

☐1-5 ☐5-10 ☐10-15 ☐15-30

Q19: How often do you socialize with friends?

☐Every day ☐On a weekly basis ☐On a monthly basis ☐Rarely ☐Never

Q20: How do you usually socialize with friends? Check all that apply

☐By speaking on the phone ☐By meeting them in person ☐By going to events for seniors ☐By sending them messages over the phone/tablet/PC ☐Other _____

Q21: Do you miss the pleasure of company of others?

☐Yes ☐No

Q22: Do you have a close friend?

☐Yes ☐No

Q23: Do you miss having a really close friend?

☐Yes ☐No

Q24: What kind of interests do you currently have? Check all that apply

☐Doing sports/physical activities ☐Cooking ☐Cultural activities ☐Reading books ☐Watching movies ☐Gardening ☐Healthy lifestyle ☐Singing/acting/performing art ☐Painting ☐Music ☐Other _____

Q25: Do you look for people who enjoy the same activities as you?

☐Yes ☐No

Q26: Do you prefer acquaintances that motivate or inspire you?

☐Yes ☐No

Q27: Would you like to receive notifications about possible events around you area that could match you interests?

☐Yes ☐No

Q28: Would you like the application to run without sending you any messages or notifications?

☐Yes ☐No

Q29: In a few words, how would you define loneliness?

Q30: Have you ever experienced loneliness?

☐Yes ☐No

Q31: How often have you experienced loneliness for the last two months?

☐Every day ☐Quite often ☐Often ☐Rarely ☐Very rarely ☐Never

Thank you for your collaboration.

If you want to provide any further information or comment, let us know

7.3 Focus group interview

After the questionnaire detailed in 4.2 is done by primary end users, there will be between 4-5 focus group interviews within each of the 3 pilot countries and 2-3 interviews for the Polish participants during which they will take part in the semi-structured interviews, following the methodology described in 3.2.1.2. For that aim, primary end users will be divided into two groups depending on their level of technology experience.

The overall objectives of this focus group interview are:

1. To provide information about the current usage of new technologies such as devices, services and apps by the primary end users (their current technology adoption);
2. To clarify what end users' current attitudes toward using technology are;
3. To determine what their current inclinations are towards the solution proposed by POSITIVE;
4. To identify their needs, requirements and expectations toward POSITIVE.

Questionnaire to be filled in after the focus group interview

The following questionnaire should be completed by all participants in the focus group once the discussion has finished. Furthermore, this questionnaire can be shared with other primary end users not present at the focus group meetings.

Part I. Socio-demographic data:

1. **Name:**
2. **Age:**
3. **Gender:** Female Male

4. Educational level – please select only the highest level achieved:

- ☐ High-school
- ☐ Professional school
- ☐ Superior studies (university)
- ☐ Post-university studies
- ☐ Other – please, specify:.....

5. Living status – choose only one answer:

- ☐ Alone
- ☐ With spouse only
- ☐ With spouse and other family members
- ☐ With other members of my family
- ☐ In a retirement home
- ☐ Other – please specify:

6. What is your monthly income (e.g. pension, rent, other financial help)?

- ☐ Below 800 RON (Spain: below 500€)
- ☐ Between 800 and 1,200 RON (Spain: Between 500 and 1,000€)

- ☐ Between 1,200 - 2,000 RON (Spain: Between 1,000 and 2,000€)
- ☐ Over 2,000 RON (Spain: Over 2,000€)

Part II. POSITIVE platform

Q1: Do you understand the POSITIVE concept? Please, check only one.

- ☐ It is clearly articulated and I understand the purpose of the solution
- ☐ I understand the main points of the POSITIVE concept
- ☐ I am not entirely clear in terms of my understanding of the concept

Q2: What is your view of the POSITIVE idea (particularly in relation to the idea of using a digital platform for the integrated features offered)? Please, check only one.

- ☐ I feel comfortable about the POSITIVE idea and would be happy to benefit from such a service
- ☐ I have mixed feelings about the POSITIVE idea and feel I would need more information
- ☐ I am not comfortable about the POSITIVE idea and would not consider it
- ☐ Other _____

Q3: The POSITIVE platform will have 2 main parts i.e. physical events and content parts. What type of events would you be most interested in receiving information on a daily basis? Please, check all that apply:

- ☐ Events organised by senior clubs in my region
- ☐ Events organised by healthcare providers in my area
- ☐ Diverse courses for seniors organised by NGOs/ educational institutions that are available in my region
- ☐ Local and/ or national social events organised by local municipality authorities
- ☐ Charity projects I could take part in
- ☐ Volunteering opportunities for elderly people
- ☐ Excursions/ trips for seniors
- ☐ Educational courses/ educational opportunities provided by senior clubs in my town
- ☐ Cultural/ musical/ artistic events that are held in my area
- ☐ Festivals in my town
- ☐ Concerts in my region
- ☐ Other - Please, specify:

Q4: What types of services would you prefer to have access to in the POSITIVE platform? Please, check all that apply.

- ☐ Weather forecast
- ☐ Calendar
- ☐ Daily horoscope
- ☐ Public transport schedules
- ☐ Maps with the routes of public buses/ trams/ metro
- ☐ Google Maps
- ☐ Taxi apps such as Uber, Bolt, Yango
- ☐ Local and national news feed
- ☐ Games (Solitaire, puzzle, memory etc.)
- ☐ Pharmacy offers e.g. special deals on sanitary products/ medicines etc.
- ☐ Other - Please, specify:

Q5: The POSITIVE platform will have a development corner. In this regard, what type of e-learning courses might you be interested in? Please, check all that apply.

- ☐ Cooking courses
- ☐ Health related courses
- ☐ Healthy lifestyle
- ☐ Food and eating
- ☐ ICT (computers and Internet)
- ☐ Gardening
- ☐ Other - Please give details
.....

Q6: The POSITIVE platform will have an 'Action corner'. The Action corner will be a place to gather together online for common initiatives, events, as well as focus on and discuss topics that users are passionate about. How do you think that expressing your opinions online and sharing them with other peers will be of benefit to you?

- ☐ It will help me find new friends
- ☐ It will make me feel more important
- ☐ It will make me feel appreciated by others
- ☐ It will make me feel part of a community of like-minded people

- ☐ It will make me feel less lonely
- ☐ It will not make an actual difference in my life
- ☐ It will make me feel as an active agent i.e. as if I am in control of the things happening in my life
- ☐ It would not benefit me in any way
- ☐ Other - Please, give details

Q7: How willing/ inclined would you feel doing the following activities online on the POSITIVE platform?

I would feel inclined to ...	Very Inclined	Somewhat Inclined	Not very Inclined	Not Inclined At All
1. Initiate online discussion with other users on a topic of common interest				
2. Freely express and share my personal comments and views in a group forum				
3. Share my practical ideas/ advice on a specific topic with others e.g. removing stains, cooking a dish, staying healthy				
4. Initiate an offline event for users e.g. going to a concert together, attending a local festival etc.				
5. Create an online interest group for users e.g. a reading club, movies club, music club				

Q8: The POSITIVE platform will have 'Your state corner' in which users will get information about their health. What features would you consider important and useful for your health and well-being? Please, check all that apply.

- ☐ Reminders for taking medicines
- ☐ Reminders for measuring blood pressure
- ☐ Reminders for physical activity
- ☐ Tracking measures
- ☐ Reminders for going outside i.e. fresh air intake
- ☐ Recommendation for healthy eating
- ☐ Reminders for regular doctor's visits
- ☐ Direct connection to healthcare centres
- ☐ Other - Please, give details

Q9: Can you think of any other features that are not included in the POSITIVE platform but might be important for you to have?

Please, describe what you consider is really important for you and is missing right now.

.....

.....

.....

.....

Q10: What are the practical barriers that you might perceive would get in the way of you using a solution like POSITIVE plans to provide? (Please check all that apply)

- ☐ Preference for classical channels of getting informed
- ☐ Preference for traditional face-to-face interaction with other people
- ☐ Use of the technology (platform)
- ☐ Lack of access to technological devices such as a smartphone, PC, tablet
- ☐ Lack of access to the Internet at home
- ☐ Lack of assistance in the adoption of the platform (e.g. not sufficient personal assistance)
- ☐ Lack of motivation to adopt new technologies
- ☐ Lack of motivation to develop new habits
- ☐ Lack of trust in online interactions/ communication
- ☐ Other (Please, give details) _____

Q11: Would you be willing to pay for a solution like POSITIVE? (Please check all that apply)

- ☐ Yes, definitely
- ☐ Yes, I might be interest
- ☐ I don't know
- ☐ No, I am not interested
- ☐ No

Part III. Attitudes toward technology

The next set of questions concerns your attitudes toward technology. Technology is defined as new technical devices i.e smartphone, Smart TV, computer, mobile phone applications, laptop, tablet, online games, digital platforms. Please indicate whether you strongly agree, agree, disagree, or strongly disagree with each statement.

	STRONGLY DISAGREE	DISAGREE	AGREE	STRONGLY AGREE
COMFORT				
I feel comfortable with technology.				
Technology makes me nervous.				
I don't feel confident about my ability to use a technology.				
Technology is confusing.				

Technology makes me feel dumb.				
EFFICACY				
I know that if I worked hard to learn about technology I could do well.				
Technology is <i>not</i> too complicated for me to understand.				
I think I am the kind of person who would learn to use technology well.				
I think I am capable of learning to use technology.				
Given a little time, training and personal assistance, I know I could learn to use technology.				

Part IV. Technology usage

1. How often do you use the following services/ devices/ applications?

	1 Never	2 Rarely	3 Sometimes	4 Usually	5 Always
--	------------	-------------	----------------	--------------	-------------

Internet					
Desktop personal computer					
Laptop					
Conventional phone - no smartphone					
Smartphone					
Instant messaging (e.g. Whatsapp, Viber)					
Smart-TV					
Tablet					
Email					
Social networks, e.g. Facebook, Twitter, Instagram					
Mobile phone applications					

2. How comfortable are you with using digital platforms? Please, check only one.

- ☐ I feel very comfortable with using platforms
- ☐ I feel fine with platforms although I need to improve
- ☐ I do not feel particularly confident in using platforms although I have tried
- ☐ I do not use platforms but I am keen to learn
- ☐ I do not use platforms and I am *not* keen to learn
- ☐ Other (Please, give details)

8. User Questionnaires and Interviews within the “Pilot Operation Phase 1”

8.1 Methodological Structure

In a second phase, end-user organizations organized two iterations or phases, Pilot Operations Phase 1 being the first one. Initially, this first iteration was planned to begin in M11 (March 2020), and have a duration of 4 months. Nevertheless, due to the COVID-19 situation it was postponed to M18 (October 2020) and condensed to 1 month, with also particular adaptations according to each country pilot situation and restrictions.

As well as in the “Design and Requirements Confirmation” Phase, the Pilot Operation Phase 1 POSITIVE project made use of the already developed structured and semi-structured user questionnaires. All surveys and their type e.g. pre-test, post-test, are described in detail in D4.1 Validation and Demonstration Planning.

8.2 Pilot Operations Phase I preparation

Before organizing the pilot, a mapping of POSITIVE solutions against issues faced by PEUs was done with the aim of anticipating possible problems that users may face when testing the POSITIVE platform:

Issues Seniors Face	Our Solution (Positive AAL)	Comment
1. Mostly female participation in the events, difficult to engage male seniors	Male oriented topics - interest groups, typically more interesting for men	
2. Security concerns, how to assure their data is safe after registration	Abuse detection, Privacy policy, cookies policy, users as moderators	
3. Some seniors are a flash in the pan - they book events and never show up, blocking spots for others	Implementation of a small deposit, refundable once the event is attended to	The deposit might discourage those, who'd attend events without it
4. There's a wide variety of senior-oriented events, some of them are expensive, which discourages less financially fortunate participants.	Wide choice of events free of charge and basic features on the website	
5. Waiting List for TAU is usually long	Event organization by both organisations and seniors - greater number of the events, thus higher availability and shorter waiting lists	
6. TAU subject list is limited,	greater number of the events, more variety and rotation. Topics according to seniors' interests	

oftentimes topics remain unchanged		
7. Local senior-oriented structures tend to keep free of charge policy, which either forces the organizer (usually an active senior) to pay for the necessary items from his own pocket or give up on using them	Allowing seniors to chip in for the necessary items. Crowdfunding for seniors (more research needed)	There is a significant group of proactive seniors, who enjoy organising events but lack funding
8. Inclusion of the excluded - less digitally literate seniors don't have the opportunity to use the platform	Platform rewards those, who include others with points that eventually lead to higher level and display on the top members board on the main page.	

Table 2. Pilot I Operation

8.3 Structured questionnaires

In the case of the evaluation of POSITIVE, it was intended to recruit 18 primary end users per pilot country (Romania, Italy and Spain) and 6 primary end users in Poland. As described in D4.1 Validation and Demonstration Planning, the tools for analysis are:

- The UCLA 3-item Loneliness Scale
- Technology usage survey
- After Scenario Questionnaires
- System Usability Scale
- Socio-demographic survey
- WHOQOL-BREF
- KPIs

The aforementioned are questionnaires for primary end users that will be used to measure their technology literacy, loneliness levels, quality of life, usability of the platform in an attempt to access the actual effects and impact of the POSITIVE solution on them.

Structure of the Pilot Operations Phase 1 adapted to the COVID-2019 situation:

- **Spain** - Spain is one of the most affected countries in Europe with the COVID-19 pandemic. Restrictions have been periodically updated according to the infected rate of each region and/or municipality in Spain. What is more, taking into consideration that our PEUs are members or the at-risk group, ESKT's team decided to follow the guidance of the Ministry of Health and avoid physical training with participants. Therefore, each participant received the questionnaires via WhatsApp and was contacted afterwards to train them and go with them through the different questionnaires and expected tasks:

Informed Consent forms have been personally delivered to each PEU house and signed by each of them at their respective homes. A team member of ESKILARA then picked up the signed form following the and kept it in a safe place at our premises

The POSITIVE presentation prepared by Fondazione Santa Lucia (Annex 3), as well as a Google Forms survey with the questionnaires and the link to the platform have been sent to each participant via WhatsApp

A WhatsApp call has been organized with each PEU in order to train them and go with them through the different questionnaires when needed.

Weekly Whatsapp call have been also organized with PEUs in order to follow their activity and support them in case of facing any issues or problems

- **Romania** - AAIF used a proactive approach in the recruitment of PEUs. AAIF began recruiting senior volunteers in June 2020 i.e. 3 months in advance before the

actual testing. Our biggest fear was that we would not be able to obtain the informed consent from primary end users due to a possible lockdown and quarantine in the fall. 18 volunteers were recruited in Romania. Eventually, 6 Romanian seniors dropped out and did not test the platform in October. Another 6 new volunteers were recruited by AAIF in their place in September. All PEUs were informed about the project's objectives, duration and their involvement in it. Volunteers had the chance to ask additional questions about the project before deciding whether to take part in it or not. All participants read and signed the informed consent at our premises in the presence of researchers. They received a copy of it.

In total, 5 face-to-face training sessions for primary end users and 2 online training sessions for tertiary end users were conducted in Bucharest and Cluj-Napoca at the end of September. All Covid – 2019 safety measures were followed by volunteers and AAIF's researchers. On average, training seniors took 2 and a half hours. Training representatives of TEUs took half an hour. 2 researchers conducted the training for seniors in the spacious meeting room of AAIF's office.

7 tablets with Internet connection were given to Romanian volunteers by AAIF to ensure their participation in the project. In Romania, researchers called seniors weekly to check whether they had any difficulties in using the platform and if they needed any help with it. 4 additional meetings with 3 participants were held in order to solve the issues they reported.

- **Italy** - The Pilot Operation Phase One took place at FSL in three specific appointments arranged with 18 primary end-users. Two appointments were set the 1st of October 2020, one in the morning and the other in the afternoon, while last appointment took place the 5th of October 2020. Each session lasted approximately 3 hours and involved 6 primary end-users. Prior to the beginning of each session, all participants signed the written Informed Consent previously approved by the FSL Ethics Committee. Then, two persons with the role of “facilitator” (a researcher and a trainer) provided an overview of the POSITIVE project and gave participants the set of questionnaires detailed in D4.1. Validation and Demonstrating Planning. The researcher explained and showed to participants the components and functionalities of the POSITIVE platform on a computer screen. During the training session at FSL, all participants had the opportunity to familiarize with the POSITIVE platform using their own smartphones or tablets and they created a personal account. Another practical task was chosen for each participant from the list of six tasks detailed in D4.1. Validation and Demonstrating Planning. Each PEU was contacted weekly by phone call during the entire duration of the pilot testing in order to provide assistance in case of problems in the usage of the platform. Four TEUs

performed the training at FSL in separate appointments. Due to the worsening of the Covid situation in Italy, the post-testing questionnaires were filled in by phone call.

- **Poland** - The pandemic reality required additional time for each step of the pilot testing phase I. The PEUs and TEUs had been recruited from 2 to 6 months in advance. In order to adjust to the Covid-19 situation Reall decided to split the meetings in two. The Pilot Operation Phase One took place outdoors to minimise the risk of Covid contraction in M15. An additional positive consequence of such a split was that the seniors did not feel overwhelmed with the amount of information to learn and surveys to fill. The second meeting - the Pilot Training was scheduled in the times of quickly rising Covid-19 cases in Poland and tougher restrictions, thus extraordinary precautions had to be undertaken- the size of the room was 65 square meters and only 8 people were inside the room at once (6 PEUs and 2 researchers). Everybody was sitting separately wearing masks. The team decided to host the minimum required number of PEUs - 6 and interview TEUs - 1. Due to the rising uncertainty, the monthly Pilot Testing was supervised online during weekly calls with seniors - 4 weekly meetings + several 1 -1 calls with seniors who needed extra assistance. The post-testing questionnaires were filled in an online form as well, either through an online form or through a phone call.

8.4 Semi structured interviews

After the Pilot Operations Phase I, semi-structured focus group interviews were conducted with primary end users (PEUs) and tertiary end users (TEUs) in order to help POSITIVE gather focused, qualitative and textual data. This method is already described in point 3.1 “Tools for analysis” within D4.1 Validation and Demonstration Planning.

The structure of the focus group interviews are described in D4.1 Validation and Demonstration Planning, and will also take place following the structure adapted to the COVID-19 situation described in point 8.3 for each country:

- **Spain:** focus group interviews will take place via phone (either WhatsApp or phone calls) with both PEUs and TEUs.
- **Romania** - Individual face-to-face interviews were conducted at our premises with PEUs. Online interviews were done with TEUs.
- **Italy:** In order to not expose participants to any health-related risk, interviews with PEUs were conducted in a scheduled session on GoogleMeet, while TEUs were contacted individually by phone call.
- **Poland** - Partly Individual face-to-face interviews were conducted at our premises with PEUs. The remaining part was conducted online via GoogleMeets. Online interviews were done with TEUs.

9. End-user requirements from previous projects

One assumed objective is to value the transferable results obtained in previous projects and make them relevant for POSITIVE project in the perspective of promoting ICT for seniors. The POSITIVE solution will develop the following services: .

Previous results of users' requirements are therefore relevant in order to benefit from previous findings and have a much better defined starting point. The findings from the previous selected projects are the following:

- Give & Take
 - Building up relationships between the community members is important, conversation functionalities are frequently used by seniors (both visible to all group, and private between two people)
 - Seniors generally want to help others for the sake of it, but prospectively they also hope to get some help in return, if needed
 - Sharing care and social help is more popular than sharing food, helping with handy work
 - Not many people post help requests but they willingly answer them
 - Existing communities from different organisations usually have established practices and routines, and the cost to switch to a new online platform is in some cases too high
 - Sharing interests with other is crucial
 - Most communities are location based
 - Local ambassadors are required to start communities
 - Communities do not work without encouraging engagement
 - It is hard to change digital practices

10. Exploratory work

In order to support basic POSITIVE's assumptions and direction by research and hard-data, an exploratory work conducted in Poland. The insights should be applicable to other countries, since based on the workshop discussions during the kick-off meeting the situation at the pre-covid times in all participating countries is similar. The similarities between countries will be confirmed by the survey and mock-up evaluation results, as they will follow the same procedure across countries.

The exploratory work in Poland consisted of two stages:

- 1) desk research, collecting data points from available datasets, showing behaviours of general population,
- 2) 15 exploratory interviews made with active seniors recruited from Social-Economic Initiative Foundation (a small subset of the general population),

The results are indicated below.

Desk research results

A. Demography:

- A senior is defined as the person aged 60+ (the next insights follow this definition)
- There are 9.2M¹ seniors in Poland, and there will be 10.7M of them in 2030
- The number of women is significantly higher than the number of men (5.4M versus 3.7M), and the older they get, the bigger discrepancy there is
- Most seniors live in cities up to 500 000 people²
 - % of seniors live in:
 - 38% - countryside
 - 14% - city with up to 20 000 inhabitants
 - 19% - city with 20 000 - 100 000 inhabitants

¹ Ministry of Digital Affairs 2017, page 5, https://www.gov.pl/documents/1048151/1060973/Projekt_Informacji.pdf/6fc68c39-77e8-ea20-13ee-c5508e0e67fd

² CBOS 2016, page 3, https://www.cbos.pl/SPISKOM.POL/2016/K_160_16.PDF

- 18% - city with 101 000 - 500 000 inhabitants
 - 11% - city with above 501 000 inhabitants
- People with vocational training or primary education are the largest group
 - Education levels of people aged 55-64:
 - 21% - primary education
 - 35% - vocational training
 - 30% - secondary education
 - 14% - higher education
 - Education levels of people aged 65+
 - 42% - primary education
 - 19% - vocational training
 - 25% - secondary education
 - 14% - higher education
- Most seniors do not work anymore - they take retirement or early retirement, and immediately stop working after the onset of retirement often without trying out different forms of employment
 - Job situation of people aged up to 59:
 - 63% - full-time
 - 4% - part-time
 - 3% - odd-job
 - 30% - not-working
 - Job situation of people aged 60-65:
 - 23% - full-time
 - 3% - part-time
 - 2% - odd-job
 - 72% - not-working
 - Job situation of people aged 60+:
 - 10% - full-time
 - 2% - part-time

- 2% - odd-job
- 86% - not-working

B. Financial situation:

- Seniors have mostly a stable financial situation - 49% of seniors declare their financial situation is neither good or bad³ (this is even higher for older seniors)
 - Financial situation of people aged 60+:
 - Bad: 6%
 - Rather bad: 7%
 - Neither good nor bad: 49%
 - Rather good: 24%
 - Good: 15%
- Average income per person in households with a senior is equal to 1888PLN, which is 17% higher than in households without one⁴

C. Free time

- 77% of seniors regularly spend free time on watching TV⁵
 - Seniors regularly:
 - 77% - watch TV
 - 53% - go to Church
 - 40% - read
 - 58% - garden
- Seniors rarely take up proactive activities demanding going out or learning new skills
 - Seniors never:
 - 93% - attend courses

³ CBOS 2016, page 11, https://www.cbos.pl/SPISKOM.POL/2016/K_160_16.PDF

⁴ Ministry of Digital Affairs 2017, page 5, https://www.gov.pl/documents/1048151/1060973/Projekt_Informacji.pdf/6fc68c39-77e8-ea20-13ee-c5508e0e67fd)

⁵ CBOS 2016, page 5, https://www.cbos.pl/SPISKOM.POL/2016/K_163_16.PDF

- 86% - take trainings
- 81% - do social work
- 77% - travel Europe
- 70% - go to museums, galleries
- 30% of seniors use the Internet regularly or from time to time⁶

D. Final insights

- There may be only 730 000 seniors spending time actively in Poland (assuming 2.7M seniors using the Internet and the relations above)
- There are major gender differences
- Most seniors live in cities so it should be easier to reach them - more tertiary organisations and available Internet
- Most current seniors have primary or vocational training - it may have impact on their before-retirement job occupation, as well as an ability to use the Internet and computer
- After retirement, the situation of most seniors gets worsened because they stop working and are excluded from most active time spending activities - this may be an opportunity to stir them to action with POSITIVE
- However, just a little percentage of seniors currently take up proactive and learning-oriented activities
- The self-perception of financial situation is mostly good - however, it may be a result of a money-saving habit and not using it for your own needs
- The significant differences are seen between every generation (e.g. 50-60, 60-70), and future 60-year-olds may have completely different needs than the current seniors

Exploratory interviews results

E. Main points highlighted by seniors - they:

- Have a lot of free time
- Look for ambitious activities

⁶ CBOS 2016, page 5, https://www.cbos.pl/SPISKOM.POL/2016/K_163_16.PDF

- Want to fulfill their passions but encounter cost-related (e.g., booking a room, printing leaflets) and participation-related problems (e.g., most seniors around them are passive)
- Are excited about social projects
- Think computer usage has a high entry threshold (high costs, and long learning time at the beginning)
- Want to use their free time efficiently and for a practical purpose - they have a feeling of time slipping through their fingers
- Have a need to meet young people and at the same time a difficulty to find and mingle with them
- Experience friendships end after reaching the goal (e.g., finalising a project)
- Value real-world interaction more than the virtual one
- Perceive contact with friends as hard due to the distance and health problems
- Find it hard to be disciplined and motivated enough
- Have a feeling of running-out time - engaging in initiative help to release this pressure and bring them closer to other people
- Love to share wisdom and experience
- Fear loneliness and scammers
- Avoid peers and products for peers
- Do not expect living till 90 years-old - this perspective makes them intimidated but also motivated to live more actively at the present moment
- Are aware they do not use their time

F. Final conclusions about the needs:

- Fulfillment
- Connection
- Sharing experience
- Helping others
- Self-agency
- Managing free time efficiently
- Getting away from everyday hustles

11. Updates on new solutions for seniors

The global COVID-19 pandemic has been a huge stimulus for introducing new technology and remote solutions. Many of them are directed to seniors, who are especially prone to the virus and have to treat social distancing seriously. This can lead to severe loneliness which had been a serious challenge among seniors even before the pandemic. We list some solutions that could be direct competitors of the POSITIVE solution:

Cyber-Seniors

Cyber-Seniors is an organization that encourages young people to help seniors to enhance their technology skills. It has been operating since 2009, but only recently shifted its interest towards on-line solutions. The platform offers daily webinars as well as chats, where seniors can join and talk. Seniors can also book a one-on-one tech call. Previous webinars are uploaded to organization's YouTube channel. They address interesting and up-to-date issues, however very few people watch it.

ParkerLife.org

ParkerLife is a New-Jersey based organization that offers aging services. It offers comprehensive remote courses and real-time events for people at home. The main goals include tackling loneliness as well as helping seniors develop new skills. There is also a possibility to create an online grocery club that allows seniors to jointly order food that is delivered via Amazon or other services. The cooperation allows to reduce prices of some products as well as shipping. As a result, seniors can get the essential groceries without visiting crowded venues.

Harnessing the technology

During the lockdown, many doctors expanded their offer of telehealth appointments. However, even though the specialists are largely available, many seniors cannot use (or access) necessary technology, because of dementia, hearing loss and vision impairments. Others cannot afford the essential hardware.

In response to that difficulties, PACE Southeast Michigan purchased 125 GrandPads for the seniors in need. GrandPads are senior-friendly tablet computers that offer intuitive solutions and are well-adapted to serve people struggling with problems with vision and hearing⁷.

Another company – iN2L developed software for tablets that specifically targets people with dementia. State-supported program allowed to deliver iN2L tablets to 300 nursing homes and assisted living centers⁸.

⁷ Graham Judith, Seniors who struggle with technology face telehealth challenges and social isolation, CNN Health, 23.07.2020

(<https://edition.cnn.com/2020/07/23/health/seniors-technology-telehealth-wellness-partner/index.html>).

⁸ Ibidem.

Life of a senior in a post-vaccine world

According to Kaiser Health News even after the world recovers from the COVID-19 pandemic, 1 in 3 medical visits will be remote. This can also promote where a single patient can cooperate with a wider team of doctors. The team model can allow doctors to see more patients more efficiently. It is also predicted that special devices analyzing urine and fecal samples will appear in a relatively near future allowing for remote prophylactic health checks⁹.

Lifelike robotic pets

A new pilot project by Alabama Department of Senior Services offers a creative way to tackle loneliness among the elderly. They have paired with per manufacturer – Ageless Innovation – to provide companionship for seniors, namely robotic pets. They require no walking or feeding, but can nonetheless decrease feeling of loneliness, reacting to the owner’s voice and touch. Each pet costs \$100 and is purchased using federal grant funds. The project is still in the testing phase, however, it bears promising results¹⁰.

Voice technologies

British, American and Swedish seniors can take advantage of voice-activated devices to combat the loneliness. These solutions, oftentimes based on Google Home, can provide seniors with features such as music recommendation and crossword puzzle clues. In the US, a doll-sized robot – Mabu – verifies the wellbeing of the seniors. It remind them to take important medicines and notifies the user when the weather is appropriate for a walk.

Unwillingness to use new technology has been seen a the biggest challenge for the projects. Researchers emphasize that the issue of data privacy is also pivotal in the context of these projects. Seniors can share their life stories that might turn out to be intensely personal. It needs to be crystal-clear, who is responsible for the data and how is it protected.

⁹ Horovitz Bruce, What Seniors Can Expect as Their New Normal in a Post-Vaccine World, Kaiser Health News, 03.08.2020 (<https://khn.org/news/what-seniors-can-expect-as-their-new-normal-in-a-post-vaccine-world/>).

¹⁰ Gore Leada, Life-like robotic pets help Alabama seniors during coronavirus pandemic, AL.com, 13.08.2020 (<https://www.al.com/news/2020/08/life-like-robotic-pets-help-alabama-seniors-during-coronavirus-pandemic.html>).

12. Conclusions

First of all, after the analysis of the first results obtained with from the Structured and Semi-structured questionnaires (found in a specific folder in Positive Project Drive), as well as the Focus Groups interviews realized in Romania, Poland, Italy and Spain we can highlight the following conclusions in the framework of the “Design and requirements confirmation phase”:

- Among the four countries, **the only country in which we see that many seniors (50%) live alone is Romania**. In the other participating countries no one reported to live alone.
- **Smartphones are used by more than 75%** of the people among the 4 countries.
- In Spain technological devices are not used too much, none of the participants use a tablet and only 33% of them use PCs. However in **Poland** as well as in **Italy** many people use technological devices, we found in both countries that **100% of participants use PCs**.
- Among the 4 countries **seniors use mobile phones especially to make calls and send text messages**. However it is also true that we have in Italy a big number of seniors who use mobile phones to look for information as well.
- The **access to Wifi in the 3 countries is over 66%**: Italy (100%); Romania (75%); Spain (67%); Poland (66%).
- The **frequency of socializing with friends in Spain** is higher than in the other countries, with all participants reporting a frequency of socialization is on a daily or weekly basis mostly. Whereas in Poland and Italy, 33% and 22% of participants reported a monthly frequency. In Romania, 25% of participants in Romania reported they rarely socialize.
- Among the 4 countries **all seniors prefer to socialize with friends by speaking on the phone or by meeting them in person**. Furthermore, **in Poland all interviewed seniors stated that they want to socialize with friends by going to events for seniors as well as by sending them messages over the phone/tablet/PC (100%)**
- **In Poland all interviewed seniors have experienced loneliness (100%), in contrast Italy is the country where least interviewed seniors reported loneliness (22%)**. Nevertheless, when looking at the frequency of loneliness experienced in the last month (and not whole life), 13% of participants in Romania reported that they experience loneliness everyday, 11% of Spanish participants quite often and 11% of Italian participants just often, whereas Polish participants did not report it, just rarely, very rarely or never.
- Many people in Spain, Italy and Romania understand the concept of the POSITIVE platform but only the main things (it is not clearly 100%). Whereas in Poland all participants understood it clearly. It could be highlighted that only **in Romania 13% did not understand the concept**.

- **All seniors** among the 4 countries **agree on how POSITIVE the platform looks like** (Over 75%).
- The activities in which participants are mostly interested are **cultural, musical and artistic events** held in their area. Other activities highlighted were: **events organized by senior clubs in their region, charity projects they could take part in, excursions and trips for seniors, educational courses, courses organized by NGOs and festivals in their towns.**
- In Poland all interviewed seniors are interested in events organised by healthcare providers in their region as well as on diverse courses for seniors organised by NGOs.
- All the 4 countries are interested in **healthy lifestyle courses**: Spain (80%); Romania (88%) , Italy (75%) and Poland (66%) followed by **ICT courses**: Spain (40%), Romania (88%), Italy (100%) and Poland (100%).
- All 4 countries consider **important health and well-being recommendations for eating**: Spain (40%), Romania (75%), Poland (33%), Italy (75%), followed by reminders for regular visits to doctors and direct connection to healthcare centres.
- Whereas the services in which they are interested in mainly are: **weather forecast, maps with routes of public transport and schedules, local and national news feed, taxi apps and pharmacy offers.**
- Participants in the focus groups held in Poland, Romania and Spain highlighted that the **action corner** could help them feel part of a community of like-minded people, followed closely by helping them to find new friends.
- Regarding paying, **in Spain, Italy and Romania participants were not willing to pay in a vast majority, whereas all Polish participants were willing or interested to pay for POSITIVE platform.**
- We can see that there is a similar percentage of seniors in all countries (between 25 to 40%) who do not feel comfortable with technology, and Spain is the country where we find participants least confident with their ability (100%), followed by Poland (66%).
- Nevertheless, in general all 4 countries agree that they are willing to learn how to use technological platforms and solutions.
- Polish seniors use more Internet and desktop personal computers than seniors in Spain, Italy and Romania (less than 50%).
- Finally, we could say that, based on the answers, **most participants feel fine with using platforms though they feel they'd need to improve.** It should be highlighted that a minor percentage of participants in Romania and Spain stated they do not use platforms and are not keen to learn, whereas the rest, using them or not, would be keen to learn and use them.

Whereas in relation to Pilot Operations Phase I we can conclude that the COVID-19 has had a big impact on all pilot sites. Initially, this first iteration was planned to begin in M11 (March 2020), and have a duration of 4 months. Nevertheless, due to the COVID-19 situation it was postponed to M18 (October 2020) and condensed to 1 month, with also particular adaptations according to each country pilot situation and restrictions.

18 primary end users per pilot country (Romania, Italy and Spain) and 6 primary end users in Poland.

In all pilot sites face-to-face training sessions were organized, adapted to the COVID-19 health and safety restrictions. Just in Spain, due to the restrictions imposed because of the pandemic situation, the training sessions had to be organized via WhatsApp calls with each volunteer.

Nevertheless, semi-structured interviews were organized partially online or by phone (Reall and FSL conducted GoogleMeet sessions, whereas in the case of Eskilara WhatsApp was the selected tool as it was the only common one for all PEUs in Spain) and partially face-to-face in Poland and Italy. Just in the case of Romania all interviews were held face-to-face.

Finally, in the case of Pilot Operations Phase I, conclusion of the pre and post test surveys and interviews have been integrated in D4.2 Pilot Operation Summary Report.

13. Annex 1

[LOGO OF THE END-USER ORGANIZATION]

(insert logos of AAL and POSITIVE)

Informed consent

for participating in a survey and a focus group interview within the **POSITIVE** project

organized by **[End-user organization name]**

This meeting aims to present the **POSITIVE** project, its vision and objectives, respectively, to evaluate and establish the needs and requirements of the users of the proposed solution within **POSITIVE** project. **POSITIVE** will be an online platform that will help seniors to connect, get information about local events, initiate their own events, discuss topics of their interest with their peers, learn new things through e-learning, and stay active in life. The project is funded by the **AAL 2018 program** (Active Assisted Living Program).

You, as a volunteer, have been invited to take part in a research study of the **POSITIVE** project. Before making a decision on whether you want to participate or not, please read this document carefully. Please, ask all the questions you may have so you can be completely sure that you understand the scope and procedure of the study. You will receive your personal copy of this consent to keep. At all times, we assure compliance to the current legislation.

Your involvement in this activity will consist in:

- participating during the presentation of the project - its description, objectives
- completing an anonymous survey and a questionnaire
- expressing your opinion and active involvement in a focus group interview – Your views and opinions will help us identify the needs and requirements of the persons who will use the **POSITIVE platform** in the future.

Approximate duration of this session will be two hours.

The working group will be led by **[name of the facilitator]**, assisted by **[in case there is any]**, representatives of **[end-user organization]**. Your participation is voluntary and you are entirely free to withdraw at any time. The entire session will be recorded on audio. Also, we shall be taking pictures for the purpose of disseminating the information about this project and your participation in it on our POSITIVE consortium media channels (Facebook, Twitter, project's website, Ana Aslan International Foundation's social media and website etc.). If you disagree to be photographed, please mention this below.

The information you share with us during the focus group interview and the completion of the questionnaires will be kept anonymous and confidential, in accordance with the legislation in force. The collected data will be processed and analysed in confidentiality and the identity of the participants will not be disclosed under any circumstances. You have the right to withdraw at any time from this study and all your personal data can be deleted at your specific request.

For any information regarding this working group or the POSITIVE project, please contact our representatives at any time:

Name	Phone	Email

Your signature represents the informed consent to participate in this Working Group and your agreement to process the data collected solely for the above mentioned purpose.

Thank you!

Please answer if you agree or not to appear in the pictures taken for the purpose of disseminating this event:

Yes

Yes, but blurred

No

Participant name and surname

Signature

Date.....

14. Annex 2

Tools for Analysis table, describing the stage of testing for each Pilot Operation Phase, tool, type of tool and timing:

Description of tool (abbreviation)	Type of tool (pre-test, post-test)	Timing	Stage of testing					
			Pilot Operations Phase I			Pilot Operations Phase II		
			Min. No of participants	Type of participants	Organisation + Location of testing	Min. No of participants	Type of participants	Organisation + Location of testing
Socio-demographic survey + Technology usage	pre-test	Both surveys will be conducted before every stage of the testing begins for each end user i.e. before the beginning of Pilot Operations Phase I and Pilot Operations Phase II	18	PEU	AAIF, Romania	28	PEU	AAIF, Romania
			18	PEU	FSL, Italy	28	PEU	FSL, Italy
			18	PEU	ESKT, Spain	28	PEU	ESKT, Spain
			6	PEU	Reall, Poland	6	PEU	Reall, Poland
UCLA Loneliness scale	pre-test +	Responses to the UCLA will	18	PEU	AAIF, Romania	28	PEU	AAIF, Romania

(Version 3)	post-test	be collected before the beginning of every stage of the pilot testing and after its end i.e. Pilot Operations Phase I and Pilot Operations Phase II	18	PEU	FSL, Italy	28	PEU	FSL, Italy
			18	PEU	ESKT, Spain	28	PEU	ESKT, Spain
			6	PEU	Reall, Poland	6	PEU	Reall, Poland
System Usability Scale (SUS)	pre-test + post-test	Response s to the SUS will be collected before the beginning of every stage of the pilot testing and after its end i.e. Pilot Operations Phase I and Pilot Operations Phase II	18	PEU	AAIF, Romania	28	PEU	AAIF, Romania
			18	PEU	FSL, Italy	28	PEU	FSL, Italy
			18	PEU	ESKT, Spain	28	PEU	ESKT, Spain
			6	PEU	Reall, Poland	6	PEU	Reall, Poland
After Scenario Question	pre-test	ASQs will be conducted after	6	PEU	AAIF, Romania	6	PEU	AAIF, Romania

naire (ASQ)		every training and testing	6	PEU	FSL, Italy	6	PEU	FSL, Italy
			6	PEU	ESKT, Spain	6	PEU	ESKT, Spain
			2	PEU	Reall, Poland	2	PEU	Reall, Poland
WHOQOL - BREF	pre-test + post-test	Responses to the WHOQOL - BREF will be collected before the beginning of every stage of the pilot testing and after its end i.e. Pilot Operations Phase I and Pilot Operations Phase II	18	PEU	AAIF, Romania	28	PEU	AAIF, Romania
			18	PEU	FSL, Italy	28	PEU	FSL, Italy
			18	PEU	ESKT, Spain	28	PEU	ESKT, Spain
			6	PEU	Reall, Poland	6	PEU	Reall, Poland
KPIs	pre-test + post-test	Responses to the KPIs will be collected before the beginning	18	PEU	AAIF, Romania	28	PEU	AAIF, Romania
			18	PEU	FSL, Italy	28	PEU	FSL, Italy

		of every stage of the pilot testing and after its end i.e. Pilot Operations Phase I and Pilot Operations Phase II	18	PEU	ESKT, Spain	28	PEU	ESKT, Spain
			6	PEU	Reall, Poland	6	PEU	Reall, Poland
Semi-structure d focus group interviews	After the end of testing (post-test)	After the end of Pilot Operations Phase I and Pilot Operations Phase II	9	6 PEUs + 3 TEUs	AAIF, Romania	11	8 PEUs + 3 TEUs	AAIF, Romania
			9	6 PEUs + 3 TEUs	FSL, Italy	11	8 PEUs + 3 TEUs	FSL, Italy
			9	6 PEUs + 3 TEUs	ESKT, Spain	11	8 PEUs + 3 TEUs	ESKT, Spain
			3	2 PEUs + 1 TEU	Reall, Poland	3	2 PEUs + 1 TEU	Reall, Poland
Google Analytics	During testing	During testing i.e. Pilot Operations Phase I & Pilot Operations Phase II						

15. Annex 3

Presentation of POSITIVE project and Application prepared by Fondazione Santa Luzia for the training session with the volunteers of the Pilot Operations Phase I:



POSITIVE

Personalized platform assisting seniors in healthy, fulfilled and active life

POSITIVE: a big opportunity

POSITIVE aims to solve loneliness of the seniors caused by social isolation and lack of meaningful purpose in life

- Risk factor for degrading mental and physical health

POSITIVE acts as an enabler and tool assisting in everyday activities and facilitation of invigorating mental challenges

1. Physical events part: overview of local events



- All events from different websites in one place
- Events will be co-created by seniors and local organizations
- Events will be tailored to senior's interests




POSITIVE

2. Content part for facilitating digital interaction

- E-Learning courses on different topics of interest
- Forum discussion led by users with matched background





- Sharing corner: add other users and contact them
- Entertainment corner: online games (solitaire and shared modalities)

POSITIVE

Benefits and expected outcomes

- **Increase the quality of life** of seniors, meaningfulness, happiness and wellbeing



POSITIVE

Benefits and expected outcomes

- Facilitation of an **active engagement** of users in promoting independence and engagement in activities of daily living




POSITIVE


Benefits and expected outcomes

- Improved mental statuses, which would prevent medical decline



POSITIVE


POSITIVE


16. References

Berners-Lee, T. (1999). *Weaving the Web*. San Francisco: Harper.

CBOS 2016, page 5, https://www.cbos.pl/SPISKOM.POL/2016/K_163_16.PDF

CBOS 2016, page 11, https://www.cbos.pl/SPISKOM.POL/2016/K_160_16.PDF

“Free/Libre and Open Source Software: Survey and Study - FLOSS” Deliverable D18: FINAL

Graham Judith, Seniors who struggle with technology face telehealth challenges and social isolation, CNN Health, 23.07.2020

(<https://edition.cnn.com/2020/07/23/health/seniors-technology-telehealth-wellness-partner/index.html>).

Gore Leada, Life-like robotic pets help Alabama seniors during coronavirus pandemic, AL.com, 13.08.2020 (<https://www.al.com/news/2020/08/life-like-robotic-pets-help-alabama-seniors-during-coronavirus-pandemic.html>).

Horovitz Bruce, What Seniors Can Expect as Their New Normal in a Post-Vaccine World, Kaiser Health News, 03.08.2020 (<https://khn.org/news/what-seniors-can-expect-as-their-new-normal-in-a-post-vaccine-world/>).

Ministry of Digital Affairs 2017, page 5, https://www.gov.pl/documents/1048151/1060973/Projekt_Informacji.pdf/6fc68c39-77e8-ea20-13ee-c5508e0e67fd

REPORT FLOSS project, June 2002, <http://www.infonomics.nl/FLOSS/report/>.