



EASYREACH is a Project of the
AAL Program (Call 2009-2)



FOSTERING SOCIAL INTERACTION OF HOME-BOUND AND
LESS EDUCATED ELDERLY PEOPLE

Report of the pilot results

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EXECUTIVE SUMMARY

Deliverable D6.2 “Report of the pilots results” presents the results of the pilot trials carried out in the EasyReach Project to assess the developed technological solutions. The main characteristic of the pilots is the involvement of real users. Actually real users are the core of the User Centred Design methodology applied in EasyReach. It is based on user participation from the early stages of the development process of ICT solutions up to the final evaluation and test.

The preliminary tests of different EasyReach functionalities carried out at FUB and FIMI premises (Roma and Milano) proved a crucial lack of “fluidity” in the interaction with the system and very often the experience came out clearly frustrating for the end-user. As a consequence the project team decided to apply a so called “mediated experience of interaction”, that is to arrange sessions in which elderly persons were provided with the support of a “facilitator” role running on their behalf the live scenario sequences. This methodology was called “scenario engagement” and it was designed with the aim of providing an active setting for the subjects even though the limitations of direct interaction and manipulation of I/O devices. It was therefore possible to assess some components of the Acceptance, the basic construct of the project model determining the success of the new TV based shell to make aged people digitally social included, in relation with the hypothetical use of EasyReach in the daily life.

The EasyReach pilots were planned in different contexts: national, geographic and cultural. The involved locations were Roma and Milano in Italy and Stansdorf in Germany.

In Part 1 of this deliverable the results of the pilot realised in Roma are presented. In Part 2 the results of the pilot in Milano are shown.

In Germany the pilot was planned in a Senior Residence at Stansdorf. Due to some installation problems, the EasyReach client was tested using the mouse instead of the remote control. Some improvements were suggested about the User Interface to increase usability.

Part 1 Pilot in Roma

The main objectives of this pilot were: to assess the EasyReach solution in a real environment (the Senior Centers) with the involvement of the elderly people; to evaluate user acceptance of the ICT solution developed in the EasyReach project in terms of perception of usefulness, intention of future real usage (if the system would be available at home and at the Senior Center), potentialities of the EasyReach solution in terms of social inclusion and improvement of quality of life of elderly people.

This pilot involved two Senior Centers selected in cooperation with the Federazione Nazionale Pensionati (FNP) to be representative of two different cultural areas in Roma. Some elderly having relevant roles in FNP of CISL, a trade union, or in similar organisations were also involved in the pilot. These elderly people can be considered as “privileged witnesses” of the elderly world.

In total 40 people were recruited for the EasyReach pilot in Roma (30 people from the Senior Centers - 15 for each Senior Center - plus 10 elderly having also the role of “privileged witnesses”).



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The “scenario engagement” methodology was effectively utilised during the trials. The subjects who attended the trials were able to figure their own single ideas of use, scenarios’ goals and service prototype limits as well.

The evaluation of user acceptance was realised using a qualitative methodological approach setting up group sessions at the Senior Centers premises involving the selected users. Group interviews were realised at the end each group session. Furthermore, personal interviews were administered to “privileged witnesses”.

The main results of the group interviews show that the system is perceived as useful, especially if it is used by people who stay at home and live alone, by disabled people, by those who are sick.

The EasyReach system is considered useful because of several reasons. It is perceived as a way of spending the day and meeting new people, to be used to contact people one wouldn't encounter otherwise or to reach many people at the same time. Although the focus of the EasyReach project was on communication, the recurrence of the health theme in the answers strongly suggests an integration with medical or health related services in future versions of the system. The communication facilities are indispensable, yet users want more, asking EasyReach to bridge the gap between them and public administrations, pension systems, healthcare, social service, emergency providers and so on. Overall the system is judged excellent, nice, pleasant, simple enough to use.

When asked to point out at weaknesses, the general attitude was mostly positive and people concentrated on improvements. Easier gestures, faster response, more secure passwords, fast learning curve: the improvements they require can be achieved in future versions to get a system more responding to the elderly people's expectations. The most important barrier for usage is probably the critical mass needed to make the system useful: the ability to reach also people using web interfaces is considered to be crucial by most of the participants.

The personal interviews to “privileged witnesses” confirm the potential of EasyReach to improve the quality of life of elderly people in spite of the perceived difficulties in the direct interaction (i.e. the huge slowness and the inadequate remote control). A few clear points which address at improving either functionalities and overall performance in view of a possible use at home emerged. First of all, even in this case the contact with the Public Administration (currently very complex and problematic for them) could be introduced but simplified through the EasyReach channels, especially to help those people with illnesses or disabilities. Secondly, the necessity to improve health care has been pointed out as one of the basic lines to guide future service developments. Thirdly, regarding personal security, many cases were reported about a subtle and persistent fear, a reason of constant anxiety due to some responsible social co-factors, not last the loneliness. To this regard, elements provided by EasyReach (to stay constantly in touch, share the same interests, participate more actively to the local social life) might produce the effect to create a great sense of serenity with positive effects on the quality of life.

Part 2 Pilot in Milano

The objectives of this pilot were: to test the EasyReach services in a real environment (Senior Centers) and with the involvement of elderly people; to evaluate user acceptance in the EasyReach project about: usability of the devices, potential users, possible future scenarios.

Four User Forums were organized to test the efficacy of the concept of the EasyReach service, focusing also on its usability. Thanks to ANCeSCAO – a national Association of Senior Centres – older adults from 4 small towns in the area of Milano (Casarile, Buscate, Vanzaghello and Gessate) were involved.



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The role of a researcher as a facilitator allowed elderly users to live a “mediated experience” with the EasyReach system: four meetings were held to demonstrate all the functionalities and to allow 62 older adults to discuss about and evaluate them. Evaluation was realised using both a qualitative and quantitative methodological approach by group discussion and administering a semistructured questionnaire to the participants at the end of the meeting.

The results show that the overall evaluation of the system is positive: the main idea of reaching high technological solutions through common device seems a real breakthrough. Even if some technical difficulties still occurred, elderly could test the system and reported positive feedbacks.

Older adults are the main target users, but the definition of “lonely elderly” is not suitable: the participants to the User Forums warn us about the difficulty to get in touch with a big range of lonely elderly which is represented by the introvert ones. Instead, they would suggest to think about a possible use of the service by older adults with temporary injuries that forced them at home, or by people with disabilities (also youngsters).

The main aim of EasyReach seems twofold: future users state that it will be useful to talk to other people/group and to keep update with local or global news. Communication and information are the two legs for the project to walk safe: other issues such as media storage and reminders are not a priority.

Learning the system is the highest obstacle: even though older users rate it simple, they have also lot of doubts about their will and their ability to learn new devices. To this end, mediators are needed to bridge the gap between the EasyReach system and possible users: they will not have only to teach the main commands, but they are also meant to show the benefits gained through the service in order to strengthen the motivation to learn and help older users tolerating mistakes and malfunctioning.

The possible scenarios for the project do not simply recall home settings: senior centres and nursing houses are identified as possible places to install the EasyReach system. These suggestions symbolize the strongest feedback gathered by this pilot: the service is more powerful if its aim is to enhance a real community better than support the creation of a new virtual one.



INTRODUCTION

In the period March-April 2013 the Consortium executed extensive trials of the different EasyReach functionalities at FUB and FIMI premises (Roma and Milano). The results evidenced a lack of “fluidity” in the operation of the system, which seems predominantly linked to the availability of a reliable and fast Internet access. If the Internet connection is too slow, the interaction with the EasyReach system through the remote control could become unstable, could lack in precision and speed and sometimes the experience could become frustrating for the user [1].

As a consequence of this situation, a revision of previous initial plans for the EasyReach pilots (see Deliverable D 6.1 “Detailed plans for the pilots” [2]) was agreed. Partners revised the validation plan [3] in a distance meeting held on the 24th of April 2013 and agreed to carry out during the pilots a “mediated experience” of the elderly persons i.e. to provide the support of a “facilitator” while running a live scenario demonstration.

A “scenario engagement” methodology for the execution of the field evaluation was defined [4] with the intent of carrying out an assessment of the “acceptance towards the idea of...”, or the “what if...”, after the involved older adults were engaged in a live demonstration illustrating scenarios of possible use.

Scenario engagement is a methodological approach by which a live demonstration carried out under certain procedural settings can be identically effective to assess the user's reactions and his/her own experience in interacting with the system even though in controlling it he/she is guided step-by-step by a “facilitator”, i.e. a mediator supporting the user in the I/O devices manipulation.

In this way the limitations suffered by the real end-users in interacting with the system are drastically reduced by introducing such a “middle user”.

The preference for such solution, rather than leaving the user alone in experiencing EasyReach, was suggested by the risk of diverting the attention of the end-users from the main activity of going through the EasyReach applications and accomplishing the trial tasks (e.g. testing the social communication, the use of multimedia and other options). The addition of the “mediator” represents a countermeasure that removes or diminishes at least the most crucial interaction constraints, yet at the same time preserving the possibility to collect data and opinions about an effective usage and the general acceptance of the system.

The EasyReach pilots were realised in two European countries: Italy (Pilot 1 in Roma and Pilot 2 in Milano) and Germany.

This deliverable is split into two main parts: the first part is related to the pilot executed in Roma while the second one reports on the pilot of Milano. The issues of the pilot in Germany and the realized tests are described in Annex 1.

Part 1 – Pilot in Roma

1. OBJECTIVES AND METHODOLOGY

The objectives of the Roma pilot were revised as follows:

- To assess the EasyReach solution in a real environment (the Senior Centers) with the involvement of the elderly people;
- To evaluate user acceptance of the ICT solution developed in the EasyReach project in terms of:
 - perception of usefulness,
 - intention of future real usage (if the system would be available at home and at the Senior Center);
 - potentialities of the EasyReach solution in terms of social inclusion and improvement of quality of life of elderly people.

A. Equipment and setting of the trials

A1. Client Hardware

- 9 EasyReach Set Top Boxes (STB) have been made available by Cereteth and FIMI.
 - A STB consists of a small form factor PC with the following main features:
 - Intel Core i3-3220 @ 3.3 GHz processor
 - 3.9 GB of memory
 - 488 GB disk
 - wireless (WiFi) network card
 - Ubuntu 12.10 operating system.



- 9 special remote controls have been made available by FIMI and UNIMIB.

Communication between remote control and STB is carried via WiFi. Each remote has two wifi interfaces to send data to the STB: one interface is for inertial data, the other is for multimedia (audio or video) data. Five remotes are configured to expose the two interfaces respectively on port 51 and 52, four remotes expose the two interfaces respectively on port 53 and 54.



- **Display**

The displays used in the trial are consumer LCD TV sets, made available by FIMI. A few weeks before the trial two LCD full HD TV sets (of different size) have been delivered to each Senior Centre. In particular, one TV set has a 46 inch display, the other has a 32 inch display. All the TV sets are used only as monitors, other basic or advanced features (actually, they are connected TV and have 3D capability) are not exploited in the trial.



A2. Client Software

The remote control units have been received fully configured, with no need of additional software.



The project software for the STBs was released by CNR in March (v 2.0 preliminary) and in April (v 3.0 version, used in the trial). When the project software was installed in the STBs, five STBs were configured to be controlled by a remote of the 51/52 group and four by a remote of the 53/54 group.

A3. EasyReach appliance

For brevity's sake, we call 'EasyReach appliance' a couple made of a STB and a remote configured to control it. Because of the port assignment described before, an EasyReach appliance of a group and an EasyReach appliance of the other group can be used together in the same room and share the same WiFi network.

A4. Connection to the Internet

Communication between EasyReach users relies on Internet connectivity between the involved STBs and the EasyReach server, located at CNR premises.

None of the Senior Centres had an Internet access (wired or wireless) available for the trial. In order not to bother the Senior Centres with installation burdens and costs we tried to avoid any wired solution (e.g. ADSL) and investigated the feasibility of (consumer grade) wireless access.

On March 5th 2013 we visited the Senior Centres, bringing some mobile Internet devices (Internet keys or smartphones) in order to estimate the suitability of mobile (3G) Internet access. We tried the four major consumer mobile Internet access providers. The result of that on-site survey of Internet connection parameters ('ping' delay, download and upload speed) are summarized in the following two tables.

Torrevecchia Senior Centre	TRE	TIM	Vodafone	Wind
Ping (msec)	123,33	79,67	62,83	410,00
Download (Mb/sec)	0,95	1,35	3,49	0,03
Upload (Mb/sec)	0,64	1,20	1,38	0,04

Rebibbia-Ponte Mammolo Senior Centre	TRE	TIM	Vodafone	Wind
Ping (msec)	117,33	75,83	75,25	263,00
Download (Mb/sec)	1,41	1,90	5,34	0,11
Upload (Mb/sec)	0,55	1,35	1,97	0,15

Based on such data, we found Vodafone as a reasonable mobile Internet connection provider for both sites. FUB bought two bundles of Vodafone data SIMs with one year subscription (max 1 GB per month, max speed 14,4 Mbps) and 3G router "Vodafone Mobile Wi-Fi R205". For each trial, we actually used only one router at a time, since we had no way to strictly control the association of the WiFi interfaces of a remote to a certain router instead of the other. Instead, we managed to adapt the other router in order to use a data SIM of another Internet provider (TIM) as a backup, in case of problems with the first provider.

The resulting technical arrangement is illustrated in the following figure 1.

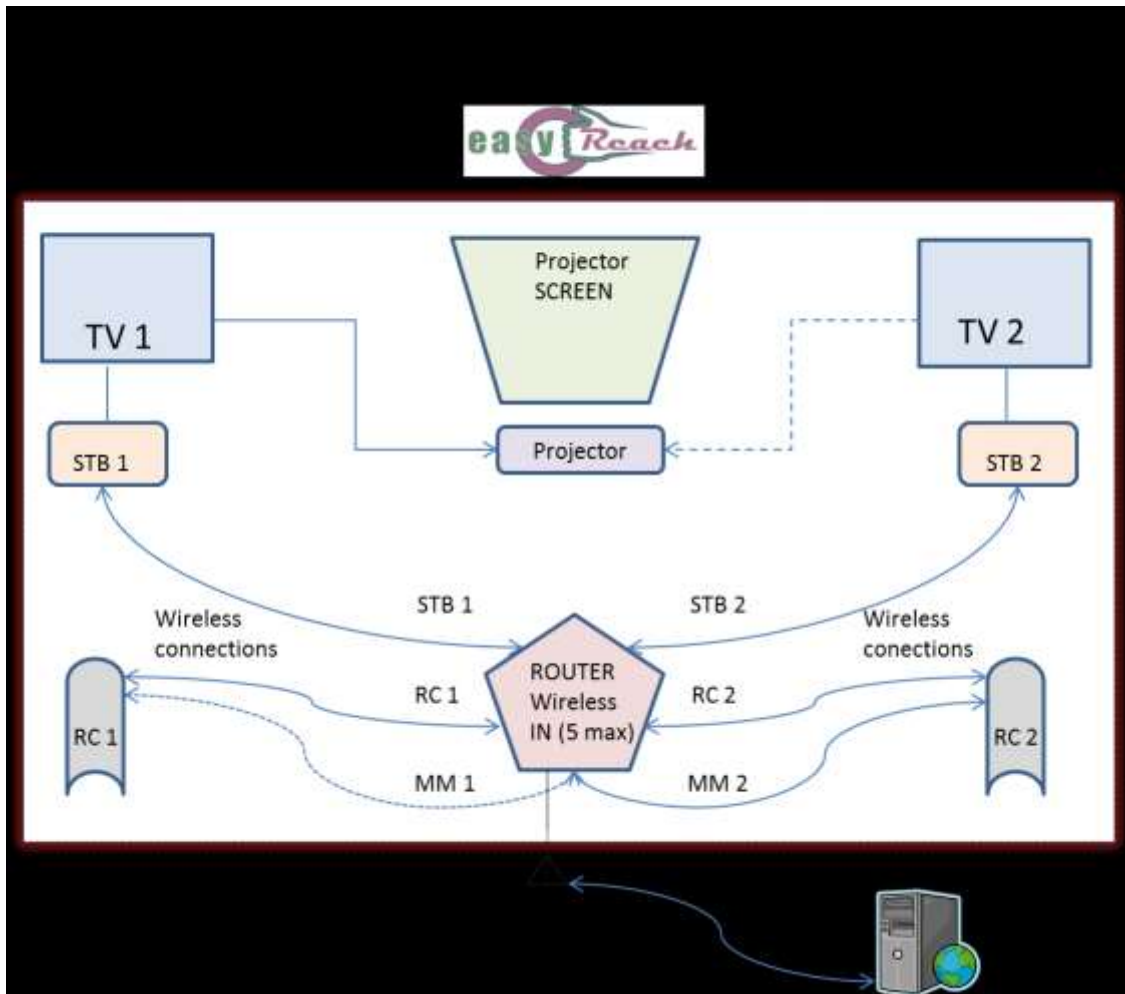


Figure 1. Equipment setting

B. Preliminary setting at FUB premises

As announced in document [4] because of the limitations occurring in the interaction with the current realization of the EasyReach appliance (described in document [1]), the field trial in Roma has been reshaped from real end-users controlling directly the system to a live demonstration where a “middle user” operates on the EasyReach appliances to perform some pre-defined relevant usage scenarios in front of users-to-be or to guide step-by-step the elderly user.

The usage scenarios described in document [4] have been carefully exercised at FUB premises in order to avoid time consuming or ‘dangerous’ (i.e. likely to fail) actions. User profiles and user groups identified in the scenario have been created in the STBs and good quality videos and photos have been loaded offline into the ‘galleries’ of selected users (instead of taking them with the low quality camera embedded in the remote).

B1. Setting at Senior Centre Torrevecchia

We visited “Centro Anziani Torrevecchia” on May 20th for a logistic/technical test of devices, cables and connections, and on May 22th for the run of the whole scenario engagement with the final arrangement. Since each session involves about one dozen of elderly people, their chairs are arranged in order to allow each people to clearly see the appliances and the displays as well as the researcher illustrating the scenario and the actions of the middle user (the mediator). A technical assistant also attended nearby, ready to intervene in case of faults. Video and audio recording of the session were performed both during the demonstration and during the following discussion.

The room setting is illustrated in the following figures 2 to 5.



Figure 2. Scheme of the setting for scenario engagement



Figure 3. Equipment layout (photo)

C. Working sessions

C1. Senior Center Torrevecchia

We had two trial sessions: May 23rd and May 24th.

In the first part of the trial session the chairperson introduced the project, defined the aim of the trial and described the scenario by detailing the actors and their communication intentions, which are promptly executed by the middle user.

In the second part of the trial session the chairperson interviewed the elderly people collectively, then she and some of her colleagues make personal interviews with some of them, as widely reported in next section.



Figure 4. Experimental session with elderly people at Torrevecchia Senior Centre

Unfortunately, the night between the two trial sessions at Torrevecchia, TVs sets and STBs were stolen. The two TV sets were replaced by one TV set and a projector and the two STBs were replaced by two STBs loaded with the same user profiles, user groups and contents. The second trial session was held as scheduled, even if a technical malfunctioning forced to a partial execution of the two scenarios. In practice, for each scenario role 1 (the proposer) was demonstrated while role 2 (the responder) could not be demonstrated.

C2. Senior Centre Rebibbia - Ponte Mammolo

We visited “Centro Anziani Rebibbia - Ponte Mammolo” on June 4th for a general dry run. At this Senior Centre, since a smaller room was used, only one EasyReach appliance and the bigger TV set have been used. The single STB has been loaded with all the user, user groups, videos and photos that previously were distributed between the two STBs. Having all the users loaded on a single STB does not interfere on the scenario execution other than in spending additional time (for log out and log in) in case that two subsequent users were, in the two-STBs configuration, ‘homed’ in different STBs.



Figure 5. Experimental session involving elderly at Rebibbia - Ponte Mammolo Senior Centre

We had two trial sessions: June 6th and June 7th. The trial sessions at Rebibbia - Ponte Mammolo were held like the one of May 23th at Torrevecchia.

D. Selection of the participating subjects

A screening questionnaire (Annex 2) was worded to adequately select the users experimenting EasyReach. The main items included in the screening questionnaire were age, gender, education, number of people living in the house, frequency of computer use, frequency of Internet use.

The most relevant adopted selection criteria were the age (preferably in the range 65-80) and frequency of Internet use (preferably no more than a time per month).

Two senior centers (“Torrevecchia” and “Rebibbia - Ponte Mammolo”) representing two different geographical and cultural areas in Roma were selected for the pilot.

A presentation meeting with elderly people was organised in each of the two Senior Centers in September 2012 to recruit the elderly for the pilot. In each meeting the EasyReach system functionalities and the devices of EasyReach solution were shown, the main features of the trials were presented and the screening questionnaire was administered to elderly people.

A further presentation meeting was organised at Federazione Nazionale Pensionati (FNP) premises in October 2012 to involve some elderly having relevant roles in FNP of CISL, a trade Union, or in similar organisations. These elderly people can be considered as “privileged witnesses” of the elderly world.

Even in this meeting the screening questionnaire was administered to participants.

About 60 people attended in total the three presentation meetings.

The analysis of the collected data from the screening questionnaire allowed to select 40 people for the EasyReach pilot (30 people from the Senior Centers, 15 for each Senior Center, 10 elderly having also the role of “privileged witnesses”). Furthermore 8 “reserves” (20% of the total participants) were recruited since elderly have the tendency to cancel their participation at the last minute for unpredictable reasons.

E. Procedure

The evaluation of user acceptance was realised setting up group sessions at the Senior Center premises involving the selected users. About 10 users were involved in each session. A total of four group sessions were realised, two sessions at each each senior center. The dates of the sessions are summarised in the following table:

Table 1. Group sessions

Senior Center	First session	Second Session
“Torrevecchia”	23 rd May	24 th May
“Rebibbia - Ponte Mammolo”	6 th June	7 th June

Each session developed through the following main segments:

- demo of the main features of the EasyReach system (remote control, user interface);
- scenario engagement of the elderly in typical tasks with the EasyReach prototype such as the planning of a group activity;
- collection of the users' opinions about the main user acceptance aspects: perception of EasyReach usefulness for social interaction and for improvement of the quality of life, willingness to use the system in the future, willingness to buy, facilitating conditions, etc.

During the scenario engagement of the elderly a “mediated user experience” was set up for elderly people: the elderly user suggested interactions with EasyReach during the execution of the tasks and the “facilitator” interacted with the system for the user. In such a way frustrating situations for elderly people were avoided during the pilot.

The time duration of the group session was about 80 minutes. In the following table the main phases of the group session are described showing also the planned time duration for each phase.

Table 2. Phases of the group sessions with time durations

Phases	Time duration
1. Identification of the users and compilation of the disclaimer note for audio/video recording	10 minutes
2. Short reminder presentation of the EasyReach Project and introduction of the research team	5 minutes
3. Introduction of participants	5 minutes
4. Short demo of the EasyReach functionalities	10 minutes
5. Scenario engagement	30 minutes in total (two tasks, 15 minutes each)



6. Collection of user opinions (group interview)	20 minutes
<i>Total</i>	<i>80 minutes</i>

E1. Short demo of the EasyReach functionalities

The following features of EasyReach system were shown:

- Hardware components (TV set, decoder, remote control)
- Log in procedure
- Welcome page
- Sending a message to a person and to a group
- Creating a group
- Calendar
- Role of the personal assistant

E2. Scenario engagement

During the trial sessions a couple of two simple activities were identified as the most fitting the usual life habits of those people attending the two Roman Senior Centers joining the experimentation.

Two different scenarios were demonstrated showing the “added value” of EasyReach utilisation in comparison to traditional communication media (e.g. phone calls).

Scenario 1 “A day to the cinema”

The theme of the first scenario engagement is the organisation of a group activity.

Giovanni is organising a day to the cinema with his friends belonging to the group “Cineclub Torrevecchia”. During the scenario engagement a person of the research team is interacting with EasyReach playing different roles:

Role 1. Organiser/proposer (Giovanni)

- Log in as Giovanni
- Selection of the group “Cineclub Torrevecchia”
- Registration of an audio message to invite friends to go to the cinema on Monday at 21:00. At this moment a voluntary participant is asked to record the message using the remote control
- The audio message is verified
- The message is sent to the group “Cineclub Torrevecchia” together with the poster and the trailer of the movie.

Role 2. Receiver/responder (Arianna, one of the friends receiving the invitation)

- Log in as Arianna Bianchi
- Selection of the group “Cineclub Torrevecchia”
- Receipt of the message containing the invitation, the poster and the trailer
- Sending the response message for accepting the invitation. At this point a voluntary participant was asked to record the message using the remote control.

Role 1. Organiser/proposer (Giovanni)

- Receipt of different messages of adhesions
- Sending the final confirmation of the appointment to go to the cinema.

Scenario 2. “Becoming a grandmother”

The theme of the second scenario is the communication of good news to friends. Antonia wants to inform her friends belonging to the group “Antonia’s friends” that Antonia today becomes a grandmother for the first time and she is the happy grandmother of a pair of twins.

Role 1. Originator (Antonia)

- Log in as Antonia
- Selection of the group “Antonia’s friends”
- Registration of an audio message announcing that she is now grandmother of a pair of twins. At this point a voluntary participant was asked to record the message using the remote control
- Sending the message to the group “Antonia’s friends”
- Sending a photo and a video showing the twins.

Role 2. Receiver (Giovanni, a friend of the group “Antonia’s friends” receiving the message)

- Log in as Giovanni
- Selection of the group “Antonia’s friends”
- Receipt of the audio message, photo and video of the twins
- Sending a congratulation message. At this point a voluntary participant was asked to record the message using the remote control.

After the scenario demonstrations, a little extra space (few minutes) was dedicated to make EasyReach handy to anyone who was willing to try. Simple actions like recording audio message, take picture or short video clips by using the remote control were made available.

E3. Roles of researchers during the group session

The group session was realised adopting an adequate procedure

- One FUB researcher conducted the session using a guide;
- A second FUB researcher having the role of “facilitator” interacted with the system during the group session;
- Another FUB researcher, having the role of recorder, took note of the most relevant issues emerging from the interview;
- The group session was audio and video recorded.

A disclaimer (Annex 3) was submitted to each participant in order to obtain the necessary permission for audio and video recording and data collection.

E4. User acceptance evaluated aspects

The user acceptance model UTAUT (Unified Theory of Acceptance of Use of Technology) was selected as theoretical framework for the Roma Pilot in the Deliverable D 6.1 (see also [5] and [6]).



Referring to the revised objectives listed in Section 2 the user acceptance aspects evaluated in this pilot are:

- perception of usefulness of the EasyReach solution
- potential for social inclusion and for improvement of quality of life of elderly people
- intention of future service usage (at home and at the senior Center)
- willingness to buy.

Furthermore general impressions about the system and about its main features and suggestions for improvement were investigated.

E5. Data collection

a) Group interview

In the last part of the session a group interview was realised to collect user opinions about user acceptance of the EasyReach system.

The main topics investigated during the group interview were:

- Overall impression about the system
- Perceived usefulness for personal use to socialise and to avoid loneliness
- Perceived usefulness for elderly people to improve their quality of life
- Pleasantness of use (e.g. graphical interface)
- Intention of future use at home and at the senior center
- Use scenarios at home and at the senior center
- Provided services: sending messages (audio, photo, video) to a person, sending a message to a group of persons sharing the same interests, calendar, creating a new group, services to be added or eliminated
- Personal assistant (useful or invasive)
- Privacy aspects (e.g. log in procedure, group management)
- Most negative aspects
- Suggestions for improvement

A transcription of the group interview was made (see Annex 4). Then content analysis was conducted to point out the most relevant emerging topics.

b) Personal interviews

In addition to the group interview, personal interviews were administered to a small group of users (about 10) to analyse user acceptance aspects more in depth.

These elderly have relevant roles in Federazione Nazionale Pensionati (FNP) of CISL, a trade Union, or in similar organisations. So they can be considered “privileged witnesses” of the elderly world.

A researcher conducted the personal interview following an outline and another researcher took note of the most relevant issues emerging from the interview. The time duration of the interview was about 30 minutes.

The main items discussed during the personal interview were:

- Scenarios of future use of EasyReach by the elderly people at home and at the senior center
- Potential of EasyReach to improve social interaction and quality of life of elderly people
- Negative and positive aspects of the system

- Free comments and suggestions.

The personal interviews were audio recorded.

Also for personal interviews a transcription was made (see Annex 5). Then content analysis was conducted to point out the most relevant emerging topics.

The photographic documentation of the sessions is shown in Annex 6.

2. RESULTS

2.1 GROUP INTERVIEW RESULTS

2.1.1 PARTICIPANTS CHARACTERISTICS

The analysis of the characteristics of the users in Rebibbia - Ponte Mammolo Senior Center shows a balanced distribution of the sexes (42% male and 58% female) and regarding the ages, a peak of participants aged between 71 and 75 (42% of the total).

Most of the participants have low education level (84% between “Scuola Primaria” and “Scuola Secondaria di Primo Grado”) and have at least one person living with them (47% of the total).

All the participants do not use computers and the Internet or use it no more than once a month (100%).

Table 3. Participants characteristics Senior Center Rebibbia - Ponte Mammolo

Participants characteristics						
Sex		M	F			
		8	11			
Age		<60	60-65	66-70	71-75	>75
		1	2	3	8	5
Highest attended school		"SCUOLA PRIMARIA" (age: 6-11)	"SCUOLA SECONDARIA DI PRIMO GRADO" (age: 11-13)	"SCUOLA SECONDARIA DI SECONDO GRADO" (age: 13-18)	UNIVERSITY (beyond 18)	
		8	8	5	0	
People living with		0	1-2	3-4	>4	
		7	8	1	0	
Use of pc		EVERY DAY (1)	FEW TIMES A WEEK (2)	ONCE A WEEK (3)	ONCE A MONTH (4)	NEVER (5)
		0	0	0	4	15
Use of internet		0	0	0	2	18

The analysis of the characteristics of the users in Torrevecchia Senior Center shows a small preponderance of male (62%) and regarding the ages, a peak of participants aged between 60 and 70 (90% of the total).

Most of the participants have medium education level (76% between “Scuola Secondaria di Primo Grado” and “Scuola Secondaria di Secondo Grado”) and have at least one person living with them (42% of the total).

Almost all the participants do not use computers or use it no more than once a month (71%) and don't use the Internet or use it maximum once a month (52%).

Table 4. Characteristics of participants (Senior Center Torrecchia)

Participants characteristics						
		M	F			
Sex		13	8			
		<60	60-65	66-70	71-75	>75
Age		1	9	10	1	0
		"SCUOLA PRIMARIA" (age: 6-11)	"SCUOLA SECONDARIA DI PRIMO GRADO" (age: 11-13)	"SCUOLA SECONDARIA DI SECONDO GRADO" (age: 13-18)	UNIVERSITY (beyond 18)	
Highest attended school		1	13	3	1	
		0	1-2	3-4	>4	
People living with		0	9	6	2	
		EVERY DAY [1]	FEW TIMES A WEEK [2]	ONCE A WEEK [3]	ONCE A MONTH [4]	NEVER [5]
Use of pc		1	1	1	7	8
Use of internet		1	0	0	5	6

The analysis of the aggregated data of the characteristics of the participants in the two Senior Centers shows a balanced distribution of the sexes (52% male and 48% female) and regarding the ages, a peak of participants aged between 66 and 70 (32% of the total).

Most of the participants have low education level (80% between "Scuola Primaria" and "Scuola Secondaria di Primo Grado") and have at least one person living with them (65% of the total).

Almost all the participants do not use computers (85%) and the Internet (72%) or use it no more than once a month.

Table 5. Characteristics of participants (Senior Centers Torrecchia and Rebibbia - Ponte Mammolo)

Participants characteristics						
		M	F			
Sex		21	19			
		<60	60-65	66-70	71-75	>75
Age		2	11	13	9	5
		"SCUOLA PRIMARIA" (age: 6-11)	"SCUOLA SECONDARIA DI PRIMO GRADO" (age: 11-13)	"SCUOLA SECONDARIA DI SECONDO GRADO" (age: 13-18)	UNIVERSITY (beyond 18)	
Highest attended school		11	21	6	1	
		0	1-2	3-4	>4	
People living with		7	17	7	2	
		EVERY DAY [1]	FEW TIMES A WEEK [2]	ONCE A WEEK [3]	ONCE A MONTH [4]	NEVER [5]
Use of pc		1	1	1	11	23
Use of internet		1	0	0	7	22



2.1.2 ACCEPTANCE BY THE PARTICIPANTS

▪ **Perception of usefulness**

Many people say that the EasyReach system is useful. Some of them are even enthusiastic. In general, they say that the system can be used especially by people who stay at home and live alone, by disabled people, by those who are sick.

«It would be very healthy for lonely people who speak to the walls.»

The system is seen as useful to defeat isolation.

«It helps you feel not alone.»

In this respect, somebody even envisages the opportunity of accomplishing a social and human role:

«EasyReach would offer me the possibility to stay close to people feeling lonely and to feel useful»

The need to stay in touch is a primary driver for most, if not all, of the elderly people. Retirement from an active working life is a turning point in their lives and the feeling of being left at the margins of society often appears under different aspects.

Some of them fill this void by actively engaging in a series of activities at the elderly centers (theatre, excursions, card games...), others concentrate on babysitting grandchildren, others stay at home with a passive attitude of wait.

The mere idea of interacting with a brand new piece of technology like EasyReach sparkles their imagination as they no longer feel left out by the technology fever in modern society: they can still be part of it.

However, there is also some rare example of skeptical opinion:

«It is quite useful. I don't love technical progress very much, like cell phones and similar. I agree with it up to a certain point.»

Comments like these clearly single out a specific class of elderly people: those rejecting (almost) completely new technologies they do not understand. It is a primeval fear of the machine they cannot control while they perceive themselves as inadequate for the challenges of the technological society. Keyboard, mouse, smartphone, tablet, printers: these are artefacts to stay away from, while retreating to the non-demanding TV screen and the familiar remote control.

The EasyReach system is considered useful because of several reasons. It is perceived as a way of spending the day and meeting new people:

«To see other people, to listen to other opinions, to understand how other people are.»

Someone also would like to communicate with people in the other elderly centres in Rome and Milan who are experiencing the same system.

«It could be interesting to have the chance of communicating with the elderly centre of Torrevicchia to check if activities carried on here in Ponte Mammolo are accomplished there as well.»

Somebody underlines that the system could be used to contact people one wouldn't encounter otherwise or to reach many people at the same time.

«I cannot gather ten people in my house, but I could in EasyReach.»



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Meeting new people, listening to different opinions, learning new things: all these activities contradict the mainstream concept of elderly as people of habit and rare intellectual stimuli. Some of them are still very open to the world and its inputs, and they welcome any systems helping them to keep in contact.

Great emphasis is given to the communication with far and near friends and relatives, such as children and young grandchildren:

«It would be a perfect communication medium, for instance to communicate with brothers and sisters living abroad.»

«I would use it to communicate with my grandchildren who do not live near me. Then, I would use it to communicate with my friends.»

Besides their interests and activities, most of their lives rotates around their families: children, grandchildren, siblings.... A communication system facilitating relationships with families is highly welcome and appreciated.

Someone says that sending messages can help sharing information and interests. As an example, dance, cinema, books and plays could be interesting to be shared. Card games could be organized too.

More in general, EasyReach is seen as a means of overcoming the fear of being left behind.

«It is important to keep in touch with the world.»

Several interviewees say that the system can help maintain good mental health.

«The difference between this system and TV is that EasyReach keeps the mind awake, while the TV sends you to sleep.»

«When you start using the system, new ideas come to your mind and new potentially useful applications.»

«Practicing the system should improve learning.»

«I think that this system is good to keep the brain active.»

Keeping the brain active and learning new things is a well rooted concept in the elderly people of the 21st century, yet it must not be forgotten that participants in the focus group belong to the class of more active elderly people, currently engaged in activities at the elderly centres, thus not reflecting the attitudes of more passive groups.

However, someone observes that EasyReach can be used by elderly people whose general health conditions are still good enough.

Further, the system is considered useful for people who cannot use a keyboard.

Examples of other considerations are:

«The availability of images makes it better than the telephone.»

«It can simplify many things for elderly people.»

In particular, someone says that the calendar can be useful to remember a check-up at the ASL (Local Health Unit).



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To communicate with physicians is considered an important aspect by elderly people.

Although the focus of the EasyReach project was on communication, the recurrence of the health theme in the answers strongly suggests an integration with medical or health related services in future versions of the system.

▪ **Perception of pleasantness of use**

The interviewees say that the system is excellent, nice, pleasant, simple enough to use. For example, somebody says that the password code with the icons is nice.

Someone affirms enthusiastically that he has seen many unexpected things.

«At the beginning, it seemed to me almost like a game. Then, little by little... Certainly, communication is limited at the moment, but it is nice and interesting. [...] I think that this system, which doesn't need a keyboard and can be equipped with a large screen, is more immediate for elderly people, who have attention and sight problems.»

It is interesting to give a look at some other reactions:

«EasyReach is another chance for us, elderly people. It is an innovation and for the first time we are part of it. I could feel part of the network of today.»

«It makes you feel younger. It keeps you more alive. Otherwise, you get old.»

«Video and photos are additional features that can be enjoyed: messages are more complete with them.»

The graphical interface is a crucial aspect for people who start to have sight problems. Equipping a large TV screen and designing large and coloured icons definitely improved the pleasantness of use for this group of people.

▪ **Intention of use**

A whole gamut of intentions has been gathered about the use of the system. As a matter of fact, they span from negative to enthusiastic reactions, passing through balanced attitudes.

Examples of negative reactions are:

«I already have so many friends: using the system would make my life more complicated!»

«I'm already a member of a dozen groups, we meet often: I need no EasyReach to communicate!»

«I am very unwilling to contact new people. I would be even more reluctant to do this using such a system.»

Here are some positive statements:

«I could use it to speak to my son and my daughter-in-law. When I feel alone, I can turn the system on and I can feel more serene.»

«I would really like to learn how to use it!»

«I'm definitely interested!»



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«I'd have great fun getting to know new things: cooking, gardening... When I have time, I would explore a lot!»

«I'd buy it immediately, as soon as it is on the market!»

«Once I learnt about how to use it, I would definitely use it!»

Examples of intermediate or prudent reactions are:

«I wouldn't use the system very much. I'd talk with my son who's at Ibiza.»

«I'm lazy when I have to make a phone call, but I'd use it with the TV set. However, I already have my group of friends, so I'm not very interested in creating new groups.»

«I wouldn't use videos and photos. It would be a complication. I've already enough complications!»

«I would use it daily, not for a long time because I have many interests.»

Someone has a pragmatic approach:

«If you have it, you use it.»

The intention of testing or using the system in different contexts can be reported too:

«I am available to test it at home.»

On the other hand, an interviewee envisages that the system would be used also at the elderly centre.

Someone expresses his specific intentions of use:

«I like sports and would join sport groups»

«I would use it to communicate with my friends and with my children who live far from me.»

«I would use it to communicate with my friends in order to go to the theatre together, for example.»

«The calendar is very useful: I'd use it on a daily basis, also for shopping.»

The colourful variety of different statements about intention to use reflects the spectrum of different attitudes towards life in general that elderly people have. A classification is complicated and somehow redundant, yet the micro-universe of the focus groups includes technology enthusiasts, total rejecters, seriously or superficially curious people, snobbish persons, money savvy customers... In order to really understand intention to use, more extensive trials are needed, with users getting their hands at EasyReach for a continuous period of time.

2.1.3 SERVICES (PROVIDED BY THE SYSTEM OR NOT)

An interviewee says:

«It should be linked to public institutions. This way it would be really useful. More than to communicate with friends.»

This is only the first one out of the many requests for the link between the EasyReach system and the external world, especially that of public services.

Provided that at the other end of the link there should be the same system, many interviewees say that EasyReach should allow people to access the Internet, to operate e-mail and to communicate with Public



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Administration, the Ministry of Foreign Affairs, INPDAP, INAIL and INPS (Italian public pension systems), telephone emergency services, the police, the fire department, municipal offices, social services, healthcare, taxi services. As an example, the results of diagnostic tests should be received via e-mail.

Here are some other examples:

«I would like that the system made available a direct link to call for help and get a physician or an ambulance.»

«I could exploit it if there were an association which delivers medicines and food at home.»

«Nowadays, certificates can be obtained online. So, I'd like to get a certificate at home by using EasyReach together with a printer.»

Other requests of facilities not offered now by the system are:

«The system should allow one to download photos made elsewhere.»

«I'd like to upload videos I already have and send them to friends: my wedding's video...»

«The system could be used to find the most convenient offers in supermarkets.»

Even if participants belong to the group of non-users of the Internet, yet many of them have a (dim or strong) perception of the many benefits that can be achieved online. When they look at EasyReach, a system proposed as a communication system, they see beyond that and fancy a whole range of services they could use to make their lives better. The communication facilities are indispensable, yet they want more, asking EasyReach to bridge the gap between them and public administrations, pension systems, healthcare, social service, emergency providers and so on.

Several interviewees say that the system facilities relevant to the calendar and the “groups of interest” are useful and effective. In general, they say that there aren't any useless facilities. Simply, if someone is not interested in a specific element of the system, he is free not to use it:

«I wouldn't cut applications off the system: if I don't need something, I just don't use it!»

Here are some statements relevant to the services already offered by the system:

«Groups are interesting: we play cards and could use them before gathering in someone's home.»

«I would use the groups of interest. I would create a praying group.»

«I would create a group about the game of bowls.»

«I would organize trips.»

The calendar is also very much appreciated:

«The calendar works like a charm! With all the things we elderly people do, I would have reminders chiming all the time!»

«Yes, the calendar is useful. I would use it to make appointments with physicians, which are frequent.»

A woman says:

«I would send photographs through the system. The face reveals true emotions. This way, a sensation of more proximity can be felt.»



2.1.4 PRIVACY ASPECTS

Many interviewees say that confidentiality of information in EasyReach is okay.

Someone underlines that the use of whatever information system brings on some exposition:

«Well, of course if you use EasyReach, you accept losing some privacy.»

Somebody pursues a cautious approach:

«I would feel more at ease if I were not contacted by new people.»

A critical point is the use of photographic portraits:

«Some people do not wish to have their pictures shown...»

«I wouldn't show my photo portraits or the photos of children. I fear illegal uses of content.»

Here are diverse considerations about privacy aspects:

«No vulgar content should get into EasyReach: the Internet is so full of filthy things!»

«Never mention on Facebook when you leave home on holiday, or you can find your house spoliated.»

2.1.5 NEGATIVE ASPECTS

Many negative aspects have been reported. As a matter of fact, the interviewees have made a wide range of considerations.

First of all, someone says that the system is too complex:

«The system should be tested. It seems too complicated, especially with regard to the remote control.»

The use of the remote control is perceived as a major problem by several participants:

«Everything is all right with the system, but the gestures associated to the use of the remote control are not easy to be operated.»

«I would appreciate less gestures to stay in touch...»

«It's really hard for an old person to control the remote with gestures, especially if he's got motor problems»

«The remote control, which needs the use of gestures to be operated, is not suitable.»

«In my opinion, the only handicap is related to the remote control. Especially if you've got arthritis!»

«How do I go upwards with the remote? This thing doesn't get any further...»

«Some features are too cumbersome, the remote is too slow»

Somebody says about slowness:

«The connection is slow. Perhaps, the system too.»

As a matter of fact, at a certain moment (at Elderly Centre "Torrevecchia") people's attention wanders when the functioning of the system is very slow. Some interviewees stand up.

Several people ask if communication by means of EasyReach can be operated only by those who have the same equipment, that is the equipment shown in the room where the test is performed:



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«Can I send a message also to my daughter or only to those who are equipped with these devices?»

«Can I send messages to friends with PCs?»

Someone says that if the system can be used only by few people, the whole operation is not significant.

Several people also ask if the interaction with the system can take place only when the TV set is turned on.

«Do I really have to keep my TV always on in order to use the calendar?»

«If you are waiting for a warning of the system about a medicine to be taken, you must have your TV set always turned on, otherwise you could die!»

Somebody asks information about the costs of the system. To this respect, a person who does not belong to the group of regular participants, but is a listener, says:

«With regard to elderly people, costs must be evaluated, whether they are sustained by a single elderly person or by an elderly centre. Even though the elders find the system interesting, they could be prevented by costs from adopting it.»

Here are considerations about the difficulty of learning to operate the system:

«The problem is being able to use it. I'm not able to send messages even from my cell phone!»

«Anyway, one should learn everything, from A to Z. It is not so easy.»

Someone makes also a negative comment about the password:

«The password is too easy: someone's going to crack it sooner or later! Why not use figures and letters?»

Eventually, two people note that the voices recorded in the audio messages seem to be altered with respect to the real ones.

Although a large segment of the focus groups focused on the negative aspects of the system, the general attitude was mostly positive and people concentrated on improvements when asked to point out at weaknesses. Rather than complaining at services or features, they provided suggestions to get EasyReach closer to their needs. Easier gestures, faster response, more secure password, fast learning curve: the improvements they require can be achieved in future versions to get a system more responding to the elderly people's expectations.

The most important barrier for usage is probably the critical mass needed to make the system useful: the ability to reach also people using web interfaces is considered to be crucial by most of the participants.

2.1.6 SUGGESTIONS (TECHNICAL AND POLICY ASPECTS)

Here are some further suggestions made by the interviewees, mainly regarding improvements and add-ons for the system as well as assistance.

«Can I send a written message through the system? I'd rather have a keyboard, so that traces remain like in official documents: I wrote this to you on that particular day and at that hour...»

«I would like to have a keyboard because I am interested in a written dialogue with someone. For example, I would show a written route for a trip.»

«Could the contact with the external world be added?»

«An instruction manual would be very useful.»

«A good assistance is necessary in order to learn these things. A good help at the beginning and a good maintenance after.»

«It would be also useful to meet sometimes like now in the elderly centre.»

2.2 PERSONAL INTERVIEW RESULTS

2.2.1 INTERVIEWEES CHARACTERISTICS

The analysis of the characteristics of the interviewees in Ponte Mammolo Senior Center shows a sample mostly consisting of females (80%) with a balanced distribution among the different age groups.

Most of the participants have medium education level (80% between “Scuola Secondaria di Primo Grado” and “Scuola Secondaria di Secondo Grado”) and have at least one person living with them (100% of the total).

All the participants do not use computers or use it no more than once a month (100%) and don’t use the Internet or use it maximum once a month (100%).

Table 6. Interviewees characteristics (Rebibbia - Ponte Mammolo)

		Interviewees characteristics				
		M	F			
Sex		1	4			
Age		<60	60-65	66-70	71-75	>75
		0	1	1	2	1
Highest attended school		"SCUOLA PRIMARIA" (age: 6-11)	"SCUOLA SECONDARIA DI PRIMO GRADO" (age: 11-13)	"SCUOLA SECONDARIA DI SECONDO GRADO" (age: 13-18)	UNIVERSITY (beyond 18)	
		1	3	1	0	
People living with		0	1-2	3-4	>4	
		0	2	1	0	
Use of pc		EVERY DAY (1)	FEW TIMES A WEEK (2)	ONCE A WEEK (3)	ONCE A MONTH (4)	NEVER (5)
		0	0	0	4	1
Use of internet		0	0	0	2	1

The analysis of the characteristics of the interviewees in Torrevecchia Senior Center shows a sample consisting of only males (100%) with a peak of participants aged between 60 and 70 (80% of the total).

Most of the participants have medium education level (80% between “Scuola Secondaria di Primo Grado” and “Scuola Secondaria di Secondo Grado”) and have at least one person living with them (60% of the total).

Almost all the participants do not use computers or use it no more than once a month (80%) and don’t use the Internet or use it maximum once a month (100%).

Table 7. Interviewees characteristics (Torrevecchia)

Interviewees characteristics						
	M	F				
Sex	5	0				
	<60	60-65	66-70	71-75	>75	
Age	0	1	3	1	0	
	"SCUOLA PRIMARIA" (age: 6-11)	"SCUOLA SECONDARIA DI PRIMO GRADO" (age: 11-13)	"SCUOLA SECONDARIA DI SECONDO GRADO" (age: 13-18)	UNIVERSITY (beyond 18)		
Highest attended school	0	1	3	1		
	0	1-2	3-4	>4		
People living with	0	2	1	0		
	EVERY DAY (1)	FEW TIMES A WEEK (2)	ONCE A WEEK (3)	ONCE A MONTH (4)	NEVER (5)	
Use of pc	0	0	1	4	0	
Use of internet	0	0	0	4	1	

The analysis of the aggregated data of the characteristics of the interviewed in the two Senior Centers shows a small preponderance of males (60%) with a balanced distribution among the different age groups. Most of the participants have medium education level (80% between “Scuola Secondaria di Primo Grado” and “Scuola Secondaria di Secondo Grado”) and have at least one person living with them (60% of the total). Almost all the participants use computers (80%) and the Internet (60%) about once a month.

Table 8. Interviewees characteristics (Torrevecchia and Rebibbia - Ponte Mammolo)

Interviewees characteristics						
	M	F				
Sex	6	4				
	<60	60-65	66-70	71-75	>75	
Age	0	2	4	3	1	
	"SCUOLA PRIMARIA" (age: 6-11)	"SCUOLA SECONDARIA DI PRIMO GRADO" (age: 11-13)	"SCUOLA SECONDARIA DI SECONDO GRADO" (age: 13-18)	UNIVERSITY (beyond 18)		
Highest attended school	1	4	4	1		
	0	1-2	3-4	>4		
People living with	0	4	2	0		
	EVERY DAY (1)	FEW TIMES A WEEK (2)	ONCE A WEEK (3)	ONCE A MONTH (4)	NEVER (5)	
Use of pc	0	0	1	8	1	
Use of internet	0	0	0	6	4	

As said in Section 3 most of the interviewees are belonging to FNP and can be considered “privileged witnesses” of the elderly world.



2.2.2 ACCEPTANCE

After the Scenario Engagement (SE) trials with the end-users, the post-interviews tried to catch those rough ideas (never ever the experience!) and the attitudes that the interviewees were able to build in spite of everything. It has to be stressed that SE is a rather weak technique in direct people involvement, because the EasyReach end-users accessed by own hands neither the I/O devices nor build the own model of interaction with the system. In this situation only general thoughts were at last collected by questioning individually witnesses who had no chance to refer about direct experience with EasyReach. They largely poured into the presented points of discussion the own personal experience of the old age in real world, in some cases gained by years of attendance at the Senior Centres in Rome and surrounding. The interviews inevitably dealt with the issues of the daily difficulties, the very spread condition of loneliness, and the bare necessities to which poor or no answers at all have ever been given by the existing social policy.

As a whole the single interviews about the reactions in front of EasyReach system facilities brought us to a narrow set of conclusions. All things considered, even though the direct interaction was almost interdicted, the subjects who attended the trials were able to figure their own single ideas of use, scenarios' goals, and service prototype limits as well. They all attended the sessions with a lot of curiosity, showing great interest and willingness especially when the everyday life theme was introduced in the conversation. This set of single interviews was programmed in order to deeper explore the thoughts and the sentiments of some participants just after the trials, by giving them time to think, no pressure and friendly dialog atmosphere. In such a way we were able to group some basic reaction patterns respectively on sentiments, opinions, desires, needs and facts in relation with the hypothetical use of EasyReach in the daily life.

SENTIMENT = feeling, even opinion but behind emotional sensitivity

«However, the system should remain as simple as possible. Now EasyReach seems to be not too complex. The elderly are not old, they are curious. They are not closed and distant. They are full of willingness. This system is a way to stimulate them. As to the operation of the system, how could elderly people solve technical problems? How could they communicate to solve them? If the system doesn't work well, its diffusion will be difficult.»

«It can spare unnecessary travel.»

«It can be useful for non-routine activities, activities different from everyday life.»

«I don't use the Internet, yet I believe I could be more connected to the world than my son who is always online!»

«The login in EasyReach is too simplistic: instead of three icons, I'd rather get a username. I'd feel more protected with a username and a password.»

«The graphical interface is explicit enough, understandable... It seems okay to me.»



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«The general feeling is that the system is complex and not easy to use. The login using pictures seems not very easy to use: why not a password with numbers and letters as in the mobile phone? It is easier to remind than pictures. And what to say of difficulty shown in using the remote control? Personally I would prefer to use a keyboard instead of the remote control.»

«In general the system could avoid social isolation for home bound elderly people.»

«Simplification. Elderly people need simplification to enjoy an easy life. EasyReach should be therefore transparent, integrated into the TV set equipment, so avoiding the crowding of cables and boxes.»

«Subjects were negatively impressed by the huge slowness of the system reactions. EasyReach worked slowly many times. This factor only has been sufficient to make subjects aware and warned about the potential use. The remote control, to be precise, was always very complex, very difficult to be activated, intricate.»

«The personalization of EasyReach, at this regard, gives a significant opportunity by making available a large section of groups, a powerful way to convey both social inclusion and active participation.»

«I could adopt it, if the system would completely inspired to the most absolute ease of use, a system different from that I saw today.»

«EasyReach potentially promotes both the sentiment of sociality and the desire of shared culture.»

«My general impression is positive. For example, the system can be useful for a woman who lives alone. She can contact people and can be not isolated.»

«Yes, if these people are smart and can give a help. No, if this is for gossip. I like to do little works, so I could exchange my experience with others through the system.»

«On the whole EasyReach sets out like an enjoyable system as it gives me the opportunity to organize at distance from home something joyful with my friends.»

«EasyReach seems also to be designed to facilitate the closeness of friends and relatives. Among other things, it seems to be oriented to open towards new friendships, to meet online other people who are sharing the same interests (e.g. we love outbound excursions). I would find this option very useful, I'm just positively considering this advantage as none of us (my husband and I) drives a car and this is very often an unsolvable problem.»

«I think that the automatic help given by the system (that opening to other people never met before but sharing common interests) might come to be very useful (specially for groups of elderly), in order to find general purpose information when I don't find them on first attempt among friends and relatives.»

«I think it would be wonderful if through EasyReach elderly people can access some of the Public Administration services, especially if someone is not a PC user or hasn't a connection to online. I just think



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of how much difficult is currently to get some of PA forms. By using EasyReach there should be a countless advantage, less fatigue and queues as well.»

«I don't feel myself as elderly but I guess others of my same age due to illness and other causes can feel so. However the system is not easy to use, see the gestures needed to use the remote control. The device has a lot of surprising facilities however it is not a proper designed tool for elderly. Just think to the gestures complication for those people affected by arthrosis or other similar pains.»

«This system could allow me to get out from the daily routine.»

«The system in general is pleasant to use. Icons are adequate. The adopted log in procedure using a password based on images is easier to remind in comparison to a password based on numbers and letters.»

«I don't like the remote control. It should be facilitated and improved. The use of gesture is not opportune for elderly people.»

«Sending messages is very difficult. Same or worse at receiving and managing them when they are numerous.»

«Especially for emergency, EasyReach could act like as anti-panic system at psychological level. I mean, EasyReach tells me who is online, therefore I know promptly who can be contacted in case I need some help.»

«Social network: if the goal is to shoot down the sense of isolation, I find the EasyReach idea very laudable. It seems it can mitigate the loneliness and other moments potentially sad of the day.»

«It is an opportunity in any case, the most positive feature of EasyReach is the information exchange between individuals or friends not using PC and keyboard, and the access to communities of shared interests.»

«Pictures and video are comically made available throughout the remote control device. There is no visual feedback, so people using it wave their hands funnily in the air. For sure this is a seriously negative aspect.»

«The log in using icons is ok, colors of the page are delightful, but also the other pages are more or less pleasant at view. The disposition of buttons and services seem to be appropriate in the page, easy to get. Log in by three icons is ok, if there aren't overlapping with other passwords. Maybe the possibility to use a virtual keyboard has to be considered.»

This first section sets out the whole sentiments of the elderly towards EasyReach system facilities and the idea of such a service. From a general point of view, the EasyReach service has been accepted in spite of the deep difficulties in the direct interaction (i.e. the huge slowness and the inadequate remote control). The system stimulates the elderly curiosity and as well as it opens the horizon to several possibilities which can



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help the daily life. From the distance, it appears even not so complex and the solutions provided were accepted as useful especially to be connected to the outdoor world. EasyReach has been seen as a possibility to win the sense of isolation as it potentially promotes both the sentiment of sociality and the desire of shared culture.

OPINION = judge, opinion or idea behind reasoning

«The EasyReach system could be very good for people with problems or people who live alone. It would be useful for those who need to communicate because of their isolation. They are a large number. I don't know to what extent the system could be expanded towards external institutions, but it would be really innovative if it were an open system. At the very end, the most important problems of elders are related to Public Administration and health care.

Today, in general elderly people are alone. The system could be a key point for them. It could help elderly people to socialize. This is true not only for people with illnesses or handicaps.»

«It is helpful to stay in touch with distant relatives.»

«I understand that sending a photo might greatly improve the efficacy of a message.»

«Elderly Centres tend to ghettoize, to form closed groups, whereas EasyReach could be an always open window to the world. EasyReach could help me get in contact with people sharing my interests.»

«I wouldn't clog the system with too much content, otherwise it gets distorted: sooner or later everybody will be on the Internet, therefore it's better to preserve the EasyReach specificities.»

«My willingness to pay would be highly related to costs.»

«EasyReach could be useful as connection among different senior centers: discussions, conferences, theatre representations, dance competitions (for instance to show videos to other senior centers).»

«Very useful for the elderly could be the possibility to interact with the Public Administration.»

«Connections to the Public Administration for health and welfare.»

«I would be available to pay only for health services and for welfare services.»

«EasyReach should be mostly configured to give useful support to the social local life. In fact, a person doesn't necessarily need to contact another who lives in Paris or in Honolulu, even though, I am aware, who has relatives in Australia can use EasyReach to achieve this opportunity. It is an opportunity for socializing and increasing people quality of life.»

«EasyReach could be very useful to circulate or deliver many important information to the elderly community, such as those social and economic subsidies, tax breaks, and several benefits of which many



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people ignore to this day the existence". The main elderly need is of outstanding use. For example, very few of them know of the electricity and gas bonus, the social card, the free season ticket for bus and underground, the TV bonus even, etc. As they don't know, unfortunately they cannot benefit even though they need.»

«Moreover, EasyReach should be provided for free to the most disadvantaged elderly people, including assistance and maintenance as well. These are those who when they need some help they don't know where to turn. If EasyReach were able to provide all that, i.e. a powerful communication system and an active social network, easy to use and well working, it would be the optimal solution for many of them.»

«Groups are a key feature to EasyReach, also in supporting the general acceptance of the entire platform (of services). This statement means that subjects could even pass over some minor lacks of the system (never over the remote control or the slowness!) and, if all worked well, they could accept the system en bloc, because they believe the above goal worthy of great respect and sharing.»

«It is important to be able to contact public services, such as emergency ward, physicians and ambulance services.»

«As for the sensitive information circulating (family pictures, etc.), at the moment I think to have no problems about privacy. Personally as far as I have no secrets for nobody identically I have no restrictions. In addition, I can decide previously whether to share something in the social network or not. If I don't want others to see my pictures simply I don't publish them.»

«In general the system helps in reducing the sense of loneliness and the consequent scare of feeling lost.»

«About contacting people never met before I think one must be prudent. However I find interesting to know new people in my neighbourhood.»

«I think the system useful for health care and (interactive) calendar. As for emergencies a phone call is faster.»

«It's possible to pay, however there are many things to be improved or included, one out all trainers must go to users' home to provide practical assistance and support.»

«Regarding the privacy, I don't know if EasyReach defends it. On the other hand, if nobody uploads sensitive information, like the IBAN code, the problem doesn't exist. In this version of EasyReach, I mean, it's only a matter of good sense.»

«Regarding the cost or what I could be willing to pay for this system, I think it is not really a question of how much to pay. I mean, if I had back a useful service I would be willing to pay for it without conditions. Just to give an example, if the service is so important to preserve my health or seriously to save my life, it is priceless. I want it, because security and safety are both very important to me. If the service increases the quality of my life I will be certainly happy to get it.»



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This collection of opinions are a large number, however they converge to few clear points which address at improving either functionalities and overall performance in view of a possible indoor use. First of all the contact with the Public Administration, currently very complex and problematic to them, could be introduced but simplified through the *EasyReach* channels, especially to help those people with illness or handicap. Secondly, the necessity to improve the health care has been pointed out as one of the basic lines to guide the future service developments. Third, in matter of personal security, many cases have reported about a subtle and persistent fear, a reason of constant anxiety due to some responsible social co-factors, not last the loneliness. At this regard, the fact to stay constantly in touch, share the same interests, participate more actively to the local social life, might produce the effect to create a great sense of serenity. At last, as for the willingness to pay for such a service, aged people have only one shared and reasonable opinion: yes, if it improves the quality of life.

DESIRE = want, even dream

«The elders are not fool or stupid. Simply, they are no longer in a hurry. Each day is a Sunday and the month of August for them. I trust in elderly people. I'm optimistic. The problem is often that they are not given a chance.»

«It would be useful to get in touch with the Elderly Centre from home.»

«I'd appreciate the possibility to read a few newspaper articles in EasyReach»

«It would be helpful to connect EasyReach to networks of home care.»

«It would be important to access EasyReach from different points, the elderly by the TV and the teenagers by their PC or tablet.»

«A possible expansion of EasyReach should be to help who suffers of mental disease (i.e. depression) to receive psychological support by a connection to health professional center.»

«Speak at distance with the doctor and to see the doctor.»

«In my mind EasyReach could powerfully promote and activate the reciprocal assistance in the elderly community.»

«It would be great. I'm a household, once I have finished my daily homework, I could even make new friendships on this social network. If I understand correctly EasyReach could give me this option.»

«Connection to the Police department may be important, it may give a sense of higher protection, as very often aged people are victims by frauds and tricks. In our zone actually there are daily episodes of delinquency.»



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«I'd like to play some games with it to take my mind always in exercise. I would like to find a section of games among the services delivered by the system. I have also in mind real time games to be engaged with other people on-line like me.»

«I was actually very disappointed of that as I expected in a different way the services delivered to the user. Once more, I am inclined to believe that a vocal based interaction would lead to a very different result.»

The most important desire is concerning the fact that in very many cases elderly are not given a chance. They don't feel or think they were given a clear possibility for example to learn new ICT devices, to update their knowledge about, to lower the digital divide, to be of some help to the society by making available their huge experiences. They are not fool or stupid, only they have different basic needs and times of reaction. They are incline to promote and activate reciprocal assistance, appreciate the possibility to help and receive help in case of need, be constantly connected to their relatives, and as well as give suggestions to improve the quality of many social service delivering.

NEED = necessity, manifest requirement, either material, psychological or social

«Nowadays, the elderly are not acquainted with the facts and problems, thus it would be very important if they were given the possibility of being informed about political and social aspects and events.»

«Actually, from a system like EasyReach, elderly expect effective answers to their elementary needs, as just mentioned, above all those who belong to the lowest income brackets.»

«I would use the system at home for socialisation. I am single since my wife is dead. I have very few friends (three old friends). I have problems in interaction with other people "in presence" for instance also during this interview. I would feel more comfortable and calm in expressing my opinions, sensations, concepts, etc. This is true in interactions with unknown people. I would use EasyReach to establish new contacts with unknown people having my same interests (I am interested specially in cinema, football, cooking). After this first knowledge next contacts for me should be comfortable also "in presence".»

«EasyReach at the Senior Center can be configured as a tool for use by group. I feel it useful in increasing the interchange between elderly centers. It could fill in a current gap, the lack of information, new ideas, good practices and experiences.»

Sometimes elderly are not very acquainted with facts and problems of the outdoor nearby social life. It is not a fault to ascribe to anyone. Their resources are very often strongly taken to satisfy elementary needs, the minds diverted elsewhere, especially of all those who fall in the lowest income brackets. EasyReach could really help these people by giving simple answers to simple needs, either material or social. For example, EasyReach could be configured as a tool for use by group, so including all, those familiar and not familiar to technology, so introducing a sort of good practice to share culture and useful information.



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FACT (OUTCOME) = observed truth, occurrence, empirical data, information from direct experience (In this case experience cannot be direct!)

«Elderly people need new skills to use ICT, complexity of the GUI and services have to be lowered, especially if interactions with PA are proposed.»

«The system should be very simple because elderly don't have the necessary skills for use.»

«Parental control by sons and grandchildren generally is not active 24h/day, due to many reasons. EasyReach could fill in this lack in some manner.»

«I don't like the remote control device. I feel it very inadequate. Perhaps it could be better a different way to interact, I don't know, for example by voice.»

«A clear negative aspect is the remote control device. It goes doubtless out of an effective user control. Gestures are very challenging to be done, even though after long training. Moreover, looking at the scenario engagement presentation, even the operator himself never got the same system responses.»

Most of the time aged people need new skills to use ICT devices. It is a matter of fact that they see technology like a barrier too high to be overcome. This basic requirement has originally inspired EasyReach to be as much easy as possible, however not all the functions developed have perfectly matched the end-users skills and mental model. The "digital" complexity of the structure couldn't be smoothed or totally lowered. Crucial elements in the design of the user system interaction showed very inadequate. Sometimes the same end users specified ways to improve or remove these faults. The remote control is at the top, it is out of an effective user control, then gestures follow as they are very challenging to be done.

BEHAVIOUR RESISTANCE = resistance to change, diffidence, caution, prudence

«I use a mobile phone only to call... maybe I took a dozen pictures with it in my entire life, therefore I am not much interested in multimedia.»

«I buy three newspaper every day and I think I can perfectly interpret the world even without the Internet. I am not on the Internet because there is an overcrowding of news, but without any insights. When something is too quick (like the PC) or too intrusive (like the cell phone constantly ringing for SMSs) I tend to shy away.»

«The login using pictures seems not very easy to use: why not a password with numbers and letters as in the mobile phone? It is easier to remind than pictures.»

«At home I have the TV set connected to the PC. I have a hard disk connected to the TV set and I can store the high definition movies. It was my son-in-law who helped me to set up this system. However I don't use it very often because I found it complex and not easy to use.»



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«Elderly people should be educated. They should reach “safe” information through training. First of all, we must take care of vulnerable elders. They should be taken back to a “normal” condition.»

«It is difficult, for the elders, to stay in touch with the friends they already have. Why should we cause a risk to them? It's better to avoid it.»

«The life of elderly people is already full. What are the advantages for them of getting in touch with new people? They have no time. The elders have got their friends and they prefer to meet in real with them. The risk is forcing them to do what we see in some TV shows.»

«I tried (...) but the desire to navigate the Internet dies down, the search engine – ref. Google – is unintelligible by me (...) with all those results! Hence, all attempts addressed to increase the access to the Internet social services are welcome, along with the attempts to reduce the digital exclusion and the suffering from the social isolation.»

«In general, I am not inclined to share photos, especially at my age. But, if there is an important event, such as a special party or a first Communion, in this case I am favourable.»

Resistances to change can be assigned in general to every class of people independently from the age. As for the behaviour resistance concerning the adoption of EasyReach by elderly, it is subject to a narrow set of factors mostly ascribed to the difficulty of modifying personal habits if a proposed innovation doesn't convince or respond to a basic need. Unfortunately EasyReach, besides some positive aspects, also transferred this important sentiment. A relevant part of the elderly were not convinced at all of the potential advantages introduced by EasyReach. They strongly remained tied to their habits, even though they didn't hide the desire to explore new horizons, to better know the new ICT devices, often given by relatives to constantly remain in touch, to do something innovative which make them happy.

3. CONCLUSIONS

During the Roma pilot a “mediated experience” of the elderly person with the EasyReach system was realised in a live scenario demonstration where elderly audience was supported in the interaction with the EasyReach system (scenario engagement).

The scenario engagement methodology was effectively utilised during the trials. The subjects who attended the trials were able to figure their own single ideas of use, scenarios' goals and service prototype limits as well. They all attended the sessions with a lot of curiosity, showing great interest and willingness to contribute.

The main objective of the Roma pilot was to investigate acceptance of the EasyReach solution by elderly people in a real environment.

Referring to the user acceptance UTAUT model [2] [5] [6], the perceived usefulness is one of the main factors affecting usage and acceptance of a technological solution.



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In this respect, many people participating in the group interviews say that the EasyReach system is useful. Some of them are even enthusiastic. In general, they say that the system can be used especially by people who stay at home and live alone, by disabled people, by those who are sick.

The need to stay in touch is a primary driver for most, if not all, of the elderly people. Retirement from an active working life is a turning point in their lives and the feeling of being left at the margins of society often appears under different aspects.

Some of them fill this void by actively engaging in a series of activities at the elderly centers (theatre, excursions, card games...), others concentrate on babysitting grandchildren, others stay at home with a passive attitude of wait.

The mere idea of interacting with a brand new piece of technology like EasyReach sparkles their imagination as they no longer feel left out by the technology fever in modern society: they can still be part of it.

The EasyReach system is considered useful because of several reasons. It is perceived as a way of spending the day and meeting new people, to be used to contact people one wouldn't encounter otherwise or to reach many people at the same time.

Sending messages can help sharing information and interests. As an example, dance, cinema, books and plays could be interesting to be shared. Card games could be organized too.

Although the focus of the EasyReach project was on communication, the recurrence of the health theme in the answers strongly suggests an integration with medical or health related services in future versions of the system.

The perception of usefulness of each service provided by EasyReach was investigated in depth. Even if participants belong to the group of non-users of the Internet, yet many of them have a (dim or strong) perception of the many benefits that can be achieved online. When they look at EasyReach, a system proposed as a communication system, they see beyond that and fancy a whole range of services they could use to make their lives better. The communication facilities are indispensable, yet they want more, asking EasyReach to bridge the gap between them and public administrations, pension systems, healthcare, social service, emergency providers and so on.

Several interviewees say that the system facilities relevant to the calendar and the "groups of interest" are useful and effective. In general, they say that there aren't any useless facilities.

The pleasantness of use was also investigated as an important aspect affecting usage and acceptance.

The interviewees in the group interviews say that the system is excellent, nice, pleasant, simple enough to use. The graphical interface is a crucial aspect for people who start to have sight problems. Equipping a large TV screen and designing large and coloured icons definitely improved the pleasantness of use for this group of people.

Following the UTAUT model, the intention of future service usage (at home and at the senior Center) was investigated.

A whole gamut of intentions has been gathered about the use of the system. As a matter of fact, they span from negative to enthusiastic reactions, passing through balanced attitudes.

The colourful variety of different statements about intention to use reflects the spectrum of different attitudes towards life in general that elderly people have. A classification is complicated and somehow redundant, yet the micro-universe of the group interviews includes technology enthusiasts, total rejecters, seriously or superficially curious people, snobbish persons, money savvy customers... In order to really understand



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intention to use, more extensive trials are needed, with users getting their hands at EasyReach for a continuous period of time.

The users were also asked to point out the most negative aspects of the EasyReach solution for future improvements.

Although a large segment of the group interview focused on the negative aspects of the system, the general attitude was mostly positive and people concentrated on improvements when asked to point out at weaknesses. Rather than complaining at services or features, they provided suggestions to get EasyReach closer to their needs. Easier gestures, faster response, more secure passwords, fast learning curve: the improvements they require can be achieved in future versions to get a system more responding to the elderly people's expectations.

The most important barrier for usage is probably the critical mass needed to make the system useful: the ability to reach also people using web interfaces is considered to be crucial by most of the participants.

The personal interviews to “privileged witnesses” confirm the potential of EasyReach for improve quality of life of elderly people in spite of the perceived difficulties in the direct interaction (i.e. the huge slowness and the inadequate remote control). The system stimulates the elderly curiosity and as well as it opens the horizon to several possibilities which can help the daily life. It appears not so complex and the solutions provided were accepted as useful especially to be connected to the outdoor world. EasyReach has been seen as a possibility to win the sense of isolation as it potentially promotes both the sentiment of sociality and the desire of shared culture.

From personal interviews a few clear points which address at improving either functionalities and overall performance in view of a possible use at home emerged. First of all, even in this case the contact with the Public Administration, currently very complex and problematic for them, could be introduced but simplified through the EasyReach channels, especially to help those people with illnesses or handicaps. Secondly, the necessity to improve health care has been pointed out as one of the basic lines to guide the future service developments. Thirdly, regarding personal security, many cases have reported about a subtle and persistent fear, a reason of constant anxiety due to some responsible social co-factors, not last the loneliness. To this regard, the fact to stay constantly in touch, share the same interests, participate more actively to the local social life, might produce the effect to create a great sense of serenity. At last, as for the willingness to pay for such a service, aged people have only one shared and reasonable opinion: yes, if it improves the quality of life.

Finally, another relevant point concerns the perceived ease of use of the system. Crucial elements in the design of the user system interaction proved to be very inadequate such as the remote control and the use of the gestures, both appearing not easy to be operated by elderly people.



Part 2 – Pilot in Milano

1. OBJECTIVES AND METHODOLOGY

According to the new guidelines agreed after the preliminary trials carried out at Fondazione Ugo Bordonni (Roma) and at FIMI (Milano), the original objectives of the pilot in Milano were revised as follows:

- To test the EasyReach services in a real environment (senior centers) and with the involvement of elderly people;
- To evaluate user acceptance of the in the EasyReach project about:
 - Usability of the devices,
 - Potential users,
 - Possible future scenarios.

Methodology

Four User Forums were organized to test the efficacy of the concept of the EasyReach service, focusing also on its usability. Thanks to ANCeSCAO – a national Association of Senior Centres – older adults from 4 small towns in the area of Milano (Casarile, Buscate, Vanzaghello and Gessate) were involved: all the elderly volunteered to undertake the groups where the EasyReach project was explained and performed through a short demo.

- *Participants*

Older adults took part to the meetings as described in the table below and figure 6.

Table 9. User Forum Calendar

DATE	TOWN	PARTICIPANTS
9/5/2013	Casarile	13 (9 male, 4 female)
20/5/2013	Buscate	16 (5 male, 11 female)
21/5/2013	Vanzaghello	22 (14 male, 8 female)
29/5/2013	Gessate	11 (9 male, 2 female)

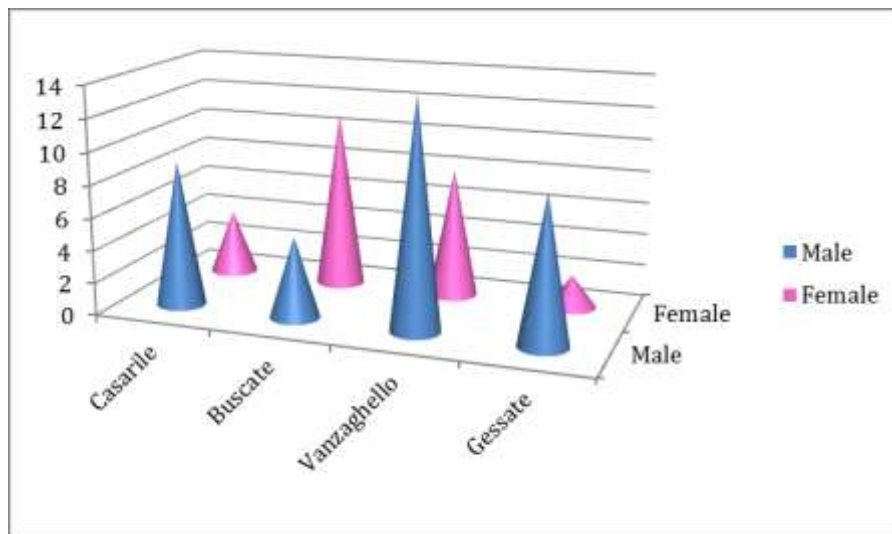


Figure 6. Distribution of User in the four meetings

The total sample was composed by 62 older adults (37 male, 25 female) with a mean age of 68.65 (SD = 5.88)

- *Procedure*

All the User Forums shared the same structure, lasting 2 hours. After welcoming the participants and installing the EasyReach equipment following the technical settings, a researcher with specific expertise in evaluation with end-users introduced the project (Figure 7). At first, there was an explanation of the main ideas: a Powerpoint slideshow was used as a trigger to let people understand the main concepts and then allow them to make questions about the basic functionalities. A second phase included the demo of the system: the users interacted with the system by testing selected functionalities of the platform.

In some cases specific demo applications were developed by the technicians to show the functioning of the system in a limited setting, avoiding possible malfunctioning due to unstable Internet connection, for example.



Figure 7. Showing EasyReach

The users' questions during the first phases were limited to the technical aspects so that it was possible to complete the overview of the system in 30/40 minutes.

Then, users were encouraged to interact with the remote control in an ad hoc technological environment developed for the User Forums. Each of them selected the task he/she would like to perform with the remote control: for example, take pictures of the groups and create small video clips that were later showed by the system.

Almost all the elderly participants were involved in these group activities.

After the explanation and the demonstration, a summary was given and then the discussion started.

It was important for the researcher to guide the older adults and keep their focus on the technical solutions demonstrated and on the main concept: otherwise the risk could be to get lost arguing about specific details or social issues (for example, the policies to fight the loneliness of elderly), forgetting the real purpose of the meeting. To this aim, a detailed and clear summary was done and every user was encouraged to listen to the opinions of the others before sharing his/her own ones.

After the group discussion, participants were asked to fill-in an anonymous questionnaire to gather their main ideas towards the EasyReach project (Figure 8). Their work was guided by the researcher: even if the questionnaire (see Annex 7) was created to be very simple and easy to read (for example, through big fonts), it was crucial to be sure that all the users understood what each item was asking in order to provide correct feedbacks. The functionalities were explained through real examples of activities in order to let user known what they were rating; in such way it was easier for them to refer to a specific technical solution rather than to an abstract, wider concept. Further, the researcher explained the link between the example and the leading idea behind it.



Figure 8. Filling questionnaires in Buscate and Vanzaghello

Table 9. Schema of a User Forum

DURATION	PHASE	DESCRIPTION
30 min	PRELIMINAR PHASE: Installation of the system and arrival of the users	The researcher set up the system and test its functioning; then, users were welcome at the senior centres
30 min	PRESENTATION and DEMONSTRATION: Demo about the main functionalities of the system	Explanation of the project and its development; then, interactive demo of the system
40 min	GROUP DISCUSSION	A group discussion was encouraged, trying to create a link between the opinions expressed and what was previously shown
20 min	QUESTIONNAIRES	Participants wrote down their personal ideas through an ad hoc questionnaire

2. RESULTS

The results reported were gathered by two sources:

- The analysis of the questionnaires through a specific software;
- The transcription of the most interesting feedbacks from the group discussions.

The first kind of data allows us to get a general overview about the acceptance of the EasyReach system and its main functionalities: this preliminary survey offers guidelines supported by a good number of users and feedbacks. The second kind of data allows to analyze in depth the opinions of the users and try to collect suggestions that are not limited to the demonstration, but also related to possible future scenarios and applications of the EasyReach system.

2.1 RESULTS COLLECTED THROUGH THE QUESTIONNAIRES

The initial request to the users was to create a rank of the different functionalities demonstrated: to this end, they had to write down a number from 1 (the most useful application) to 6 (the least useful) next to the description of the functionalities. Here below the results are reported for each functionalities and then an overview is given.

A. USEFULNESS OF THE DIFFERENT APPLICATIONS

A1. Talking to friends (single person)

Talking to friends through the EasyReach system is considered the most valuable application by one third of the participants: this looks promising for the idea of the service as a resource for user-to-user communication. This application is crucial for EasyReach and it is appreciated, still it is also very criticized: the basic assumption is that a dyadic relationship cannot be managed through a technological environment

because it is too “cold”. This is emphasized by the trend that is decreasing from 1 to 5 but it has also a peak corresponding to 6 (Figure 9).

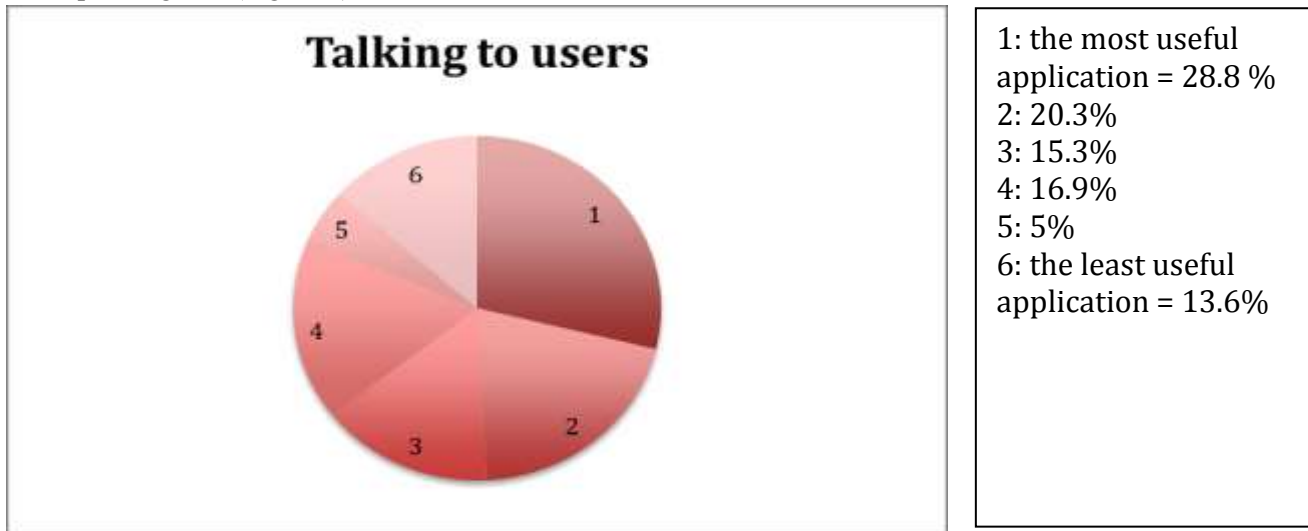


Figure 9. Usefulness of talking to other users via EasyReach

A2. Talking to groups

Creating and participating to groups dealing with many different topics is an application that allows the whole system to look like a social network that shares contents: it represents in EasyReach the basic tool to create a virtual community. The judgment of the users is similar to the general possibility to talk to other users highlighted above (Figure 10). Still, there is one difference: the skepticism seems smaller, in fact the score of the value “6” is the lowest one. It seems that this kind of communication looks better to elderly because the role of technology in enhancing the communication among groups of people is probably more tolerated than between two single persons.

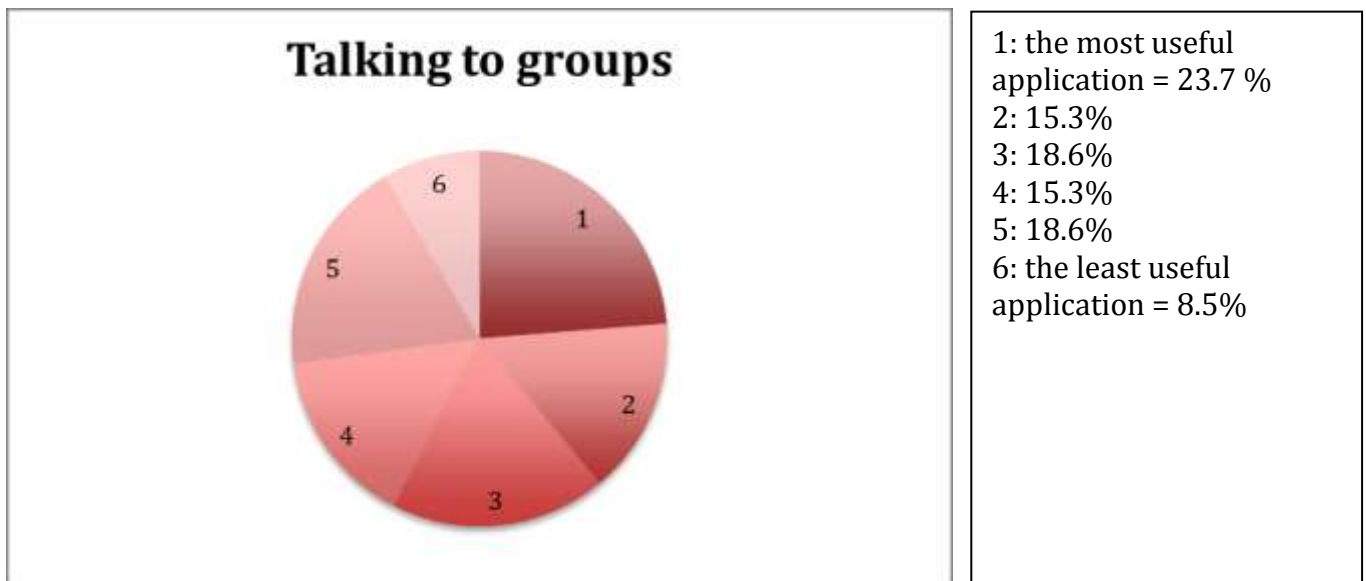


Figure 10. Usefulness of talking to groups via EasyReach

A3. Store photos and videos

The remote control is able to take pictures and to capture a video clip that users can share on the EasyReach platform. A possible use of this functionality is to create a sort of private (or shared) list of artifacts through which the users can collect memories. Anyway, this possibility is not much appreciated: only one user rated it the best, while the most common scores were 5 and 6 (Figure 11). This sounds like a hint to not develop any further the storage of the media clips created; the preference is in allowing only to share them instantly without leaving them in a private repository.

Please note that the evaluation of the technical ability and ease of creating media clips with the remote control is different from this application and it will be specifically analyzed through the following items about the usability of the remote control itself.

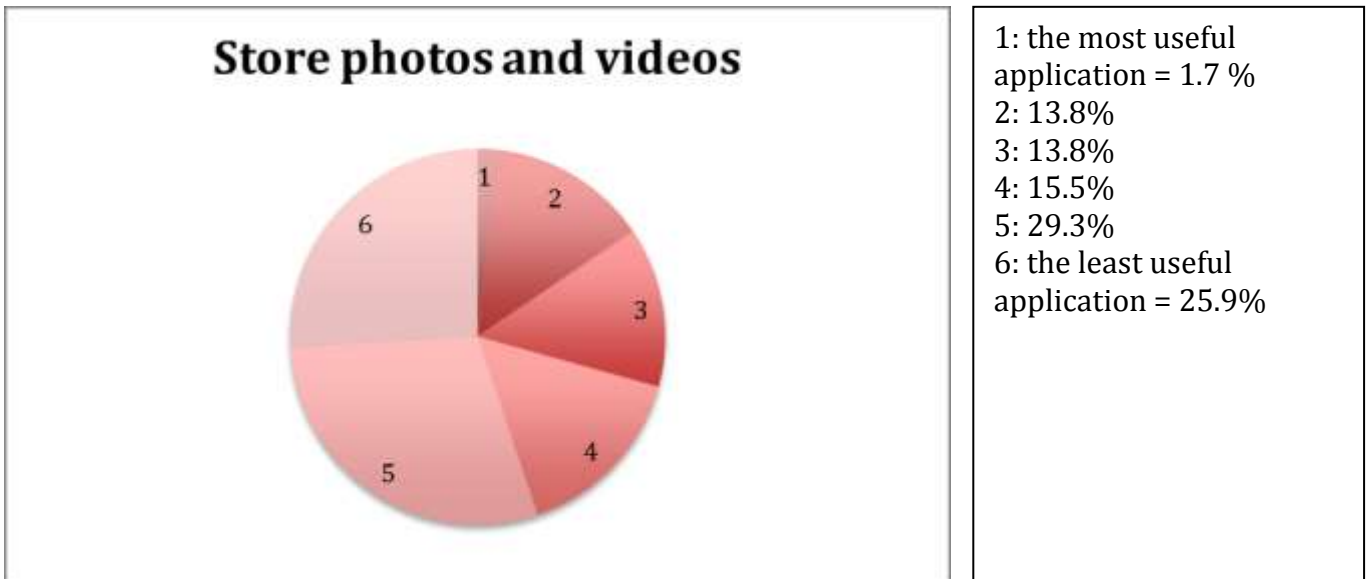


Figure 11. Usefulness of storing photos and videos via EasyReach

A4. Reminder

Another service offered by the EasyReach platform is related to the reminder (calendar): each user can set a specific time of the day and register an audio clip that will be played later at the selected time. It is quite separated from the rest of the applications because it is “personal” and not shared with other persons. The rating is better than the previous service, still the appreciation is low (Figure 12). The highest score is 3 and the second one is 6: in general, the majority of user ranked this application from 4 to 6. Anyway, it is also noticeable that for the 8.5 % of our sample this was considered as the best application.

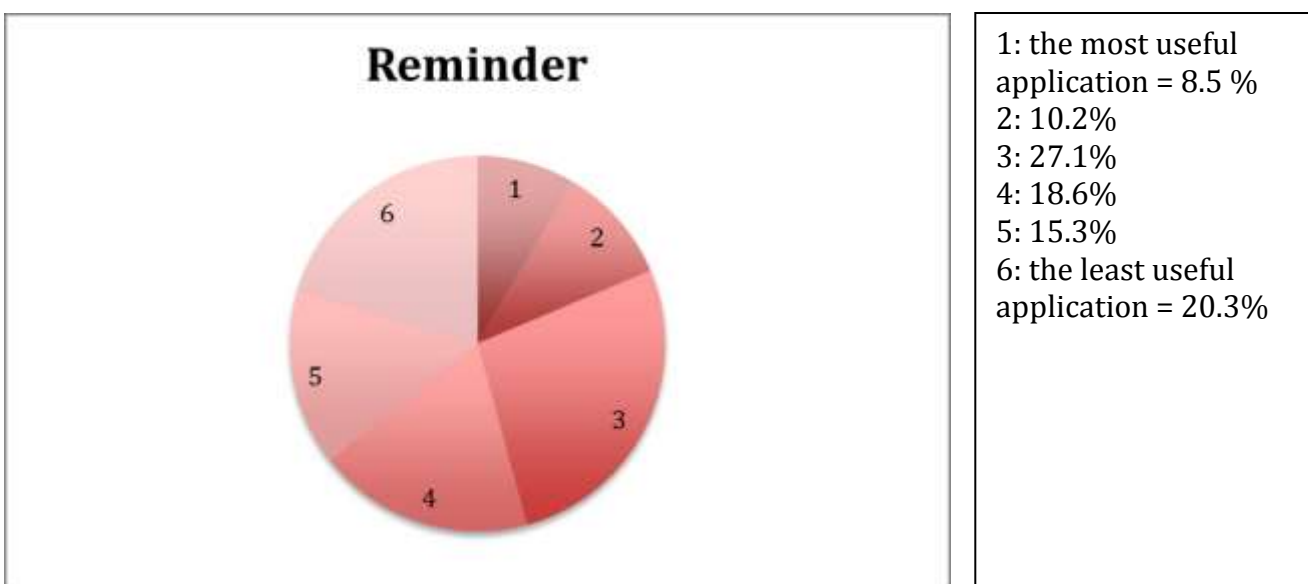


Figure 12. Usefulness of the use of reminder via EasyReach

A5. News from real groups

EasyReach provides also news to keep the user updated: besides the ones gathered by other users (private or groups), a possible use is related to real groups (e.g. Associations, Senior Centers) that stay in touch with their members (or even virtual ones that do not take part to the activities of the Group) via the EasyReach system and communicate with them to send warnings, reminder or any other news related to the Group. Undoubtedly this possibility is much appreciated by the users: more than a quarter of them rated it as the best one and summing up the scores related to the first two places (rates 1 and 2) we almost reach the half of the respondents (49.1%) (Figure 13).

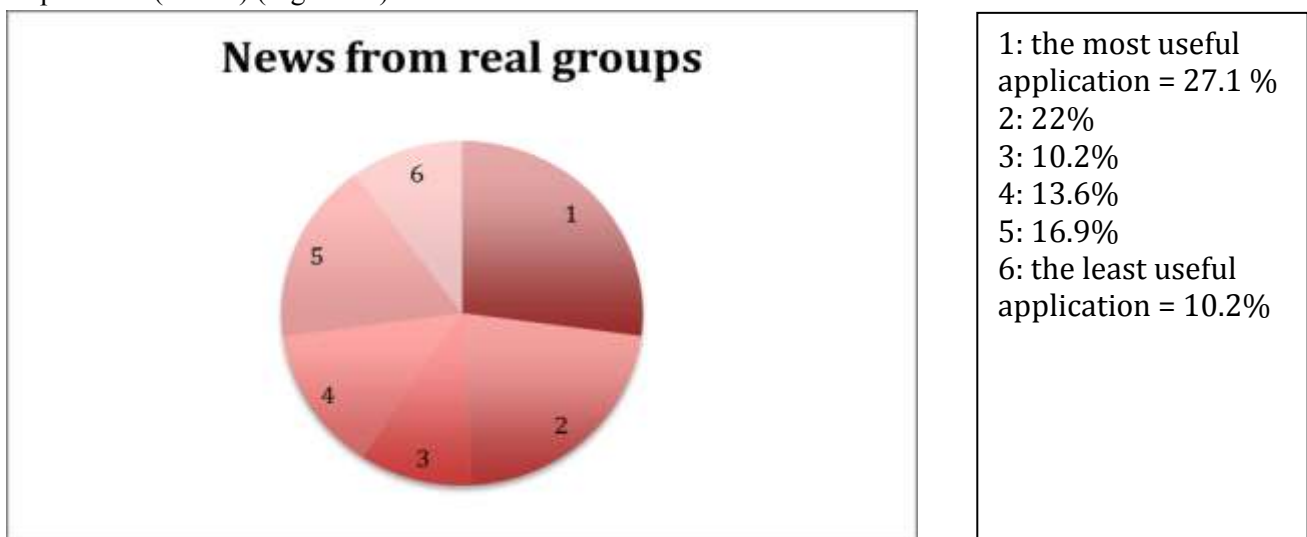


Figure 13. Usefulness of having news from real groups via EasyReach

A6. News from the world

The last application evaluated was the tool that aggregates news from selected websites to show it to EasyReach users divided into specific categories such as nature, sport, travel and society. One of its advantages is also that only the text is shown, without banner or unrelated pictures. This application is appreciated by older adults: like the previous one (news from real groups) more than a quarter of users rate it as the best one (Figure 14). The total distribution among the six levels is very similar to the previous one: here the appreciation is even bigger because summing up 1, 2 and 3 the total is 64.3% instead of 59.3%.

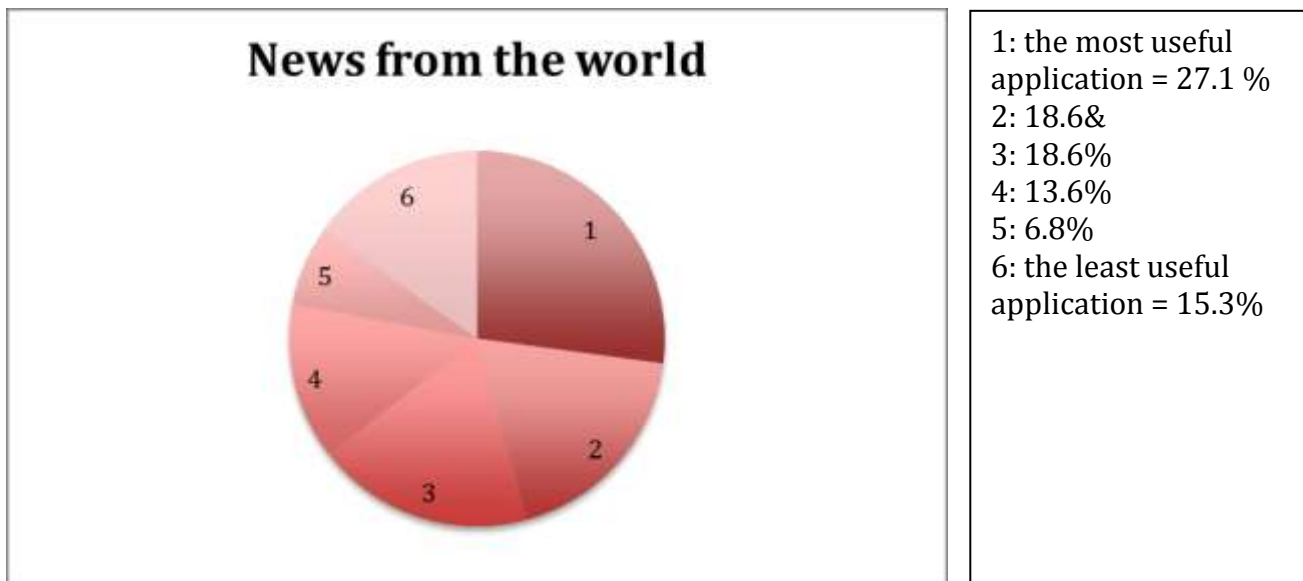


Figure 14. Usefulness of having worldwide news via EasyReach

In conclusion, it is necessary to underline that the initial request was to give to each application a different rank, but then participants asked about the possibility of giving the same rank to different applications that they wanted to rate equally. So, the total amount of the scores “1” went beyond the percentage of 100%.

A7. Comparison between the different applications

A comparison between the various applications allows us to identify the position of each one in a global classification made up by all the participants. Data are reported in the table below.

Table 11. Average rating of the various functionalities

	Mean Value (Standard Deviation)	Hypothetical position
Talking to friends	2.90 (1.73)	1
Talking to groups	3.15 (1.77)	5
Store photos and videos	4.34 (1.45)	6
Reminder	3.83 (1.55)	4
News from real groups	3.02 (1.76)	3
News from the world	3.00 (1.76)	2

Talking to friends is the application that users liked the most: then, there are the applications related to getting news from the EasyReach service. At the bottom of our classification we find the use of the reminder and the possibility to store photos and videos. These two last applications were probably perceived far from the main core of the project and thus less useful: the gap is quite big so it is possible to state that they could be removed from the system in order to simplify the structure of the service. Avoiding technological things that are not strictly necessary is always a goal when developing services with elderly: the service will result easier and each user will need to learn less commands.

It is also interesting that the two main dimensions of the EasyReach platform both meet a good agreement by users: communication and information are of equal importance so a mixed use is suggested. This means the creation of a social community that shares information while communicating and discusses on the news disclosed via the same portal hosting the community.

A last graph (Figure 15) allows us to better underline this difference. A decreasing trend is noticeable for “Talking to friends”, “Talking to groups”, “News from the real groups” and “News from the world”; it means that these four applications are always top-ranked rather than low-ranked. On the contrary an opposite trend is typical of “Reminder” and “Store photos and videos”.

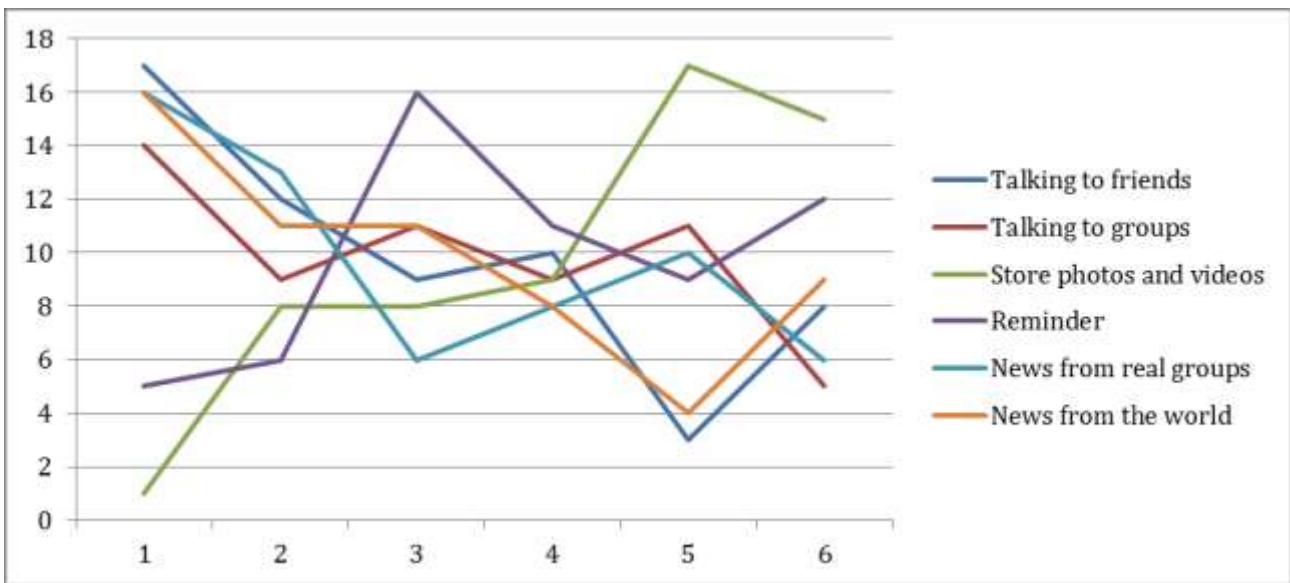


Figure 15. Usefulness of the various applications of EasyReach

It is also worth noting that three of these four best applications have a peak on value 6 that contrasts the decreasing trend from 1 to 5; in this respect “Talking to groups” seems to be the best one because is undoubtedly the one users are less skeptical about (“6” score is the lowest one). Probably, elderly people consider the possibility to talk to groups the most typical application of the EasyReach service: this could then be identified as the key idea that can be spread to engage future users.

B. USABILITY OF THE REMOTE CONTROL

The second part of the questionnaire investigated some critical usability issues about the remote control: it is the key device of the project because it allows to remove some common barriers between old users and technology (e.g., keyboard and mouse).

B1. Functionalities of the remote control

At first, our participants were asked to evaluate the functionalities of the remote control: when explaining its operation during the User Forums, the fact that it can take picture and videos interested a lot the users. The questionnaire asked to rate its key features on scales from “1” (I do not like at all) to “4” (I like very much). Results are reported in the table below.

Table 12 - Functionalities of the remote control

Functionality	Mean Value (SD)
Gestures	3.51 (.60)
Take pictures	3.00 (.73)
Create media clip (audio and video)	2.89 (.94)

The best score is related to the possibility of controlling the platform through gestures: its value is very high, next to the maximum. The other innovative characteristics that shocked the users during the explanation of the project are also appreciated, but their scores are lower.

The technological level of all the three functionalities was similar: all of them were performed in a safe environment, without showing their full potential in the real platform. So, the difference is not linked to a possible higher difficulty in creating the multimedia artifacts. The participants probably consider that the gestures are more important than the other functionalities because their role is crucial in getting them closer to a higher technological level. Communicating through simple gestures seems more useful than taking pictures and videos, even if these applications are probably more engaging; older users show a major interest in practical solutions than “appealing and surprising ones”.

B2. Usability of the remote control

The remote control was also assessed from a practical perspective, i.e. about its real usability: users could handle it so they could immediately report about the perceived feeling. Again, the questionnaire asked to rate three key characteristics on scales from “1” (I do not like at all) to “4” (I like very much). Results are reported in the table below.

Table 12. Usability of the remote control

Usability issue	Mean Value (SD)
Comfort	3.32 (.52)
Practice	3.09 (.67)
Functioning	3.05 (.62)

The results show a positive impact with the remote control: even if its shape is not particularly “innovative” (it is a simple white parallelepiped) they rated it good, comfortable and practical; they judged that it is not too heavy and it is easy to move. The difference between the comfort (3.32) and practice and functioning (3.09 and 3.05) is probably due to the possible malfunctioning related to these last two characteristics that do not affect the comfort of the device.

C. EASE OF USE OF THE OVERALL EASYREACH SYSTEM

The remaining items of the questionnaire required open answers or mixed close-open answers: the first one investigated about whether the EasyReach solution could fill the gap between older users and technology (Internet above all) more than usual devices (mainly computers). Participants could answer “Yes”, “No” or both, adding then the reasons why.

Does EasyReach improve the connection between users and technology?

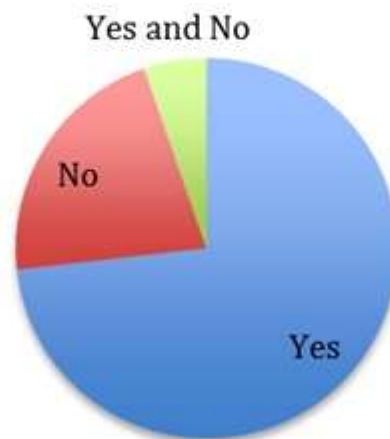


Figure 19. Does EasyReach improve the connection between user and technology?

The scores are satisfying because more than 70% of older users stated that the project meets the goal of bridging the gap between senior citizens with a low level of technological skills and advanced technological solutions. Only three users partially agreed and disagreed with this topic (“Yes and No” answer).

The main reasons identified by the users are the following:

“Yes, because...”	“It is easier”	This is the most common reason: older adults think that it would be easier for them to learn how to use EasyReach than the other current solutions
	“It is more practical”	This service seems easier to manage than the others



	<i>“easy to login and to use”, “surfing the Net becomes easier”</i>	Some users identified specific tasks that they think they will be easier with respect to their experience with the other devices
	<i>“I have less fear of making mistakes”</i>	It is also a psychological question: dealing with a remote control and a television will surely make users feel more self-confident
	<i>“it is the future”</i>	Someone just trusts the service because it looks promising for the future
	<i>“useful for people who spend much time at home”, “it is useful even for people that do not want to deal with a computer”, “it makes things easier for people like me”</i>	Specific target users have been identified: elderly at home, who are unable to use the PC: someone also already belonging to a real social network (one of our participants)
	<i>“the remote control is always next to you and ready to work”, “it works without mouse and keyboard”</i>	The remote is appreciated as user-friendly device

“No, because...”	<i>“elderly are usually scared of technology”, “it needs a lot of practice”, “It is necessary to understand how the PC works”, “a certain educational degree is needed”, “people that do not use PC will not use even this system”</i>	Many complaints deal with fear of technology in general and unwillingness to learn: these are common to many activities suggested to elderly and our project is not different according to our participants
	<i>“it is a cold method”</i>	There is still skepticism towards technology: it is not appealing because it does not seem involving
	<i>“it is pretty banal, ordinary”, “it is not useful”, “I already read newspapers”</i>	Some participants do not find any innovative aspect in EasyReach: someone even compared it to a simple newspaper
	<i>“it is not available via PC”</i>	Some tech-skilled elderly complains about not having the possibility to use the EasyReach system from a personal computer



D. BEST AND WORST FEATURES

The final items of the questionnaires investigated the best and worst features of the system: participants were asked to write them down on three blank lines where they could justify their judgment. The most typical answers are reported here.

D1. Best features

The best feature identified by participants is the *“simplicity of the remote control”*: although its functioning is still not perfect, the service is much appreciated. This is related to the general *“ease of the system”*. Then, *“reading news from the world”* is interesting for many elderly: even the ones with technological skills would like to have a more simplified news reader.

Above all, the ease of use is stressed by sentences like *“it is easy to link to the service”* and then *“move with gestures”*. The main reason is that EasyReach is *“Internet via a simple medium”* and *“you can use it through the television”* *“without any banner”*. So *“Internet (especially news) becomes easier to read”*; there is both *“the possibility of getting in touch with the world”* and to *“get in touch with new social groups”*.

Moreover, the service *“facilitates the communication flow among lonely elderly”* by allowing to *“talking to friends safely on the web”*. EasyReach is perceived as *“a new engaging way to spend time”* also because *“topics are various”*.

D2. Worst features

The main problems are related to the quality of videos and photos that are *“not good”*. Then, older users also complain about the *“small number of users at the beginning”* and the *“difficulties for elderly to set up these technological devices”*. In general, some of them think that they *“can not evaluate correctly the news I take from the service”* and the EasyReach project *“can not solve the issue of lonely elderly”*.

2.2 SUGGESTIONS FROM GROUP DISCUSSIONS

In this section the main findings from the group discussions are reported. All the participants shared their opinions, thinking back to the explanation and demonstration of the system and then arguing about what was already discussed.

The main four addressed topics were:

- potential users
- possible uses
- technical suggestions
- ways of exploitation

The data reported have been transcribed by the audio-taped group discussions: quotations report the words used by participants.



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A. POTENTIAL USERS

A1. Single users

Older adults have been identified during the first phases of the project as the main addressees of our service, still participants helped us making further specifications:

(Casarile, M) "for me it is useful for people that do not clearly avoid being in touch with the others"

(Casarile, F) "instead of preventing isolation, it could promote it if given to lazy people"

NOTE: the name of the town where the User forum took place and the gender of the participant are reported between parenthesis. The original quotations were in Italian and they have been translated for the report.

The target users should have psychological characteristic as openness to other people, even if lazy: active people attend real social places, whereas introvert ones may not be interested in the service.

Some differences are also related to the environment:

(Casarile, M) "maybe in a urban environment socializing is harder"

(Vanzaghello, F) "when I think about a lonely man I figure it out in a city"

(Casarile, F) "at first we reach people creating a physical touch, then we can think about systems like EasyReach"

The success of the EasyReach project can be stronger in urban contexts: anyway, it is necessary to create a real touch with the target user before leaving it alone with the system.

With respect to single cases, some of them have been identified:

(Casarile, M) "it would be good for people forced to stay at home for a while, to keep contact with friends: he/she would be already an open person"

(Buscate, F) "also people unable to move could use the system: the remote is always next to you"

(Buscate, F) "people moving with difficulties"

(Buscate, F) "people with a good cognitive status"

(Gessate, M) "the system may fit also to disabled young people living alone at home"



(Gessate, M) “for me it is ok even for a person who does not have a pc because gestures are easy and you do not have to know where to move a pointer... there are few simple areas”

(Gessate, M) “for people unable to move it is ok, they only need to have manual skills”

The platform would be suitable also for people that are temporary unable to leave home, for example after a surgical operation: the service will help keeping in touch with friends better than finding new ones. Another possible target is represented by people with specific disabilities who could benefit from such a service that can be controlled with a simple remote control.

The technological skills required are still a matter of discussion:

(Buscate, F) “it is suitable for already IT-skilled elderly”

(Buscate, F) “it is useless for people already able to work with a computer”

Some participants think that a good expertise is needed to interact with the system, still at the same time participants recognize that IT-skilled elderly would probably use other systems already available on the market. This issue will be better analyzed also when dealing with the technical difficulties and suggestions.

(Vanzaghello, F) “the lonely older adults is one who denies the future, otherwise he/she just has to listen to the radio, find media to stay in touch with the world... It is a matter of understanding how many people will be interested in such a system... the lonely man has no will of learning anything, it is difficult for him/her to accept new things”

A2. Groups of users

A possible use is related to the senior centers – where the User forums took place:

(Buscate, F) “to show activities carried out by the centre, so people can watch from home how these activities went or to share news from centre to homes... so people could understand what happens in the centre or in the parish and then he/she can decide whether to go or not”

(Buscate, M) “the managers of the centre could use this system to organize the activities”

(Casarile, M) “I think it is a cold method to get in touch with lonely people. I do not think that they would look for people in the system to talk to... otherwise he/she just decides to become a member of the centre”



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It would be useful both for members and manager: the first ones would stay in touch with the centre and the manager would be able to communicate faster with a wider number of members. The EasyReach service would aim at facilitating a real socialization, instead of promoting a virtual one.

(Buscate, F) "it might be applied to televisions in the nursing homes. Maybe the smartest people can help the others using the systems"

(Buscate, F) "the library could share on the system books' trailers and reviews"

Other interesting suggestion state that EasyReach could be useful in nursing homes or in library: in the first case the aim is to entertain people from different rooms/floors, in the second one it would be useful to stimulate the sharing of opinions about books.

B. POSSIBLE USES

As already suggested thinking about the target users, the main hint is to use the system to empower and promote the real socialization of elderly instead of starting a virtual one.

(Casarile, M) "it is easier if I already know real group and I stay in touch with them via EasyReach rather than if I talk to strangers found on the Web. The social network can start with whom I already know at the senior centre: we could agree to meet in the evening on EasyReach to share some stuff. The system would support a real socialization"

(Buscate, F) "an initial community is necessary for the system to start and be appealing for other users"

The main aim is to stay in touch with other users, both single or groups.

(Gessate, M) "it is a sort of Facebook, just without mouse and keyboard"

(Gessate, M) "to get in touch with friend who do not live in my town, or with associations far from my town... but they need to have EasyReach too"

Privacy issues seems to be good: older adults would like to avoid advertising and feel free to express themselves once logged in.

(Gessate, M) "privacy would not be a problem because I could talk only to my friends. I would dislike advertising"

(Vanzaghello, M) "it would be useful also to talk to my lover... is there a password?"

The core belief is that in the future older adults will not spend their time playing cards – like most of them do nowadays: so different activities with the EasyReach system are welcome. At first, sharing photo of their



recipes from the kitchen, then talk about current news (or other topics suggested by elderly) with many peers.

(Vanzaghello, M) "in the future elderly will not play cards only, they will have to learn continuously: it is important to have already developed easy devices"

(Buscate, F) "I am interested in the news from the world application"

(Buscate, M) "it would be nice to exchange photos of our dishes"

(Vanzaghello, F) "the selection of the world news is interesting, I would use it. And what about a selection of movies? I am thinking about many different contents that are suitable for elderly"

C. TECHNICAL SUGGESTIONS

The technical suggestions start with the discussion about the ease of use: deeper thoughts are reported in comparison to the ones collected through the questionnaires.

(Casarile, F) "using the remote control is far easier than turning on a computer: sometimes I got stuck without being able to shut it down"

(Buscate, F) "gestures are easy, computers are more difficult"

(Gessate, M) "controlling with gestures looks easier"

(Buscate, F) "it could be an halfway step to the learning of a personal computer"

(Vanzaghello, M) "I think that it is easier with a remote control. But it must be well integrated with the other functionalities of the television"

(Vanzaghello, F) "honestly it is far easier than a personal computer or a new mobile phone... especially the last ones"

(Casarile, M) "a computer has so many programs which I am scared of. But if someone learns only what he/she needs it becomes like a coffee machine. What is difficult?"

(Buscate, F) "you do not even have to move to the other room where you usually have a computer"

The positive feedbacks emphasize the role of the remote and the improvement of controlling the system with gestures instead of mouse and keyboards: this looks easier than a mobile and it can be a preliminary step towards the use of a personal computer

C1. Possible dangers and obstacles

Participants also warn about some difficulties: at first, possible dangers like the lack of simultaneity and the addiction from the television.

(Casarile, F) "but if the other user is not logged in, how would I do?"

(Buscate, F) "the risk is that televisions will go out of fashion soon"

(Buscate, F) "the television can create addiction, my sister-in-law already watches television all the day... a system like this will not be useful at all"

Some technical settings are necessary and thus can represent some barriers.

(Vanzaghella, F) "the problem is that you always need an Internet connection available"

(Casarile, M) "who does not use the computer at the senior centre would not use it even at home, neither with a system like this"

(Gessate, M) "an explanation is needed for the ones who have never used a personal computer: it is simple but no one can learn it by himself/herself"

(Vanzaghella, F) "I think it is a social better than technical innovation: you already need a technological autonomy to use it, but it can broaden your social network"

Preliminary practice is needed: this is possible by attending specific courses or simply waiting for the next generations of elderly, who will be IT-skilled.

(Vanzaghella, M) "it is impossible to think that lonely older adults might be helped just by giving them a powerful television, even though very simple: the project is awesome, but some training is needed. The few things we know about technology derive from the courses here at the senior centres: it needs someone that teaches how the system works, probably I would not be able to learn..."

(Vanzaghella, F) "today 60-years-old elderly are already IT-skilled, so in 10 years nobody will find difficult with these systems, without problems due to loneliness: still nowadays 80-years-old elderly can not use these devices. They will be helpful in the future but going into a technological world is difficult for current older adults"

C2. Additional tools

Then, some additional tools are requested to improve the communication flow, such as a keyboard and an external speaker.

(Casarile, M) "is it possible to have a keyboard?"

(Casarile, M) "I would add an external speaker to have a simultaneous communication"

An interesting advice is the creation of a computer version of EasyReach to extend the network to all the older adults with technological skills: other users will be in touch with a bigger number of peers.

(Casarile, M) "if an older adult is able to use the computer, why does he/she have to move to the television? There must be the possibility to start EasyReach from a computer"

(Gessate, M) "a computer version of EasyReach would be helpful also to broaden the virtual community... the EasyReach via television would be left to who really needs it"

C3. Main critiques

The strongest critiques are related to the learning of the system: although it is perceived as simple, many doubts still concerns the possibility of being mastered by elderly.

(Vanzaghella, M) "it is a mix between a computer, a mobile phone and Skype. Maybe it is simpler, but I am not sure. We should not say that it is for elderly.... They would not even know where to

start. We have some devices that it would be necessary a master degree to use them properly... I have not even attended an high school! This system is not suitable for our generation”

(Vanzaghello, F) “older adults belonging to the next generation will use it, surely not who is 80-years-old in 2013”

(Vanzaghello, M) “the older adult needs to think that the difficulties are related will carry benefits: this system appears as a step back from the touch-screen, in the sense that it is even easier and close to people not IT-skilled. Training is needed and not everyone will be able to use it... but more people will be able if compared to the touch-screen”

(Vanza, F) “you have to learn also when using a microwave oven... who will be willing to learn, he will learn”

D. EXPLOITATION

Thinking about the future, two possible scenarios are the individual purchase by a single user or the exploitation sponsored by associations.

D1. Single user

An older adult needs a training and help to set up the service: then, the major issue is related to the cost of the devices.

(Casarile, F) “a person is needed not only to convince, but also to teach how to use”

(Casarile, F) “it depends on the wealth of the elderly, someone has a 30000 euro income per month”

(Buscate, F) “if I am an older adults without Internet connection, I would have no chances”

The most promising suggestions hypothesize a monthly fee or a split of the whole cost into different payments so that at the end the user will have the property of his/her own system:

(Buscate, F) “the cost is an obstacle because you will never know how much you will use the system: neither if you it will be useful nor if you will be able to use it”

(Casarile, F) “may be paying a monthly fee”

(Buscate, F) “enterprises should make discounts, maximum 10 euro/month”

(Gessate, M) “I would split the cost: after different monthly payments I would own of the system”

D2. Association

An interesting idea highlights the role of specific associations as mediators between the producer and the final user: for example, they could select specific users that will need that system. This kind of associations might be represented by local authorities.

(Casarile, F) “some associations could think about it for their members, the ones that deserve it”



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(Casarile, F) “the Regione (local authority) could spread it to people in need and that can not buy it”

(Gessate, M) “in the senior centres there should be a place from where I get in touch with the others. It is necessary to evaluate how much it would cost to the ANCeSCAO”

Another hint to be reported – even if it sounds contradictory with what reported previously – is the use of the portal as an advertising platform: an enterprise willing to disseminate its brand can spread the EasyReach platform in exchange of banner or logo throughout the system.

(Buscate, M) “a group could advertise through EasyReach, so people would join the group by using the service”

In conclusion, the association is preferred because it is able not only to pay the costs better than private, but it will also immediately provide a group of users (its members) that will be a real added value for all the EasyReach activities.

(Vanzaghello, M) “working with associations is necessary, because the single user miss the willing to start, whereas a group context is motivating and engaging. A person has no interest in learning a device, it is necessary to perceive the system as something useful to connect people”

3. CONCLUSIONS

The role of the researcher as a facilitator allowed elderly users to live a “mediated experience” with the EasyReach system: four meetings were held to demonstrate all the functionalities and to allow 62 older adults to discuss about and evaluate them.

The overall evaluation of the system is positive: the main idea of reaching high technological solutions through common device seems a real breakthrough. Even if some technical difficulties still occurred, elderly could test the system and reported positive feedbacks.

Older adults are the main target users, but the definition of “lonely elderly” is not suitable: the participants to the User Forums warn us about the difficult to get in touch with a big range of lonely elderly which is represented by the introvert ones. Instead, they would suggest to think about a possible use of the service by older adults with temporary injuries that forced them at home, or by people with disabilities (also youngsters).

The main aim of EasyReach seems twofold: future users state that it will be useful to talk to other people/group and to keep update with local or global news. Communication and information are the two legs for the project to walk safe: other issues such as media storage and reminders are not a priority.

Learning the system is the highest obstacle: even though older users rate it simple, they have also lot of doubts about their will and their ability to learn new devices. To this end, mediators are needed to bridge the gap between the EasyReach system and possible users: they will not have only to teach the main commands, but they are also meant to show the benefits gained through the service in order to strengthen the motivation to learn and help older users tolerating mistakes and malfunctioning.



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The possible scenarios for the project do not simply recall home settings: senior centres and nursing houses are identified as possible places to install the EasyReach system. These suggestion symbolizes the strongest feedback gathered by this pilot: the service is more powerful if its aim is to enhance a real community better than support the creation of a new virtual one.



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ANNEX 1: Pilot in Germany

We kept in contact with the Florencenhort Seniorenzentrum at Stansdorf for German pilots during this period. We asked about resources needed related to the pilots, like Internet or TV. There is no Internet connection in the center, so we decided to go for Mobile Internet solutions like 3G USB Modem. The management also mentioned that they needed at least 2 weeks in advance before the pilot studies. Meanwhile, we got our 2 STBs and 2 remote controls. We successfully installed the EasyReach client. However, we could not make the remotes work with the established configuration. We tried with an Linksys router at the beginning. The remotes did not connect to the EasyReach network. We wanted to try the remotes with another router. We bought a TP-Link wireless router (with a support for 3G USB modems; considering that we will need mobile Internet in the senior center). The remotes did not connect with the new router also. We had a distance meeting with the main developer of remotes. The meeting was with screen sharing and he also verified that we tried all the possible network configurations.

In the light of these events, we had to cancel the German pilots. With the approval of the consortium leader we switched our resources to test the EasyReach client locally for usability and to improve German translations. The tests were done by using the mouse instead of the remote control. Here are some results on these tests. In general the client worked as intended.

- ⤴ We improved the German translations of some of the UI elements. Additionally, we improved translations of the taxonomy of interests. These were reported to the developer team of the EasyReach client.
- ⤴ Some operations were slow due to network connection since the central social DB was in Italy while the client was in Germany. Some UI improvements were suggested to increase usability in the event of slowness, like giving a feedback by changing the cursor animation so that the user does not think that he or she made a mistake while using the client.
- ⤴ Some error messages that we got during tests were reported. Those were found to be related to the SOAP messaging protocol and mainly caused when the connection is slow.



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ANNEX 2: SCREENING QUESTIONNAIRE



International Project in favour of elderly people funded by European Union

The project has the objective to realise a system that, through a TV set and a new remote control, allows to socialise, to communicate with relatives and friends and to meet new people sharing the same interests.

SELECTION FOR PARTICIPATING IN THE PILOT of THE PROJECT

1. Would you be available to participate in the experimental phase using the system at home or at the Senior Center (considering that all costs are in charge to the Project)?

At home Yes NO
At the Senior Center Yes NO

2. Gender M F

3. Age.....

4. Education.....

5. Number of residents in your household.....

6. Computer use

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Every day	Few times a week	Once a week	Once a month	Never

7. Internet use

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Every day	Few times a week	Once a week	Once a month	Never

Name..... Surname.....



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Address.....

Telephone number.....

Senior Center



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ANNEX 3: DISCLAIMER

Release form for media recording

Agreement to the diffusion of video Materials

Privacy information

To participants to the experimental phase of the EASYREACH Project

During the experimental phase of the EASYREACH project, some sessions will be recorded and some photos will be taken to have a memory of the experiments, experimental activities and discussions; this material will be utilised for divulgation to a broader public through different channels such as conferences, TV programs, internet, etc.

As a consequence EASYREACH, following current regulations, asks to participants to express their agreement or refusal to the use of the above materials.

Name and surname: _____

AGREEMENT: I **agree** to the dissemination of the above materials:

Date: _____ Signature: _____

or

REFUSAL: I **am opposed** to the dissemination of the above materials:

Date: _____ Signature: _____

Reasons for the refusal:



ANNEX 4: TRANSCRIPTION OF THE GROUP INTERVIEWS IN THE ROMA PILOT

A3.1 - Group interview Elderly Centre "Torrevecchia" 23 May 2013

(participants: Trieste, Tommaso, Bruno, Ivana, Lucia, Elvira, Michele, Luigi, Rolando, Antonio)

Elvira asks if the interaction with the system can take place only when the TV set is turned on.

Trieste asks if all the devices he sees in the room must be bought by the EasyReach user.

Elvira asks information about the costs of the system.

A woman asks if the system can be operated using the user's home TV set.

An interviewee asks if all the users share the same password.

There are enthusiastic reactions when a message is received correctly and when a movie trailer and a short video about a pair of twins are shown.

On the contrary, people's attention wanders when the functioning of the system is very slow. Some interviewees stand up.

An interviewee asks if the person who receives an image must have the same equipment used by the sender of the message.

Elvira says: «All this is very nice! And very useful. The problem is being able to use it. I'm not able to send messages even from my cell phone!.»

Lucia says that the system is excellent.

«I like sports and would join sport groups.»

Elvira: «I wouldn't use the system very much. I'd talk with my son who's at Ibiza.»

Ivana: «I'm lazy when I have to make a phone call, but I'd use it with the TV set. However, I already have my group of friends, so I'm not very interested in creating new groups. I think that the system is useful if elderly people stay at home.»

Elvira: «I wouldn't use videos and photos. It would be a complication. I've already enough complications!.»

«I already have so many friends: using the system would make my life more complicated!.»

Antonio: «It should be linked to public institutions. This way it would be really useful. More than to communicate with friends.»



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Bruno: «It would be useful for safety and health purposes. For disabled people and elderly people who live alone.»

«For those who are sick, for people with one leg in a cast...»

Antonio: «I could exploit it if there were an association which delivers medicines and food at home.»

Bruno: «Nowadays, certificates can be obtained online. So, I'd like to get a certificate at home by using EasyReach together with a printer.»

Trieste: «At the other end of the link there should be the same system. People could communicate with INPS (Italian National Pension System).»

Bruno: «In the past, sick people could rely on "Telefono Amico" or on "il Salvavita" (telephone emergency services). The EasyReach system could be linked to that kind of facilities.»

«Security, health...»

«It could be a quick communication system for disabled people.»

«I'd like to contact support associations, groups helping elderly people with shopping.»

«With the police, for emergencies...»

Luigi: «We already meet in several groups. So, we don't need to have contacts through this system.»

«This is really useful for people who cannot use a keyboard: they could talk to public bodies.»

«It's a way of spending the day, meeting new people.»

«I'm already a member of a dozen groups, we meet often: I need no EasyReach to communicate!.»

«How about giving users the opportunity to book a taxi?.»

«I really don't see any negative aspects, but the system is only good for people who stay at home.»

Bruno: «Everything is all right with the system, but the gestures associated to the use of the remote control are not easy to be operated. Confidentiality of information is ok.»

«I would appreciate less gestures to stay in touch...»

«To see other people, to listen to other opinions, to understand how other people are: I'm definitely interested!.»

«Well, of course if you use EasyReach, you accept losing some privacy.»

«Do I really have to keep my TV always on in order to use the calendar?.»

«I wouldn't cut applications off the system: if I don't need something, I just don't use it!.»



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Some interviewees say that the system facilities relevant to the calendar and the “groups” are useful. In general, they say that there aren't useless facilities. Simply, if someone is not interested in a specific element of the system, he is free not to use it.

Group interview

Elderly Centre "Torrevecchia"

24 May 2013

(participants: Mario, Carmelo, Paolo, Adriana, Lucia A., Elena, Mirella, Lucia, Libero, Alberto, Mario 2)

A woman asks if communication can be operated only by those who have the type of equipment shown in the room or also by all the owners of a personal computer.

A man asks if the equipment in the room is linked to the Internet.

A person asks if the TV set must be turned on when a user is waiting for a warning or a notification.

Someone asks who uploads images into the system.

During the demo session, several technical slowing downs, interruptions and failures occur.

Lucia: «The system can be useful, especially for people who live alone.»

Adriana: «It could be very useful. Sending messages could help the sharing of information and interests.»

Mirella: «I could use it to speak to my son and my daughter-in-law. When I feel alone, I can turn the system on and I can feel more serene.»

«If you have it, you use it.»

An interviewee says that the system would be used also at the elderly centre.

Paolo: «I think it could be useful for communication between distant parents and friends.»

Elena: «The system would allow one to communicate with distant children and young grandchildren. The availability of images makes it better than the telephone.»

«It's a good opportunity to be seen by relatives and friends.»

Lucia: «It would be a perfect communication medium, for instance to communicate with brothers and sisters living abroad or to organize a card game.»

«Groups are interesting: we play cards and could use them before gathering in someone's home.»



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Lucia A.: «I am very unwilling to contact new people. I would be even more reluctant to do this using such a system.»

«I would feel more at ease if I were not contacted by new people.»

Alberto: «It would be very healthy for lonely people who speak to the walls. Dance, cinema, books and plays could be interesting to be shared.»

Mario: «The system should allow one to download photos made elsewhere.»

«I'd like to upload videos I already have and send them to friends: my wedding's video....»

«It's really hard for an old person to control the remote with gestures, especially if he's got motoric problems.»

Alberto: «The connection is slow. Perhaps, the system too. The remote control, which needs the use of gestures to be operated, is not suitable.»

Lucia: «Everything can be upgraded, because today nothing has worked!.»

Alberto: «The system could be used to find the most convenient offers in supermarkets.»

«The password is too easy: someone's going to crack it sooner or later! Why not use figures and letters?.»

Lucia: «If you are waiting for a warning of the system about a medicine to be taken, you must have your TV set always turned on, otherwise you could die!.»

Mario: «The system should be tested. It seems too complicated, especially with regard to the remote control.»

«Some features are too cumbersome, the remote is too slow....»

Mario 2: «The EasyReach system should allow one to operate e-mail, to access the Internet and to communicate with Public Administration, the Ministry of Foreign Affairs, INPDAP and INAIL (public pension systems). The results of diagnostic tests should be received via e-mail.»

Mario: «Communication with INPS (Italian National Pension System) should be made possible too.»

«EasyReach would offer me the possibility to stay close to people feeling lonely, and to feel useful.»



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A3.2 Group interview Elderly Centre “Rebibbia - Ponte Mammolo” 6 June 2013

(participants: Anna Maria, Flavia, Edoardo, Sergio, Guglielmo, Rosa, Venilia, Maria Giuseppa, Elio, Agostino)

Group dance is considered as an attractive group of interest to create.

Rosa: «Can we do a practical test with the remote control at the end of the trial?..»

Rosa: «Can I send a message also to my daughter or only to those who are equipped with these devices?..»

Someone says that the agenda can be useful to remember a check-up at the ASL (Local Health Unit).

Rosa asks if messages can be deleted.

At this point, Anna Maria goes away.

Elio asks who is the receiver of a message sent through the system.

Elio: «What happens when a person receives a message?..»

«Does the message arrive when we turn the TV set on or does it arrive independently?..»

«Can I send messages to friends with PCs?..»

Flavia and Rosa note that the voices recorded in the messages seem to be altered with respect to the real ones.

Someone says that if the system can be used only by few people, the whole operation is not significant.

«None of my friends has got it!..»

«How can I look for individual persons?..»

With reference to the example showing that a woman has become grandmother of two twins, somebody asks if it is possible to send congratulations to the woman. Moreover, someone asks how the grandmother can be found in the system.

Rosa takes a photograph successfully using the remote control. Maria Giuseppa takes pictures too. They are enthusiastic.

«How do I go upwards with the remote? This thing doesn't get any further...»

«I would really like to learn how to use it!..»



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Guglielmo records an audio message.

«What's the difference between this system and a computer?..»

People are now asked to tell their impressions about the demonstration.

Rosa: «At the beginning, it seemed to me almost like a game. Then, little by little... Certainly, communication is limited at the moment, but it is nice and interesting. I'd like to communicate with the people in Milan who are experiencing the same system. I think that this system, which doesn't need a keyboard and can be equipped with a large screen, is more immediate for elderly people, who have attention and sight problems.»

Elio: «I would use it to communicate with my grandchildren who do not live near me. Then, I would use it to communicate with my friends. Besides, I am available to test it at home.»

Flavia: «Nice. It makes you feel not alone. I have a grandchild who lives near me. I could use it with my friends..»

Venilia: «It is useful for people who live alone. It could be used to go to dance and to the cinema with friends. I would use it for important things, such as the communication with my daughter and grandchildren.»

Rosa: «It is an innovation. You feel you are part of something. You may contact people you wouldn't encounter otherwise. I would use it daily, not for a long time because I have many interests.»

Guglielmo: «I would use it to communicate with my friends and with my children who live far from me. The difference between this system and TV is that EasyReach keeps the mind awake, while the TV sends you to sleep.»

Elio: «The system is nice, pleasant, useful and simple enough to use.»

A person who does not belong to the group of regular participants, but is a listener, says: «It is useful to communicate with both near and far people. With regard to elderly people, costs must be evaluated, whether they are sustained by a single elderly person or by an elderly centre. Even though the elders find the system interesting, they could be prevented by costs from adopting it.»

People are asked if they would send photographs through the system.

Guglielmo: «Yes.»

Rosa: «Yes. The face reveals true emotions. This way, a sensation of more proximity can be felt.»

People are asked if they would use the groups of interest.

Guglielmo: «Yes.»

Rosa: «Yes. I would create a praying group.»

A listener: «Would it be possible to contact the police, the fire department, municipal offices, social services, healthcare through this system?..»



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Edoardo: «A network is needed. Perhaps, I would use it to discuss sport events. I would use photos and messages too.»

Elio: «I would create a group about the game of bowls.»

Maria Giuseppa: «I would organize trips.»

People are also asked about the calendar.

Rosa: «Yes, it is useful. I would use it to make appointments with physicians, which are frequent.»

Flavia: «Anyway, one should learn everything, from A to Z. It is not so easy.»

«When you start using the system, new ideas come to your mind and new potentially useful applications.»

Rosa: «Practicing the system should improve learning.»

Guglielmo: «To communicate with physicians is important to me too.»

«My doctor never answers the phone...»

Rosa: «Is my TV set at home suitable to work with the system?.»

People are then asked to give their opinion about privacy.

Rosa: «It's ok.»

Agostino: «It's ok, absolutely...»

«The password code is nice with the icons...»

«Some people do not wish to have their pictures shown...»

Edoardo underlines that he doesn't use the personal computer.

«This is Facebook, only oriented to elderly people!.»

Rosa: «Never mention on Facebook when you leave home on holiday, or you can find your house spoliated.»

Rosa: «EasyReach is another chance for us, elderly people. It is an innovation and for the first time we are part of it. I could feel part of the network of today.»

Guglielmo: «It makes you feel younger. It keeps you more alive. Otherwise, you get old.»

Agostino: «In my opinion, the only handicap is related to the remote control. Especially if you've got arthritis!.»

«It would be useful to communicate with many people and institutions.»



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Guglielmo: «It is important to keep in touch with the world.»

Rosa and Guglielmo: «It could be interesting to have the chance of communicating with the elderly centre of Torrevecchia to check if activities carried on here in Ponte Mammolo are accomplished there as well.»

Group interview
Elderly Centre “Rebibbia - Ponte Mammolo”
7 June 2013

(participants: Amelia, Germana, Giovanna, Gina, Carmela, Maria Luisa, Adalgisa, Domenico, Mario, Fiorentino)

«Excellent!..»

«Very simple!..»

«Are these TV sets normal or special ones? And what about the decoder?»

«How far can I reach with the system? Can I communicate with Milan?»

«It is almost like a PC...»

«Can you choose icons in the password or does the system assign those?»

«I like the calendar very much!..»

«Once I forgot to go to an appointment with a doctor...»

«Can I set the an important date in the calendar one week ahead?»

«The calendar works like a charm! With all the things we elderly people do, I would have reminders chiming all the time!»

«I appreciated that the system reminds about things!»

«Is it always the same key on the remote?»

«An instruction manual would be very useful.»

«I think that this system is good to keep the brain active.»

«It can simplify many things for elderly people.»

«If somebody is alone and feels ill, he can call for help through the system.»



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The participants are asked about both the type and the frequency of use of the system that they can imagine to make.

«Once I learnt about how to use it, I would definitely use it!»

Amelia: «I would use it to communicate with my friends in order to go to the theatre together, for example.»

«I would like that the system made available a direct link to call for help and get a physician or an ambulance.»

«I'd have great fun getting to know new things: cooking, gardening... When I have time, I would explore a lot!»

«Can I send a written message through the system? I'd rather have a keyboard, so that traces remain like in official documents: I wrote this to you on that particular day and at that hour...»

«Could the contact with the external world be added?..»

Fiorentino: «I would like to have a keyboard because I am interested in a written dialogue with someone. For example, I would show a written route for a trip.»

Germana: «If his system is open, does the receiver get a warning?..»

«Is anything stored of what is exchanged?..»

«The system may be useful to defeat isolation.»

«It can be used if the general health conditions of elderly people are still good enough.»

«It can be used to talk about important themes, such as the opportunity of keeping children far from pets.»

Mario: «Wonderful! I've seen many things out of my imagination.»

«Video and photos are additional features that can be enjoyed: messages are more complete with them.»

Adalgisa: «The groups of interest are fundamental, very effective.»

Germana: «I'd buy it immediately, as soon as it is on the market!..»

«The agenda is very useful: I'd use it on a daily basis, also for shopping.»

«I cannot gather ten people in my house, but I could in EasyReach.»

«I wouldn't want my grandchildren to delete my stuff, or I should lock the system!»

Domenico: «It is quite useful. I don't love technical progress very much, like cell phones and similar. I agree with it up to a certain point. I wouldn't show my photo portraits or the photos of children. I fear illegal uses of content.»

«No vulgar content should get into EasyReach: the Internet is so full of filthy things!»



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«Should I pay an annual fee? I already pay 70 Euros for my daughter's Internet connection...»

«What are the costs? Should I pay a subscription?..»

Maria Luisa: «A good assistance is necessary in order to learn these things. A good help at the beginning and a good maintenance after.»

Gina: «It would be also useful to meet sometimes like now in the elderly centre.»



ANNEX 5: TRANSCRIPTION OF PERSONAL INTERVIEWS IN THE ROMA PILOT

Personal interview

Rolando

Elderly Centre "Torrevecchia"

23 May 2013

«The EasyReach system could be very good for people with problems or people who live alone. It would be useful for those who need to communicate because of their isolation. They are a large number.

I don't know to what extent the system could be expanded towards external institutions, but it would be really innovative if it were an open system.

Today, in general elderly people are alone. The system could be a key point for them. It could help elderly people to socialize. This is true not only for people with illnesses or handicaps. However, the system should remain as simple as possible. Now EasyReach seems to be not too complex.

The elders are not old, they are curious. They are not closed and distant. They are full of willingness. This system is a way to stimulate them.

As to the operation of the system, how could elderly people solve technical problems? How could they communicate to solve them? If the system doesn't work well, its diffusion will be difficult.

The elders are not fool or stupid. Simply, they are no longer in a hurry. Each day is a Sunday and the month of August for them.

At the very end, the most important problems of elders are related to Public Administration and health care.

I trust in elderly people. I'm optimistic. The problem is often that they are not given a chance.»

Personal interview

Antonio

Elderly Centre "Torrevecchia"

23 May 2013

To get in contact with other people remotely is not useful for those who are already part of associations, but it could be really useful for isolated elderly people.

If EasyReach were extensively connected, then I might use it.

It would be useful to get in touch with the Elderly Centre from home.

It can spare unnecessary travel.

It can be useful for non-routine activities, activities different from everyday life.



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After reading the newspapers, I might take ten minutes to check EasyReach messages.

It is helpful to stay in touch with distant relatives.

I use a mobile phone only to call... maybe I took a dozen pictures with it in my entire life, therefore I am not much interested in multimedia, but I understand that sending a photo might greatly improve the efficacy of a message.

I don't use the Internet, yet I believe I am more connected to the world than my son who is always online!

I buy three newspaper every day and I think I can perfectly interpret the world even without the Internet.

I am not on the Internet because there is an overcrowding of news, but without any insights.

When something is too quick (like the PC) or too intrusive (like the cell phone constantly ringing for SMSs) I tend to shy away.

The login in EasyReach is too simplistic: instead of three icons, I'd rather get a username.
I'd feel more protected with a username and a password.

The good thing is the disposal of the keyboard.

I find a system like this to be more useful in places like the Elderly Centre: it's a whiteboard everybody can use. Elderly Centres tend to ghettoize, to form closed groups, whereas EasyReach could be an always open window to the world.

When my son was very young, I gladly took him to football matches, in order to meet other parents with similar interests. In a similar way EasyReach could help me get in contact with people sharing my interests.

The graphical interface is explicit enough, understandable... It seems okay to me.

I wouldn't clog the system with too much content, otherwise it gets distorted: sooner or later everybody will be on the Internet, therefore it's better to preserve the EasyReach specificities.

I'd appreciate the possibility to read a few newspaper articles in EasyReach.

It would be helpful to connect EasyReach to networks of home care.

My willingness to pay would be highly related to costs, but more than the expense I'd like to know the size of the network I'm connecting to, otherwise the story would be the same as the videophone...



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Personal interview

Mario

Elderly Centre "Torrevecchia"

24 May 2013

Remark

This interviewee plays a relevant role in Trade Unions (as some other interviewees). As a consequence the interviewees can be considered in general also "privileged witnesses" of the elderly world. At the same time they can be seen as potential users of ER since they don't use the Internet frequently.

Question: Let's imagine you have the EasyReach system at home or at the senior center, what are in your opinion the most probable types of utilisation?

At the senior center

EasyReach could be useful as connection among different senior centers: discussions, conferences, theatre representations, dance competitions (for instance to show videos to other senior centers).

Very useful for the elderly could be the possibility to interact with the Public Administration, for instance for income statements. However this should be dangerous since it could increase the complexity of the system and the difficulties of the elderly people in interacting with the system. In fact, elderly people need new skills to use new technologies, especially in interactions with the PA.

At home

The system could be useful for home bound elderly people but the impression is that the system is complicated and not easy to use. For instance, the log in procedure using pictures seems not easy to use: it should be better the use of a password, numbers and letters as in a mobile phone. It is easier to remind numbers than pictures. Another critical point seems the remote control. Even if we have not used it during the group session, it seems difficult to use.

Personal use of ER at home

Personally I would prefer to use a keyboard instead of the remote control.

I sometimes use the computer at our office (FNP) in which the digitalisation is in progress. At the moment involved people have problems in this digitalisation process.

At home I have the TV set connected to the PC. I have a hard disk connected to the TV set and I can store high definition movies. My son-in-law helped me in setting up this system.

I don't use it often since it is complicated and not easy to use.

Integration with the Internet

It is important the possibility to have access to ER only using the TV set but also through a PC. In such a way, for instance, the elderly can have access using the TV set and the young people using the PC. For instance, this opportunity could be useful for elderly in interacting with children living at a distance. This is not my personal case, but a friend of mine has a son living in Genova and having twins. Usually he sees twins by his Internet connection.

Question: What are the EasyReach potentialities to improve elderly socialization and their quality of life?

One possibility should be to help elderly who suffer from mental disease (for instance depression) to receive psychological support. Another example could be the possibility to be connected with a specialist doctor.



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In general the system could avoid social isolation for home bound elderly people.

Question: What are the positive/negative aspects of ER?

For positive aspect see what mentioned above.

The negative aspects include the low image quality of photos and videos and the possible difficulties of interaction in using the remote control.

Question: Are there some services to be added?

Connections to the Public Administration for health and welfare.

Elderly are desperate since INPS sends communications only by electronic media without traditional communications by post.

For health care, it should be useful the possibility to speak at distance with the doctor and to see the doctor. Of course the doctor should have the necessary facilities to be connected to the system.

The system should be very simple because elderly people don't have the necessary skills to use it.

The dimension of the TV screen should be reduced in comparison the 36" TV used in the group session: a big TV is not needed.

Question: Would you pay for ER?

I would pay only for health services and for welfare services.

Question: What is your opinion about privacy aspects in ER?

A password is needed to preserve privacy of photos and videos, but it should be not based on images but on numbers and letters.

Question: Have you got any other suggestion?

- The decoder should be integrated in the TV set in order to avoid the presence of cables in the house.
- The management of videos and photos in digital format should be provided: for instance to send videos of a wedding and in general for communication with friends and relatives.
- To include USB input for videos and photos in digital format.

The final suggestions is: simplification.



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Personal interview

Mario 2

Elderly Centre "Torrevecchia"

24 May 2013

Question: «What are your general considerations about EasyReach?..»

«It is important that the system could give people the opportunity of reading newspapers. Such a facility would be a great help for elderly people. Nowadays, the elders are not acquainted with the facts and problems, thus it would be very important if they were given the possibility of being informed about political and social aspects and events. Today, it seems that elderly people know everything, but, on the contrary, they do not know anything. The elders only watch soap operas and they fall asleep in front of them. The EasyReach system should stimulate their interests, accomplishing an educational role more than an information function. The contact with the Public Administration is fundamental.»

Question: «What about the opportunity of simple communication among people through the system?..»

«I don't believe in it. Elderly men might stay awake at night to watch naked women on a screen. This might occur if the use of the system were emphasized with regard to communication between persons. We should prevent men from falling into temptation with such an emphasis on person-to-person communication.

Elderly people should be educated. They should reach information through training. First of all, we must take care of vulnerable elders. Elderly people should be taken back to a normal condition.»

Question: «What do you think about the positive aspects related to the possibility of reaching new people?..»

«It is difficult, for the elders, to stay in touch with the friends they already have. Why should we cause a risk to them? It's better to avoid it.»

Question: «How can such a system be made attractive?..»

«An attractive program could be presented, including fiction shows. Elderly people could learn something while watching fiction.»

Question: «Apart from both the advanced facilities which could be implemented in the system (e.g. links towards institutions via the Internet) and the possible risks you were talking about, what do you think about the difficulties, if any, of practicing basic communication by the elders through the EasyReach system?..»

«The life of elderly people is already full. What are the advantages for them of getting in touch with new people? They have no time. The elders have got their friends and they prefer to meet with them. The risk is forcing the elders to do what we see in the Maria De Filippi's TV show. The human person should be at the centre, not the system, which should be at the service of the human person. Please, make it noble!..»



Personal interview

Alberto

Elderly Centre "Torrevecchia"

24 May 2013

Important remark

After the disaster of the second Scenario Engagement (SE) session with the end-users, this post-interview tries to catch the rough idea (never ever the experience!) and the attitude that the interviewee (A), generously rewarded, was able to build in spite of everything. It has to be stressed that SE is a rather weak technique in direct people involvement. The potential users could access by own hands neither the I/O devices nor build the own model of interaction with the system. Moreover, as a persistent technical malfunctioning strongly affected the whole performance, the value of this interview collapses in some way. We weren't in condition to detect either the potential acceptance by the users of the system or the feeling about functions, on the other hand these last ones were not plainly delivered in the scenario, even though identified in a preliminary phase of User Requirements. Some general thoughts are collected here below by questioning a witness who, having no chance to refer about a direct experience with ER, largely pours in the planned points of discussion his own experience gained of the old age in real world, based on years of attendance at many Social Centers in Rome and surrounding. The interview inevitably dealt with the issues of the daily difficulties faced by elderly people, the very spread condition of loneliness, and the bare necessities to which poor answers or nothing are given by the existing social policy.

1 – Features of the system such like detected by the user; installing it at home or at elderly social center.

The position of A has been very clear. He said: "I could adopt it, if the system were completely inspired to the most absolute ease of use, a system different from that I saw today". Actually, the technical difficulties of a prototype sometimes can be justified, but the technicians themselves had found extreme difficulties. For instance, A was negatively impressed by the huge slowness of the system reactions. ER had been working slowly many times. This factor only has been sufficient to make A aware and warned about the potential use. The remote control, to be precise, was always very complex, very difficult to be used, intricate. Despite all this, the idea to propose ER as possible alternative to those people not using internet must be kept alive since A firmly stated that "I tried (...) but the desire to navigate in Internet dies down, the search engine – ref. Google – is unintelligible by me (...) with all those results!". Hence, all attempts addressed to increase the access to the Internet social services are welcome, along with the attempts to reduce the digital exclusion and the suffering from the social isolation.

2 – Opportunity for socializing and increasing people quality of life.

It is very important, A stresses, to center the development of ER on the social life of the local area, the neighborhood, trying to collect and circulate the useful information to elderly, e.g. about the public offices opening hours, available services, even lee shores and general risks. "ER should be mostly configured to give useful support to the social local life. In fact, a person doesn't necessarily need to contact another who lives in Paris or in Honolulu, even though, I am aware, who has relatives in Australia can use ER to achieve this opportunity".

In my mind ER could powerfully promote and activate the reciprocal assistance in the elderly community. The subject A got a huge experience in his recent past about the parental control by sons and grandchildren. "This control - he stated - generally is not active 24/7, due to many reasons. ER could fill in this lack in some manner. In addition, ER could be very useful to circulate or deliver many important information to the elderly community, such as those social and economic subsidies, tax breaks, and several benefits of which many people ignore to this day the existence". Later A comes to the conclusion that all elderly need is of outstanding use. For example, very few of them know of the



electricity and gas bonus, the social card, the free season ticket for bus and underground, the TV bonus even, etc. As they don't know, unfortunately they cannot benefit even though they need.

Actually, from a system like ER, elderly expect effective answers to their elementary needs, as just mentioned, above all those who belong to the lowest income brackets. Moreover, ER should be provided for free to these persons, including assistance and maintenance as well. These are the most disadvantaged elderly people, those who when they need some help they don't know where to turn. If ER were able to provide all that, i.e. a powerful communication system and an active social network, easy to use and well working, it would be the optimal solution for many of them.

3 – Emerging key positive and negative aspects of ER.

A states that: "Friendship and solidarity arise from a base of common interests, shareable, cultural, social and political as well". The personalization of ER, with this regard, gives a significant opportunity by making available a large section of groups, a powerful way to convey both social inclusion and active participation. Groups are a key feature to ER, also in supporting the general acceptance of the entire platform (of services). With this statement A means that he could even pass over some minor lacks of the system (never over the remote control or the slowness!) and, if all worked well, he could accept the system en bloc, because he believes the above goal worthy of great respect and sharing.

On this last issue, A gives himself a parenthesis by saying that in other lands, e.g. the North bound of Italy and Europe, the solidarity culture works better, it is well established in the social fabric as a cultural background. According to him, ER potentially promotes both the sentiment of sociality and the desire of shared culture. Then, yet, A reiterates that ER must be easy to use, speed, well working, and hopefully free (cheap, at least).

Personal interview

Venilia

Elderly Centre "Rebibbia - Ponte Mammolo"

6 June 2013

Question: «What is your general impression?..»

«My general impression is positive. For example, the system can be useful for a woman who lives alone. She can contact people and can be not isolated.

I do not go to elderly centres. I would talk with some friend through the system, when I have time. I often don't meet my friends because we are all very busy. I don't watch television very much, as well. My daughter lives near me and her children stay with me very often.»

Question: «Would you add any service to the system?..»

«It is important to be able to contact public services, such as emergency ward, physicians and ambulance services.»

Question: «What about the possibility of transmitting photos and videos?..»

«In general, I am not inclined to share photos, especially at my age. But, if there is an important event, such as a special party or a first Communion, in this case I am favourable.»

Question: «Do you think that it can be useful to contact other people?..»

«Yes, if these people are smart and can give a help. No, if this is for gossip. I like to do little works, so I could exchange my experience with others through the system.»

Question: «In your opinion, are there negative aspects?..»



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«No, there aren't. The facilities made available by the system are all useful. However, they may be more or less interesting to people.»

Question: «What about the remote control?.»

«I think that one can practise at home. At the end, one gets accustomed to using it.»

Question: «What about costs? Would elderly people be willing to pay?.»

«It depends upon the possibilities of individuals.»

Question: «Do you think that the system is difficult to use?.»

«Things are learnt by experience.»

Personal interview

Maria Giuseppa

Elderly Centre “Rebibbia - Ponte Mammolo”

6 June 2013

On the whole ER sets out like an enjoyable system as it gives me the opportunity to organize at distance from home something joyful with my friends.

I'm a housewife, once I have finished my daily homework, I could even make new friendships on this social network. I live with my husband, but I have two sons and two grandchildren, all they live in Rome more or less close to me. As for the family pictures, at the moment they (the sons) use to show me pictures only by using their mobile phones. A very small screen is not able to get a satisfying visualization of my little grandchildren. Yes, they show me all but after that (when they go away) nothing remains in my hands, neither a traditional (printed) picture, nor other (file) to be viewed later on my preference. I'm disappointed of that. If I understand correctly, ER could give me this option. It would be great.

ER seems also to be designed to facilitate the closeness of friends and relatives. Among other things, it seems to be oriented to open towards new friendships, to meet online other people who are sharing the same interests. I would find this option very useful, really, because I use to organize outbound excursions with friends very frequently, e.g. to visit our wonderful surroundings, going to my birth village in Abruzzi, going to restaurant and other sites. I'm just positively considering this advantage as none of us (my husband and I) drives a car and this is very often an unsolvable problem.

About the automatic help given by the system (that opening to other people never met before and sharing common interest), I think it might come to be very useful (specially for groups of elderly), in order to find general purpose information when I don't find them on first attempt among friends and relatives. For example, if I'm looking for a new cooking recipe nobody has heard before, it should be amazing to ask other people out from my personal range and made automatically available by the system.

I liked very much the scenario of “becoming a grandmother”. In my opinion it is a clear example in order to understand the basic system capabilities for home application.

As for the sensitive information circulating (family pictures, etc.), at the moment I think to have no problems about privacy. Personally as far as I have no secrets for nobody, identically I have no restrictions. In addition, I can decide



previously whether to share something in the social network or not. If I don't want others to see my pictures, I simply don't publish them.

Finally, I think it would be wonderful if through ER elderly people can access some of the PA services, especially if someone is not a PC user or hasn't a connection to online. I just think of how much difficult is currently to get some of PA forms. Using ER there should be countless advantages, less fatigue and queues as well.

Personal interview

Agostino

Elderly Centre "Rebibbia - Ponte Mammolo"

6 June 2013

1. Let's imagine you have the EasyReach system at home or at the senior center, what are in your opinion the most probable ways of your personal utilisation?

I would use the system at home for socialisation.

I am single since my wife is dead. I have very few friends (three old friends).

I have problems in interaction with other people "in presence" for instance also during this interview. In mediated communication (e.g. using ER) we don't see each other and I would feel more comfortable and calm in expressing my opinions, sensations, concepts, etc. This is true in interactions with unknown people.

I would use ER for establish new contacts with unknown people having my same interests (I am interested specially in cinema, football, cooking).

After this first knowledge next contacts for me should be comfortable also "in presence".

At the senior center ER could be used to have access to information related to the senior center (for instance communications from the president, ongoing initiatives at the senior center). Two kinds of password should be provided for each user: a personal password and a collective password to obtain access to information related to the senior center.

For me the system is very good, my vote is 8/10.

2. What are EasyReach potentialities to improve elderly socialization and their quality of life?

I personally am not feeling elderly but due to illness and other causes there are some people that at my same age are feeling very elderly.

These people should not be comfortable in using ER. The system seems not easy to use for these people: the gestures needed for the use of the remote control could be problematic for elderly. The remote control has a lot of surprising facilities (e.g. to take photos, videos) but is not good for the elderly. The use of gestures could be problematic since elderly are often affected by arthrosis.

In general the ER system could help elderly in reducing the feeling to be alone: "Loneliness scares", "Elderly people alone is feeling lost".

3. What are the positive/negative aspects of ER?

Innovation cannot be negative. There could be only need for some improvement.

Positive aspects:

- To keep contact with friends and relatives.
- To establish new contacts with people having the same interests.



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- To organise events e.g. to go to the theatre, to the cinema, to the senior center.

Negative aspects (to be improved)

- Difficulties of interaction in using the remote control (gestures).

4. Are there some services to be added?

- Connection to the Public Administration for health and welfare.
- Connection to the police and public security.

The connection to the police is important for elderly since often they are victim of fraud. In our zone there are a lot of episodes of delinquency.

In this situation the connection to the police and public security should be very useful.

The inclusion of Internet news in ER is not useful since news can be obtained by other media (e.g. through television).

5. Would you pay for ER?

I would be willing to pay for ER since it is useful to avoid social isolation. I would establish new contacts with unknown people having my same interests. This system could allow me to go out from my every day routine.

6. What is your opinion about privacy aspects in ER?

The system in general is pleasant to use. Icons are adequate. The adopted log in procedure using a password based on images is easier to remind in comparison to a password based on numbers and letters.

7. Have you got any other suggestions?

As I just said, I don't like the remote control. It should be facilitated and improved. The use of gestures is not adequate for elderly people.

Personal interview

Adalgisa

Elderly Centre "Rebibbia - Ponte Mammolo"

7 June 2013

Question: «What are your general impressions?..»

«The system is interesting, especially useful to communicate.»

Question: «Which is the most interesting thing?..»

«The possibility to create a group. The opportunity to organize a meeting, to go together in our neighbourhood. It is a communication medium. Today there is much distrust. It is very effective.»

Question: «What do you think about the possibility of contacting people you don't know?..»

«One must be prudent. I find interesting to know new people in my neighbourhood. I have two children who live abroad now. It's nice to send them photos. Today I communicate with them by phone. I buy a card for that. One of them teaches Italian and English in Madrid. One lives in Adelaide, Australia.»

Question: «Do you think that your friends would be interested in this system?..»

«Yes, they would. Especially for health care and the calendar.»



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Question: «What about emergency?.»

«A phone call is faster to cope with emergency.»

Question: «What about the possibility of contacting the Public Administration?.»

«It would be a good way. Queues are long there.»

Question: «Are there negative aspects of the system?.»

«No, there aren't, in general. Perhaps, sending messages is a little difficult.»

Question: «Other considerations?.»

«It's better not have a keyboard.»

«I like reading very much. I have seen that the system doesn't include anything like this.»

«I have worked in the field of high fashion.»

«I like dancing and I find gymnastics boring.»

Question: «Do you think that elderly people who are particularly alone or active can be interested in the system?.»

«Yes, I do.»

Question: «Do you think that elderly people may be willing to pay?.»

«Yes, I do. However, trainers should go to the users' homes, otherwise the impact might be hard. Technicians at home should provide practical help and give a sense of support by their assistance.»

Question: «What about risks related to the possible occurrence of misuse of the system and unpleasant contacts with unknown people?.»

«If you are a normal person, I don't think that there are significant risks. It is a "mind saver", in normal conditions. Otherwise... It depends upon you.»

«Anyway, again, it is fundamental that, at the beginning, an operator explains how the system works and provides initial assistance. This is a must.»

Personal interview

Maria Luisa

Elderly Centre "Rebibbia - Ponte Mammolo"

7 June 2013

In my opinion ER at home has to be expected like a "friend", I mean a protective system capable to inspect of healthiness and eventually call for emergency. On the whole, connection is easy to get and I'm feeling able in organizing my free time with ER.

Moreover I'd like to play some games with it to take my mind always in exercise. I think of a section like "play with ER", e.g. with topics dealing with gossip and mathematics.

At a psychological level, especially for the emergency, ER could be useful such as anti-panic system. I mean ER tells me who is online, therefore I know promptly who can be contacted in case I need some help.

I don't like the remote control device. I feel it very inadequate. Perhaps it could be better a different way to interact, I don't know, for example by voice.



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ER at the Senior Center can be configured as a tool for use by group. I feel it useful in increasing the interchange between elderly centers. It could fill in a current gap, the lack of information, new ideas, good practices and experiences.

Social network: if the goal is to shoot down the sense of isolation, I find the ER idea very laudable. It seems it can mitigate the loneliness and other potentially sad moments of the day.

Among others, I think that the most positive feature of ER is the information exchange between individuals or friends not using PC and keyboard, and the access to communities of shared interests. This is a very robust control over the individual relationships, an open window towards the free opinion exchange, and as well as cause for reflection about our living daily experiences.

On the contrary, a clear negative aspect is the remote control device. It undoubtedly goes out of an effective user control. Gestures are very challenging to be done, even though after a long training. Moreover, looking at the scenario engagement presentation, even the operator himself got never the same system responses. I was actually very disappointed of that as I expected in a different way the services delivered to the user. Once more, I am inclined to believe that a vocal based interaction would lead to a very different result.

Pictures and video are comically made available throughout the remote control device. There is no visual feedback, so people using it wave their hands funnily in the air. For sure this is a seriously negative aspect.

The login using icons is ok, colors of the page are delightful, but also the other pages are more or less pleasant at view. The disposition of buttons and services seem to be appropriate in the page, easy to get. Login by three icons is ok, if there aren't overlapping with other passwords. Maybe the possibility to use a virtual keyboard has to be considered.

Regarding the privacy, I don't know if ER defends it. On the other hand, if nobody uploads sensitive information, like the IBAN code, the problem doesn't exist. In this version of ER, I mean, it's only question of good sense.

As mentioned above, I would like to find a section of games among the services delivered by the system. I have also in mind real time games to be engaged with other people online like me.

Regarding the cost or what I could be willing to pay for this system, I think it is not really a question of how much to pay. I mean, if I had back a useful service I would be willing to pay for it without conditions. Just to give an example, if the service is so important to preserve my health or seriously to save my life, it has no prize. I want it, as security and safety are both very important to me. If the service increases the quality of my life I will be certainly happy to get it. I think such a system could be even donated by children and grandchildren in place of mobile phones when some special occasions occur.

ANNEX 6: PHOTOGRAPHIC DOCUMENTATION OF THE ROMA PILOT

TorreVecchia (23-24.05.2013)

Setting-up







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Demo





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Interviews



Ponte Mammolo (06-07.06.2013)

Demo





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Relax



