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Report on planning of trials

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Abstract: A detailed report specifying the plan of trials and evaluations including protocols, number of users and their distribution to the various applications/services.

The ELDER-SPACES Consortium consists of:

BYTE	Project Coordinator	Greece
ORIGO	Partner	Hungary
FTB	Partner	Germany
e-Trikala	Partner	Greece
SEMMELWEIS	Partner	Hungary
SLG	Partner	Greece
CYBION	Partner	Italy

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0.2	22/03/2013	Added Evaluation metrics	FTB
0.3	23/03/2013	Added Evaluation structure	e-Trikala
0.4	23/03/2013	Added Protocols structure & requirements	Semmelweis
0.5	26/03/2013	Added User distribution	BYTE

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Glossary

USE   Usefulness, Satisfaction, and Ease of use

Executive Summary

1. Introduction

1.1 Overview

A detailed report specifies the plan of trials and evaluations including protocols, number of users and their distribution to the various applications/services.

1.2 Relation with other WPs/Tasks

Deliverable D6.1 specifies the end-user trials conducted in T6.2, whose results will be presented in the corresponding Deliverable. The used materials, the structure and the timeplan for the trials are specified as well as the used metrics.

The fields of interest for the evaluations are extracted from the Description of Work as well as from the results of WP1 and WP2.

2. Brief description of the systems to be tested

The platform will be tested on different end-systems, either the users' own devices or devices provided by the trial-sites. These could be desktop-pc as well as handheld tablet computers or the MS-PixelSense surface device. The web-functionality will be provided inside a browser on all three end-systems. The applications especially designed for MS-PixelSense will be provided via a table-top computer in the Open Day Care centres.

3. Protocols

The main objective of the Elder-Spaces project trials is to receive realistic feedback on the developed Elder-Spaces webpage from users that represent the target population of the final product.

3.1 Requirements

In order to begin the trial process the following are essential:

- The Elder-Spaces platform and its applications need to be completed and to be user ready in two languages (Hungarian and Greek).

- The trial participants need to be selected in Hungary and Greece

- The partners conducting the trials need to possess the appropriate IT equipment

- The trial methodology and the measurement tools need to be defined

3.2 Structure

The trials and evaluations will take place in three phases. The first phase is data collection, the second phase is data evaluation and the third phase is reporting on the trial and evaluation results.

3.2.1 Data Collection

The data collection phase consists of pre-examination, selection of trial participants, baseline evaluation, education, the trial process and final testing.

3.2.1.1. Pre-examination

During the pre-examination we evaluated the user requirements, along with 55+ populations' knowledge on the use of the internet and social network sites.

3.2.1.2. Selection of trial participants

The trial participants will be selected according to the inclusion criteria.

3.2.1.3. Baseline Evaluation

The baseline examination will focus on examining the participants' real life social networks, quality of life, needs and motivation for acquiring information and establishing new relationships. The participants' state of cognitive functions will also be examined. Furthermore, the trial participants' motivation for becoming a member of a social networking site specifically developed for the elderly population will be examined during this sub-phase.

3.2.1.4. Education

The selected trial participants will be introduced to the use of the developed Elder-Spaces website and its' applications in a 5 session workshop. During the education process, feedback will be collected focusing on the usability, ease-of-use regarding the site and the applications and orientation on the page. The information and experience gained during the workshops will be forwarded to the developers.

3.2.1.5. Trial process

During the trials we will measure:

- Frequency of the Elder-Spaces site use
- Extensiveness of application use
- Number of new contacts
- Quality and quantity of interventions provided by the staff during the weekly monitoring sessions

Besides monitoring the participants throughout the trial process, we will be using the basic data

received from Origo's database. The monitoring and liaison will take place weekly through personal meetings or Skype calls, to receive feedback from the participants regarding the site use and provide technical support if needed.

3.2.1.6. Final Examination

With the methodology and tools used in the baseline examination, we will examine the changes in the participants' real life social networks, quality of life, needs and motivation for acquiring information and establishing new relationships.

3.2.2 Data Evaluation

During the second phase of the trials we will evaluate and analyse the collected data in four sub-phases.

3.2.2.1. Questionnaire evaluation

- ☐ Evaluation of the questionnaire and interview results gathered during the baseline and final examinations.

3.2.2.2. Monitoring data evaluation

- The evaluation of information (feedback) received from the trial participants and the evaluation of quality and quantity of staff interventions during the monitoring process.
- The preparation of evaluation results for statistical analysis.

3.2.2.3. Evaluation of data received

Origo provides all in one statistical data on the below:
- Frequency of the Elder Spaces site use
- Extensiveness of application use
- Number of new contacts

During the evaluation the information received from Origo's database will be evaluated on an individual basis as well.

3.2.2.4. Statistical analysis

Analysis of all data gathered during the trials, including results from questionnaire evaluation, monitoring data evaluation and evaluation of data received from Origo.

3.3. Planning

- 2013 May- Selection of trial participants, Baseline Examination
- 2013 June- Education (5 session workshop)
- 2013 June-September -Trial process

- 2013 October- Final examination
- 2013 October- November- Data Evaluation, Statistical analysis
- 2013 December- Reports on the trials

4. Evaluation methodology

4.1 Fields of interest

4.1.1 Acknowledgement

The main objective of the planned evaluation is to approve the fulfilment of the project's goals and requirements. Regarding to the description of work the main objectives of the Elder-Spaces project are:

- Concerning the content:
  - The applications address the needs, interests and preferences of older adults
  - Data sets, semantics and information that is pertinent and of interest
  - Privacy capabilities sets that senior citizens will be able to understand and configure
  - Older people friendly user interfaces
  - User-friendly assistance on the use of the platform
  - Facilitation in having access to the wealth of knowledge that is available on the Internet
  - The platform appeals to people who are not familiar with technology without making users technophobes

- Concerning the social interaction:
  - Boosted social activation and interaction
  - Increasing the possibilities and opportunities for establishing of contacts
  - Reinforced interpersonal relationships (prevent loneliness and isolation)
  - Boosted intergenerational relationships
  - Facilitation in being active and well-connected in the preferred social environment
  - Boost the quality, quantity, frequency, diversity and reciprocity of contacts

- Concerning health and wellbeing:
  - Allow older adults to live more actively
  - Allow older adults to bridge distances
  - Allow older adults to prevent loneliness and isolation
  - Impact on social exclusion
  - Impact on isolation and loneliness
  - Impact on depression
  - Impact on self-neglect
  - Impact on malnutrition
  - Impact on emotional distress
  - Impact on illness
  - More cognitively agile, active and socially engaged elderly people with better mood states, enhanced perceived wellbeing and general health.

In Deliverable D2.2 "Specification of Elder-Spaces Services & Applications" some expectations regarding the impact of games and intergenerational activities were stated. Even these may be tested:

- Decrease the level of computer anxiety

- Gain knowledge and skills

- Training of memory, logic, reasoning, problem solving skills, hand-eye coordination, dexterity and fine motor abilities

- Fill the day with meaningful activities (possibility to escape from sorrows and reality)

- Gain self-esteem by getting better in the games

- Enhancing the frequency and quality of intergenerational contacts

- Eliminate intergenerational prejudices and communicational barriers

- Experiencing that they are accepted and needed

4.1.2 Participation

Another area of interest is the acceptance the platform and its applications obtain. Indicators for this are:

- Frequency of use

- Duration of use

- Subjective statement of use

- Intention to recommend the platform

4.1.3 Support

An important topic is the usability and accessibility of the platform as often stated in the DoW.

4.1.4 Financial

As stated in the DoW and Deliverable D7.2 Market Analysis and Exploitation Plan, it is planned to provide personalized advertisements in the platform. Even in this area acceptance and prospects of success should be examined. This could be extended by evaluating, if the users may be willing to pay for added value services.

4.2 Definition of metrics

To facilitate a reliable analysis of the collected data, the grade of computer, internet and social networking literacy must be measured besides the common demographic data like age, gender, occupation and marital status. Also a status of the quality of life has to be assessed to measure the impact the system's use has on the users. Therefore, common scales are used,

- because their validity is ensured,

- to have reference data,

- to identify global trends, that may explain ambiguous results.

It has to be differed between the baseline and the follow-up trials. The former is mainly to get the current status before regular use of the platform, possibly enhanced by some questions concerning the first impressions on the look and feel. The latter will include the investigation of the platform use and its assessment by the users.

4.2.1 Demographic data and computer literacy

The definition of the necessary demographic data as well as the items to measure the computer literacy from the Eurostat 2013 Household model questionnaire[1], as listed in the Appendix, will be used. Additional information for the interviewers and the answer options can be found in the reference.

4.2.2 Real life social network and quality of life

To measure the real life social network of the users and the users' quality of life, some items of the European Quality of Life Surveys Questionnaire[2] will be used. Also these are listed in the Appendix and additional information for the interviewers and the answer options can be found in the reference. The questionnaire is provided in 25 languages[3].

4.2.3 Health status

Also some health- and wellbeing-related questions are part of the European Quality of Life Surveys Questionnaire.

4.2.4 Systems usability and user satisfaction

To measure the subjective usability and the users' satisfaction of a system, different standardized questionnaires are available[4]. In the trials the USE-scale ("Usefulness, Satisfaction, and Ease of use"[5]) will be used, because it is kept short and simple and provides all data needed on the mentioned topics. Its items, which are scaled in a Likert-scale from 1 (strongly disagree) to 7 (strongly agree) or "Not Available", are listed in the Appendix as well. The first two questions are not used, because they refer to occupational, productive software and some questions concerning the financial aspects as well as two statements to ask for the most liked and most disliked elements of the platform are added.

4.2.5 System's accessibility

The accessibility tests will be performed by experts and described in detail in Deliverable D6.3.

4.2.6 Frequency and duration of use

The frequency and duration of use will be measured by implementing Google Analytics[6], to measure the times the users stayed in the different modules. Of course, for such an automatic analysis, the examined users must give their informed consent and the use of Google Analytics must be mentioned in the terms of use, before Google Analytics is used and such an analysis is done.

Some topics, like the number of friends, events participated, etc. cannot be measured automatically. So the users will be asked about them. The questions used can be found in the Appendix.

4.3 Evaluation structure

4.3.1 Baseline evaluation

The background of the project scenarios for the project implementation is described in this section. More specifically, the service and the web platform would be accessed by two different case scenarios.

- Providing social networking services to people over 55 at home through Internet browser

- Providing social networking services to people over 55 at Open Days Care Centres for the Elderly through table-top solution

The aims and the objectives of the case scenarios have to be specified for both of the user groups that will access the web platform. Moreover, the methods, the measures and the inclusion and exclusion criteria have to be defined as well.

4.3.1.1 Analysis

Aims and Objectives

Case Scenario 1: Social networking services at home

Aim: to assess the impact of home-based social networking service on the levels of burden and quality of life of people over 55 living at home, along with measuring user satisfaction and acceptance.

The specific study objectives are:

- To assess the impact of the use of social networking platform on users' burden and quality of life

Case Scenario 2: Social networking services in Open Day Care centres

Aim: to assess the impact of the use of the table-top solution based in Open day care centres on the levels of burden and quality of life of people over 55, along with measuring user satisfaction and acceptance.

The specific study objectives are:

- To assess the impact of the social networking table-top solution on elderly caregiver burden and quality of life

4.3.1.2 Requirements

Study design

Baseline assessment of familiarity with ICT and social networks, quality of life and independence will be carried out with people over 55. During the first phase of the evaluation, the most fundamental functionalities of the Elder-Spaces platform will be demonstrated to the users in order to have a more clear view of their perspective. People will be shown the main

components of the platform and then their comments and point of view will be recorded in order to assess the level of understanding they have. Follow-up will take place at approximately 3 months and six months, and will include the assessment of user satisfaction.

Measures:

During the baseline evaluation, satisfaction upon the platform use for the end users cannot be assessed as they would not have used the platform for a long time. Other than that a bespoke satisfaction questionnaire concerning the quality of life and social activation will be provided.

Demographic information (baseline)

Information such as age, sex, living arrangement, and ICT familiarity will be collected on initial interview.

4.3.1.3 Timeplan

Data collection:

All the measuring scales will be administered three times, before the implementation (baseline) after the implementation (mid-term) and at the end of the testing period (final- evaluation).

Baseline data collection will be completed by end of June 2013 (M27).

4.3.1.4 Results

The results that will emerge from the baseline evaluation procedure are the outcome of the quality of life questionnaires as well as the first impression that the users will obtain.

4.3.2 Mid-term evaluation

This is the second phase of the evaluation and consist the procedure during which people and their satisfaction on the platform functionalities will be evaluated. Apart from this, another element that is going to be examined is the existence or not of the ICT knowledge level alteration. In this phase, the developed applications will be evaluated with the use and the impact that they have on users.

4.3.2.1 Analysis

Aims and Objectives

Both case scenarios that were also mentioned in the baseline evaluation section have the same aims and objectives. More specifically, the two case scenarios are the following:

Case Scenario 1: Social networking services at home

Case Scenario 2: Social networking services in Open Day Care centres

Aim: to assess the impact of home-based social networking service and table-top solution based on the Open day care centres on the levels of burden and quality of life of people over 55, along with measuring user satisfaction and acceptance.

The specific study objectives are going to be examined through Task execution and thinking aloud feedback as well as the fill in of a questionnaire providing detailed users feedback.

Table 1: Task execution and Thinking aloud method

Part of the process	Reporting of comments from test participant	Observation by moderator
Log-in		
Browsing in the user profile		
Search a specific user		
Add a friend		
Send a message		
Upload a photo into a media album		

4.3.2.2 Requirements

Users need to have some familiarity with the Elder-Spaces platform in order to be in place to complete successfully the execution of the tasks that need to take place. Similarly to the baseline evaluation where quality of life and demographic was taken into account, in the mid – term evaluation ICT and social network familiarity have to be observed as well.

4.3.2.3 Timeplan

Mid-term evaluation will commence in July 2013(M28) and be completed by the end of September 2013 (M30)

4.3.2.4 Results

The results of the thinking aloud and the users feedback questionnaire will be recorded in Excel tables.

4.3.3 Final evaluation

This is the last part of the evaluation procedure and targets in defining the users' ICT and social networks' familiarity as it was also described in the mid – term evaluation phase. It will be measured whether there is change on the ICT level in terms of enhancement or not. It is really essential to examine and obtain a clear view of the impact and the general effect that the

applications and the Elder Spaces platform have upon the people. The main objective is to measure and evaluate whether the fundamental scope of the project which is the social activation was achieved.

4.3.3.1 Analysis

The specific study objectives are the same as in the mid – term evaluation phase and are going to be examined through Task execution and thinking aloud feedback as well as the fill in of a questionnaire providing detailed users feedback.

4.3.3.2 Timeplan

Final evaluation will commence in October 2013(M31) and be completed by December 2013 (M33)

4.3.3.3 Results

The results of the thinking aloud and the users feedback questionnaire will be recorded in Excel tables.

5. User distribution

5.1 Analysis of the implemented Elder-Spaces applications

Elder-Spaces functionality can be classified by two criteria. Depending on their complexity, they are characterized as basic functionality and applications. They can also be classified, by the device that they are intended to run on, thus having functionality that runs in the WEB or on the MS PixelSense.

In all there are ten basic functionalities and three applications implemented, as summarized in the following table.

Table 2: List of Elder-Spaces functionalities

	WEB	MS PixelSense
Basic Functionality		
Authentication	Yes	Yes
User Profile	Yes	Yes*

	WEB	MS PixelSense
Search	Yes	No
Activities	Yes	No
Notifications	Yes	No
Friends	Yes	No
Messaging	Yes	No
Albums and media	Yes	No
Events	Yes	Yes
Groups	Yes	Yes
Applications		
Travel Memories	Yes	Yes*
Life-Long Learning	Yes	No
Games	No	Yes

* Note that for MS PixelSense, the version implemented has fewer features than the one on the WEB.

In the following paragraph, we present a short description of the provided functionalities. For detailed specification and analysis of their features, consult Deliverables 2.2 & 2.3. In this presentation, what is important is to identify characteristics about the functionality that influence user interaction and could influence the perceived user experience.

5.1.1 Authentication

This is trivial functionality, related to the necessary steps a user needs to perform in order to get authenticated and access Elder-Spaces. There are three main functions available:

- Register new user
- Login
- Retrieve password

It contains minimum logic and no complexity with respect to what the users expect. Either by a username and password or an ID Card[1], users may get authenticated and enter Elder-Spaces. Minimum computer skills are required and there is no sequence of steps that users need to remember in order to complete the task.

5.1.2 User Profile

Providing user information, this functionality is one of the first that users are going to interact with. There are two main processes, one which displays information about the user and provides consolidated information from other functionalities, like activities, and the editing mode, which allows users to change their personal information and perform other relevant tasks.

In all, there are five actions available to the users:

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[1]This feature is available only in MS PixelSense.

- View Profile
- Edit information
- Delete profile
- Change profile photo
- Change password

There is moderate complexity in this functionality, where the most complex task that users may perform involve changing their profile photo, a task that involves three steps to complete.

Note that in MS PixelSense, the profile functionality has reduced features and allows no editing.

5.1.3 Search

Search is available throughout the site, as it is located in the main navigation frame. There is only one action available to users, that of searching for a string.

It requires minimum computer skills, just simple typing and almost no complexity as users receive the results of their query in just one step.

5.1.4 Activities

Activities are included in many of the available functionalities, but also have a separate page of their own. All new information on users' activities in the system is presented here to provide for centralized news feed. Users may add their own comments here; include multimedia content in their own activities.

The available actions in the activity feed are:

- View activities
- Create new activity record
- Delete activity

There is medium complexity on the available tasks, the most complex tasks (create an activity by including multimedia and text) is a two-step process. There is only one way of interacting to

5.1.5 Notifications

Notifications are used for informative purposes. As functionality, it is not one that the users interact with; they just provide an indication on new content to guide users to new information. There is no complexity or activities related to this functionality.

5.1.6 Friends

Friends' functionality also includes the cognitive recommendations results. There are to modes to this functionality, one has to do with reviewing suggested or existing friends, and the other has to do with managing pending friend requests. In all, there are five actions available to the users:

- View Friend list
- View recommended friend list
- View pending friend requests
- Respond to a friend request
- Send a friend request

These actions are of moderate complexity, as the most complex one, responding to a friend request, requires three steps to complete.

5.1.7 Messaging

Messaging is implemented by an email style implementation. There are two main categories, inbox and outbox for message classification. A user may process an existing message or send a new one to a friend.

The available actions are:

- View inbox
- View outbox
- Read message
- Delete message
- Forward message
- Reply to message
- Write message
    - Add recipients
    - Add subject
    - Write message body

This is one of the more complex functionalities with respect to the possible steps that a user may take in order to complete a task. Computer experience and understanding of the process can make this functionality simple to execute, but for novice users it can be challenging. That is the reason, for providing a wizard to guide users through the different steps of sending a message.

5.1.8 Albums and Media

Albums and media provide functionality related to grouping and presenting user photos. The provided functionality resembles that of conventional albums, which is a feature that aims in assisting novice users to understand and get comfortable with the functionality soon.

The available actions are:

- View list of albums
- View photo album
- Create new album

- Edit album details

- Delete album

- View photo

  - As slideshow

  - As full size

  - As a media page with comments

- Edit photo details

- Upload new photo

- Delete photo

- Write comment to a photo

- Delete comment from a photo

It is evident that there are several actions available to the user, a number that may prove difficult to allow for easy familiarization. There are two focus areas, that of the albums, and that of the photographs. Each one provides similar functionality, with the photos having a few similar viewing modes for users to choose from the one that is of preference to them. Although there are many actions available, the complexity related to those actions is medium, as there are not more than four steps in performing the longest task, which is the adding comment to a new photo in a new album.

5.1.9 Events

Events represent a more complex form of basic functionality. There are to main modes for looking into available event actions, that of the event administrator (the person who is creating the event) and that of the participants.

Main functionality comprises of:

- Create new event

- Add event photo

- View event details

- Edit event information

- Delete event

- Invite friends to participate

- Manage event invitation

- Add comments to the event

Although there are several tasks associated to events, the different actions require only sort sequences of steps in order to complete. The longest procedure requires three steps (Create new event with invitation of people and by adding a photo).

Events are time related entities and have the potential to significally influence the involvement

of users in Elder-Spaces. They may also have, under the proper guidance, the ability to work as intergenerational activities, promoting interaction between elder people and younger ones.

5.1.10 Groups

Groups are a similar functionality to events. The difference here is the absence of the time element. Events have a specific time that they are current. Groups do not have time restrictions. They exist throughout the time as long as their members are keeping them alive with content and comments.

Group actions comprises of:

- Create new group
- Add group photo
- View group details
- Edit group information
- Delete group
- Invite friends to participate
- Manage group invitation
- Add comments to the group

Again there are several different actions available to the users, but most of them are fairly simple. The longest procedure requires three steps (Create new group with invitation of people and by adding a photo).

5.1.11 Travel Memories

This application is much more complex with respect to the previously described functionalities. The main feature is a map of the world and a set of more advanced computer skills is necessary in order to use it.

The activities available to users are:

- Select the type of travel memories to view
- Move around in the map
- Zoom the map
- Search for a country
- Select country in the map
- Add travel memory
  - Add album
  - Upload photos
- View friend's travel memories
- Comment on memory

- Delete travel memory

The application has many activities for users, both when inserting new travel memories and when they view their friend's. An underlying understanding of the content of the application is useful to users. The overall complexity of the actions is high, as the longest sequence of steps is 6 for selecting a friends travel memory, viewing the photos associated to it and commenting on them.

It is going to be interesting to check the differences in user adaptability, between the two different versions of this application (web and MS PixelSense). In the MS PixelSense version, users can only view travel memories and only those that represent places that some friend of them visited. Of course, one should take into consideration also the different interface, as in the table top, users will be able to interact by touching photos on the surface of the device and move them around in a more "natural" manner.

5.1.12 Life-Long Learning

This application focuses mainly on multimedia content. The main interaction with the users is that of searching and selecting the material that is of interest to them and then viewing it.

There are seven actions are:

- Select from new material
- Select material category
- Select from popular videos
- Search for material
- View Enlisted videos
- Open/enlist in a course
- Share material with friends

There is little complexity in this application. There is a single mode for users to interact with the application and the longest sequence of steps to conclude an action is three (selecting a video and sharing it with a friend).

5.1.13 Games

Games consist of three applications, with similar functionality, which is the main reason that they are treated as one entity. The interesting thing in this application is that they are designed to take advantage of the tactile interface available in the MS PixelSense, while also providing an entertaining and educational incentive to elder people to use the device and interact with each other.

There are three main actions available to users, besides the actual game play.

- Select difficulty level
- Read instructions
- Play the game

The complexity related to the necessary interaction before the start of the game is minimum; all actions are completed in one step. The actual game play is in turn simple, as users need to perform simple tasks in order to play the games. Simple interactions like taping, dragging and rotating are enough in order to play all three games.

Below, we present a summary table of the available functionality and the interaction necessary as well as an indication of issues that characterize the complexity of using them.
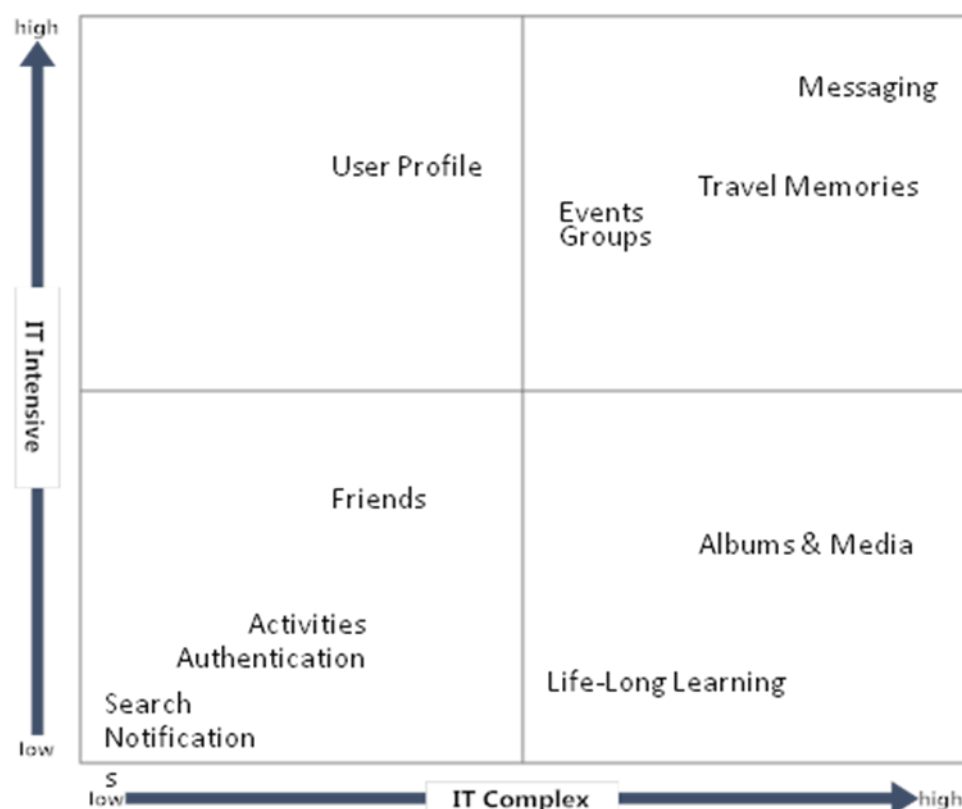
Table 3: Summary table of functionality complexity

	Keyboard/ Mouse	Typing	Available Actions	Process Complexity	Includes multimedia	Tactile interface
Basic Functionality						
Authentication	Yes	Minimum	2	Low	No	Simple
User Profile	Yes	Average	5	Medium	Yes	Simple
Search	Yes	Minimum	1	Low	No	N/A
Activities	Yes	Minimum	3	Low	Yes	N/A
Notifications	Yes	No	1	Low	No	N/A
Friends	Yes	Minimum	5	Medium	No	N/A
Messaging	Yes	Long	10	High	No	N/A
Albums and media	Yes	Minimum	14	Medium	Yes	N/A
Events	Yes	Average	8	Medium	Yes	Simple
Groups	Yes	Average	8	Medium	Yes	Simple
Applications (WEB)						
Travel Memories	Yes	Average	10	Medium	Yes	Complex
Life-Long Learning	Yes	Minimum	7	Medium	No	N/A
Applications (PixelSense)						
Travel Memories	N/A	Minimum	5	Medium	no	Complex
Games	N/A	No	4	Medium	no	Simple

5.2 Distribution of users per application

5.2.1 Web Functionalities

From the presented information on Table 3, we can separate the functionality to groups, based on the quantity of interaction (IT Intensive), and perceived necessary IT experience (IT Complex) of the users.

Figure 1: Classification of Web Functionalities

All low IT Complex functionalities are going to be used by all user groups, as they are simple enough for everyone to understand and also necessary for the most basic interaction with the platform. Based on the IT Intensive classification of the more complex functionalities, we can divide them into two groups based on the user's experience level with computers.

Additionally, there is one more group that we should take into consideration, that of people under 55. This group is necessary to be involved in all functionalities related to intergenerational activities, like events, travel memories etc.

Table 4: User Group breakdown

User Groups	AGE	IT experience
Group A	55 - 70	High
Group B	55 - 70	Low
Group C	>= 70	High
Group D	>= 70	Low
Group E	< 55	High
Group F	< 55	Low

It is clear that groups F and E have a supporting role in the platform, as the focus of the project is on people over 55. Still, it is important to take them into account, as intergenerational services and the ability to communicate with family members and younger friends are characteristics important to the success of Elder-Spaces. In that respect, we need to include younger people in the trials and incorporate their feedback to the evaluation.

Table 5: Initial User Group assignment to services – Web

Basic Functionality	Group A	Group B	Group C	Group D	Group E	Group F
Authentication	X	X	X	X	X	X
User Profile	X	X	X	X	X	X
Search	X	X	X	X	X	X
Activities	X	X	X	X	X	X
Notifications	X	X	X	X	X	X
Friends	X	X	X	X	X	X
Messaging	X		X		X	
Albums and media	X	O	X	O	X	O
Events	X	O	X	O	X	O
Groups	X	O	X	O	X	O
Applications (WEB)						
Travel Memories	X	O	X	O	X	O
Life-Long Learning	X	X	X	X	X	X

People with little or no computer experience (groups B, D & F) are initially assigned to the simplest functionalities provided by the platform. With only minimum training on handling a computer, we cannot expect them to be involved in complex functionalities or in others involving heavy typing, or advanced multimedia handling.

There should be able though to take advantage of provided functionality in a reduced capacity. Marked with "O", are the services which can be used by people with limited computer experience in a passive mode. For example, it might be too confusing to be able to copy photos from a digital camera to the PC and then upload them to an Elder-Spaces album, but it is simple enough to see the albums already posted by a user's friends and perhaps comment on them.

In Table 3**Error! Reference source not found.**, we mark with "O" those services that users may wish to use in such a reduced capacity, mainly as viewers and perhaps also by adding comments. With "X" we mark the functionality that users should explore all of its capabilities. No mark in the table excludes the functionality from the group's goals.
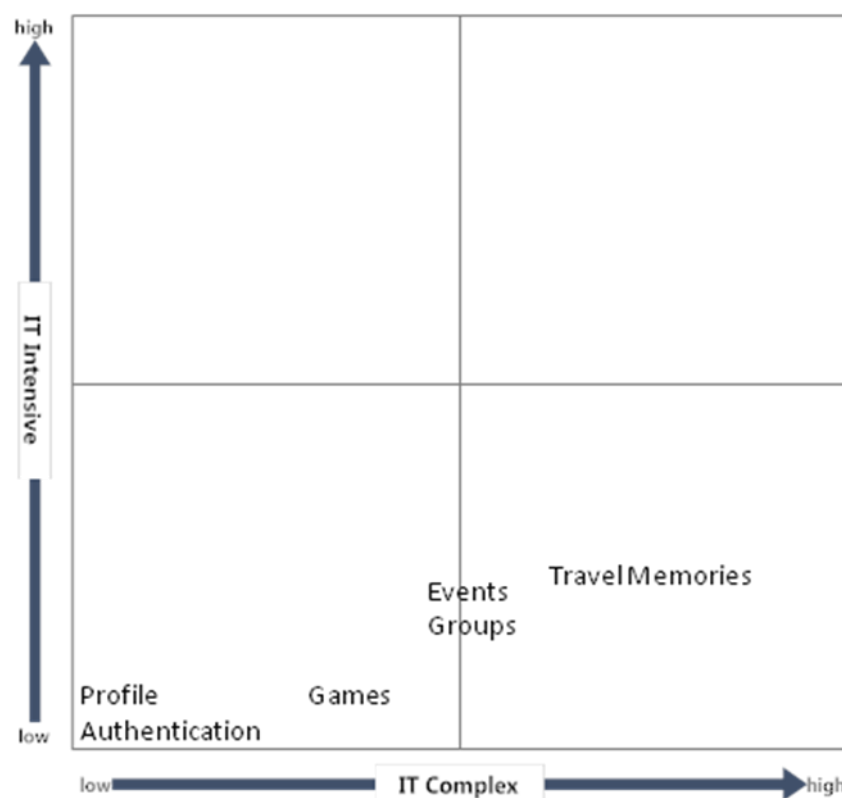
In the second trials, where all user groups will be better acquainted with Elder-Spaces and will have acquired the necessary user experience, it should be possible to include all groups to the complete system functionality.

5.2.2 MS PixelSense Functionalities

MS PixelSense services and applications are designed in a simpler manner from the beginning, as compared to their counterparts in the WEB. Due to the device's characteristics, there is little need for typing and the functionality relies less to sequence of different screens, and more to objects on the screen available to be handled in a natural way, as users would do with physical objects.

Furthermore, several of the applications available to the WEB are only implemented with limited functionality in the table-top, much in the same sense that limited functionality is recommended for the groups with little IT experience in Table 3.

Groups, events and Travel Memories are available, but users are not able to create new articles in those applications. They may view existing ones and comment, on them. As a result, the complexity and data intensive characteristics of the applications are greatly reduced. Here the challenge has to do mainly with the tactile interface and the intuitive UI design.

Figure 2: Classification of MS PixelSense Functionalities

This is also the device where games are implemented. One of the goals is to verify the UI for the games as well as the impact they have on the users. Furthermore, Games are also part of the intergenerational activities, as it is possible to have en elder user with a grandson playing together any one of the games.

In this case there is no reason to make specific differentiations as to the functionality that each group will be involved in. If there is something we can identify, that has to do with groups E & F, which do not have to participate in applications "Groups" and "Travel Memories".

Table 6: Initial User Group assignment to services – Table-top

Basic Functionality	Group A	Group B	Group C	Group D	Group E	Group F
Authentication	X	X	X	X	X	X
User Profile	X	X	X	X	X	X
Search	X	X	X	X	X	X
Events	X	X	X	X	-	-
Groups	X	X	X	X	-	-
Applications (MS PixelSense)						
Travel Memories	X	X	X	X	-	-
Games	X	X	X	X	X	X

5.3 Expected results

It is quite difficult to proceed to precise estimation on the number of test users per service and per group, while being in the planning phase. Ideally, it would be best to have an equal amount user distribution.

In practice, due to the difficulty in recruiting many users aged above 70 years old, it is estimated that 50% – 60% will belong to Groups A and B, 30% – 40% to Groups C and D and the rest 10% to groups E and F, as indicated in Table 8.

The following table displays the suggested user distribution per group, among the two pilot sites, Trikala in Greece and Semmelweis in Hungary.

Table 7: Planned pilot user distribution per Group

Groups	Users per Pilot		Total
	Trikala	Semmelweis	
Group A	30	15	45
Group B	25	20	45
Group C	10	5	15
Group D	25	10	35
Group E	5	5	10
Group F	5	5	10
Total	100	60	160

The above figures are indicative and may vary on both pilots. The goal is to pose a guide while recruiting users, which should eventually reach the aforementioned totals.

Regarding the distribution of users per functionality and application, the following table lists the minimum estimated number of users.

Table 8: Planned pilot user distribution per Functionality

Minimum nr of Users	
BASIC FUNCTIONALITY	
Authentication	160
User Profile	120
Search	60
Activities	80
Notifications	160
Friends	120
Messaging	70
Albums and media	60
Events	80
Groups	80
APPLICATIONS	
Travel Memories	50
Life-Long Learning	50
Games	80

These figures resulted by the complexity of the services and their significance, and pose an important indicator for the successful conduction of the platform per service and a quantity measurement for the project evaluation.

5.4 Outcomes

Following the previous analysis, it will be feasible to determine the tendency of users on specific services according to their corresponding age groups. This can become a very important statistic tool, acting as benchmark for future reference. Quantifying data will provide realistic evidence on elderly social networking, resulting in valuable statistics.

On one side, it will dynamically monitor the existing preferences on the current platform. Services with minor relevance or acceptance throughout most of the aforementioned groups will either be modified or even excluded from a potential platform software update.

On another point of view, this user distribution analysis may pose a roadmap for any similar initiative in the emerging social networking field and not only regarding the elderly.

Apart from the more detailed age distribution, the technology means to be used is to be analysed. The market penetration and acceptance of new touch screen media will be available regarding social networking of elderly as a first approach. This particular sector may be the initial step, as it may find imitators in several other fields (e.g. health).

6. Conclusions

The timeplan, the structure and the metrics for the upcoming evaluations are specified in this Deliverable. The platform itself in terms of value and usability as well as its impact on the users' quality of life will be measured in three month time intervals, which should provide valid data to verify the expected outcomes of the platform's use. It will be differed between conventional and touch-based devices to identify possible advantages of using touch-sensitive displays to elderly users.

Appendix

User Trials Questionnaire Items

Eurostat model for the EU survey on ICT usage in households and by individuals 2013

Socio-demographic background characteristics

G1 Age

G2 Sex

G7 Educational level (highest level of education completed)

G8 Employment situation

G9 Occupation

Module A: Access to Information and Communication Technologies

A1. Do you or anyone in your household have access to a computer at home?

A2. Do you or anyone in your household have access to the Internet at home?

A3. What types of Internet connection are used at home?

A4. What are the reasons for not having access to the Internet at home?

Module B: Use of computers

B1. When did you last use a computer (at home, at work or any other place)? (filter question)

B2. How often on average have you used a computer in the last 3 months?

Module C: Use of the Internet

C1. When did you last use the Internet? (filter question)

C2. On average how often did you use the Internet in the last 3 months?

C3. Where have you used the Internet in the last 3 months (using a computer or any other means)?

C4. Do you use any of the following mobile devices to access the Internet away from home or work?

C5. For which of the following activities did you use the Internet in the last 3 months for private purpose?

Module D: Use of e-Government

D1. Did you contact or interact with public authorities or public services over the internet

D2. Did you use websites of public authorities or public services in the last 12 months for any of the following?

D3. Have you experienced any of the following problems when using websites of public authorities or public services for private purposes in the last 12 months?

D4. Are you satisfied or dissatisfied with the following aspects of using websites of public authorities or public services in the last 12 months?

D5. Did you contact public authorities or public services using methods other than websites for private purposes in the last 12 months?

D6. What were the reasons for not submitting completed forms to public authorities' websites?

for private purposes in the last 12 months?

Module E: Use of e-Commerce

E1. When did you last buy or order goods or services for private use over the Internet (excluding manually typed e-mails, SMS, MMS)?

E2. What types of goods or services did you buy or order over the Internet for private use in the last 12 months?

E3. Were any of the following products that you bought or ordered over the Internet downloaded or accessed from websites rather than delivered by post etc.?

E4. From whom did you buy or order goods or services for private purpose over the Internet in the last 12 months?

Module F: E-Skills

F1. Which of the following Internet related activities have you already carried out?

F2. Do you judge your current internet skills to be sufficient?

F3. Do you judge your current computer skills to be sufficient if you would need to take up a new job on the labour market or change your job within a year?

European Quality of Life Survey

Real life social network

HH1 I'd like to start by asking you a few questions about your household. Including yourself, can you please tell me how many people live in this household?

HH3a Now thinking about the other members of your household, starting with the oldest … Could you tell me whether is a male or a female?

HH3c What is this person's relationship to you? Is he/she your …?

[HH3a and HH3c should be asked for the whole household]

Q21. How frequently do you do each of the following?

Q21a. Attend religious services, apart from weddings, funerals or christenings

Q21b. Use the Internet other than for work

Q21c. Take part in sports or physical exercise

Q21d. Participate in social activities of a club, society, or an association

Q22. Please look carefully at the list of organisations and tell us, how often did you do unpaid voluntary work through the following organisations in the last 12 months?

Q22a. Community and social services (e.g. organisations helping the elderly, young people, disabled or other people in need)

Q22b. Educational, cultural, sports or professional associations

Q22c. Social movements (for example environmental, human rights) or charities (for example fundraising, campaigning)

Q22d. Political parties, trade unions

Q22e. Other voluntary organisations

Q23. Over the last 12 months, have you …?

Q23a. Attended a meeting of a trade union, a political party or political action group

Q23b. Attended a protest or demonstration

Q23c. Signed a petition, including an e-mail or on-line petition.

Q23d. Contacted a politician or public official (other than routine contact arising from use of public services)

Q24. Generally speaking, would you say that most people can be trusted, or that you can't be too careful in dealing with people? Please tell me on a scale of 1 to 10, where 1 means that you can't be too careful and 10 means that most people can be trusted.

Q29. Please tell me whether you strongly agree, agree, neither agree or disagree, disagree or strongly disagree with each statement.

Q29a. I am optimistic about the future.

Q29b. I generally feel that what I do in life is worthwhile.

Q29c. I feel I am free to decide how to live my life.

Q29d. In my daily life, I seldom have time to do the things I really enjoy.

Q29e. I feel left out of society.

Q29f. Life has become so complicated today that I almost can't find my way

Q29g. I feel that the value of what I do is not recognised by others

Q29h. Some people look down on me because of my job situation or income

Q29i. I feel close to people in the area where I live.

Q30. All things considered, how satisfied would you say you are with your life these days? Please tell me on a scale of 1 to 10, where 1 means very dissatisfied and 10 means very satisfied.

Q33. On average, thinking of people living outside your household how often do you have direct face-to-face contact with…

Q33a. Any of your children

Q33b. Your mother or father

Q33c. Any brother, sister or other relative

Q33d. Any of your friends or neighbours

Q34. And on average, how often do you have contact with friends or family living outside your household by phone, the Internet or by post?

Q34a. Any of your children

Q34b. Your mother or father

Q34c. Any brother, sister or other relative

Q34d. Any of your friends or neighbours

Q39. I am going to read out some areas of daily life in which you can spend your time. Could you tell me if you spend as much time as you would like to in each area, or if you wish you could spend 'less time' or 'more time' in that activity?

Q39a. Contact with family members living in this household or elsewhere

Q39b. Other social contact (not family)

Q39c. Own hobbies/ interests

Q39d. Voluntary work

Q40. Could you please tell me on a scale of 1 to 10 how satisfied you are with each of the following items, where 1 means you are very dissatisfied and 10 means you are very satisfied?

Q40a. Your education

Q40b. Your present job

Q40c. Your present standard of living

Q40d. Your accommodation

Q40e. Your family life

Q40f. Your health

Q40g. Your social life

Q40h. Economic situation

Q41 Taking all things together on a scale of 1 to 10, how happy would you say you are?

Q45 Please indicate for each of the five statements which is closest to how you have been feeling over the last two weeks.

Q45a. I have felt cheerful and in good spirits

Q45b. I have felt calm and relaxed

Q45c. I have felt active and vigorous

Q45d. I woke up feeling fresh and rested

Q45e. My daily life has been filled with things that interest me

Q46.Please indicate for each of the statements which is closest to how you have been feeling over the last two weeks.

Q46a. I have felt particularly tense

Q46b. I have felt lonely

Q46c. I have felt downhearted and depressed

USE-Questionnaire

Usefulness

(It helps me be more effective.)

(It helps me be more productive.)

1. It is useful.
2. It gives me more control over the activities in my life.
3. It makes the things I want to accomplish easier to get done.
4. It saves me time when I use it.
5. It meets my needs.
6. It does everything I would expect it to do.

Ease of Use

7. It is easy to use.
8. It is simple to use.
9. It is user friendly.
10. It requires the fewest steps possible to accomplish what I want to do with it.

11. It is flexible.

12. Using it is effortless.

13. I can use it without written instructions.

14. I don't notice any inconsistencies as I use it.

15. Both occasional and regular users would like it.

16. I can recover from mistakes quickly and easily.

17. I can use it successfully every time.

Ease of Learning

18. I learned to use it quickly.

19. I easily remember how to use it.

20. It is easy to learn to use it.

21. I quickly became skillful with it.

Satisfaction

22. I am satisfied with it.

23. I would recommend it to a friend.

24. It is fun to use.

25. It works the way I want it to work.

26. It is wonderful.

27. I feel I need to have it.

28. It is pleasant to use.

Additional Questions (Not part of the USE-questionnaire)

29. The recommendations given by the platform match my interests.

30. The advertisements are interesting for me.

31. I can imagine paying for added value services.

Most positive aspects:

Most negative aspects:

Platform Use

1. At the moment, how many friends do you have in the platform?

2. How many messages using the platform have you written?

3. How many albums have you created?

4. How many events have you created?

5. In how many events organized in the platform did you participate?

6. How many groups have you created?

7. Of how many groups are you a member?

8. How many travel memories have you created?

9. How many learning-lessons have you created?

10. How many learning-lessons have you absolved?

11. How often do you play any of the games?

References

[1] Eurostat, European Union survey on ICT usage in households and by individuals 2013 - Eurostat Model Questionnaire (version 3.2), European Commission, 2013, last accessed 2013-03-11

[2] Eurofound, European Quality of Life Surveys (EQLS), European Foundation for the Improvement of Living and Working Conditions, Dublin, 2012, last accessed 2013-03-14
<http://www.eurofound.europa.eu/surveys/eqls/2011/documents/unitedkingdom.pdf>

[3] Eurofound, EQLS 2012 - Questionnaire translation, European Foundation for the Improvement of Living and Working Conditions, Dublin, 2012, last accessed 2013-03-14,
<http://www.eurofound.europa.eu/surveys/eqls/2011/questranslation.htm>

[4] Perlman, G., User Interface Usability Evaluation with Web-Based Questionnaires, Montreal, 2012, last accessed 2013-02-20, <http://hcibib.org/perlman/question.html>

[5] Lund, Arnold M., "Measuring Usability with the USE Questionnaire", STC Usability SIG Newsletter October 2001, Vol. 8, No. 2, last accessed 2013-03-12,
<http://www.stcsig.org/usability/newsletter/0110_measuring_with_use.html>

[6] Google Inc., Google Analytics, Google Inc., Mountain View, 2013, last accessed 2013-04-02,
<http://www.google.com/analytics/>