Smart technologies for self-service to seniors in social housing

D.4.3.2. Exploitation Strategy

WP4. Dissemination & Exploitation

October, 2013

Polibienestar Research Institute – University of Valencia

OPAC du Rhône – ODR (FR) • FINABITA – FIN (IT) • Nottingham Community Housing - NCH (UK) • ADAMA – ADA (FR) • National Research Council Construction Technologies Institute – CNR-ITC (IT) • Conseil Général du Rhône/ERASME – ERA (FR) • Grenoble University – GRU (FR) • Triple Play – TRI (UK) • BIO RESULT – BioR (IT) • Polibienestar Research Institute from University of Valencia – UVEG (SP)

Funded by Ambient Assisted Living Program
(AAL-2010-3-041)

Content:

Introduction

About this document

This document presents a compilation of documents related to the Exploitation Strategy from WP4 of the HOST project developed in the three different experimentation countries (France, Italy and United Kingdom) and coordinated by Polibienestar Research Institute (Spain).

The purpose of the Exploitation Strategy is to guarantee a continuation after the end of the project according to the economic viability of the project and taking into account that a prototype of the product will be developed and tested, with a maximum 2 years' time to market. Moreover, it is aimed to identify potential markets and channels for the data and services resulting of HOST project.

Exploitation Strategy tasks

The main tasks to be carried out in the Exploitation Strategy are the following:

- **Business Model** that provides a wide understanding of the product to obtain resources and financing.
- **Service Concept**, which constitutes a guide for users and producers.
- **Marketing Plan** coordinates the execution the idea of the product, price, place and promotion of the technology.

Participants

The present deliverable belongs to the WP4 'Dissemination and Exploitation', which is led by Polibienestar Research Institute – University of Valencia; who has coordinated the activities undertaken for the exploitation strategy's development. According to the project proposal, the rest of participant partners who will participate in the WP 4 and, therefore, have to provide input to the tasks related to the Exploitation Strategy are:

- OPAC du Rhône (France)
- ADAMA (France)
- ERASME (France)
- Grenoble University (France)
- Triple Play (United Kingdom)

Beside these partners, CNR-ITC, Finabita and BioResult (all from Italy) have actively participated elaborating contents related to the strategy in the Italian context.

Current state

On 15th October 2013 we have available the following documents:

- Not complete version of Service Concept of **French partners**. The other two documents will be delivered at the end of the project.
- Complete version of Business Model, Service Concept and Marketing Plan from **Italian partners**. It will be necessary to update some data and information at the end of the project.
- Any document from **English partners**. They will be delivered at the end of the project.

Below, it is attached the different Exploitation Strategy's documents elaborated by partners from every experimental site. Alternatively, it is attached a justification about their absence or their incomplete state.

Exploitation Strategy in France

WP4

October, 2013

OPAC du Rhône, ERASME & ADAMA

OPAC du Rhône – ODR (FR) • FINABITA – FIN (IT) • Nottingham Community Housing - NCH (UK) • ADAMA – ADA (FR) • National Research Council Construction Technologies Institute – CNR-ITC (IT) • Conseil Général du Rhône/ERASME – ERA (FR) • Grenoble University – GRU (FR) • Triple Play – TRI (UK) • BIO RESULT – BioR (IT) • Polibienestar Research Institute from University of Valencia – UVEG (SP)

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On October 2013 French partners need more time to achieve their Exploitation Strategy. The main reasons that justify this delay are the following:

- *First, they have not yet received from AGIM the evaluation of the French experiment. However, the feed-back of end-users is a key-part of the exploitation strategy.*
- *Adama and Erasme are still focused on the improvement of the devices.*
- *Finally, they are also unclear on the exploitation strategy as with the changing market dynamics and technology landscape it is going to be difficult to ascertain the right strategy going forward.*

So, at the moment just it is done a not complete version of the Service Concept.

Service Concept (France)

1. Detailed description of the product

Hereafter the service concept offer for HOST product in France is detailed.

1.1. Product

The HOST platform provides a simplified and effective interface to interact with the elderly, and is designed for the social housing operators that want to improve communications with their users. It is highly configurable and adaptable, and it can be tailored around users' needs.

The HOST product offers easy-to-use services to older people living in social housing flats.

It works on simple devices, such as digital tablet, PCs and smartphones[1]. Through dedicated user interfaces, designed to be simple and intuitive, older people and their "circle of support" are free to choose among a set of services, specifically provided for their daily needs, in a self-service manner.

The HOST product in France is formed of 2 elements: HOST Organization and HOST Communication.

1.1.1. Tool 1: HOST Organization:

HOST Organization helps the senior and his family to manage the administrative burden. This application displays useful real time information from the home care services and the social housing provider. It also provides real-time feedback from the home care provider to the family, as well as messaging application between the professionals, the seniors and the family.

HOST Organization runs on an iPad and connects to back-office servers, connected to information systems of the professionals.

The services of the last version are:

- Weather forecast and saint of the day.
- Calendar allowing the senior to manage personal meetings, as well as home care professional meetings.
- Messaging between the senior, the family members, and the professionals.
- A document section with important information:
    - From social landlords:
        - bills and balance of payments
        - water consumption
    - As well as from each home care service providers:
        - public funding from local government (conseil général)
        - fiscal document

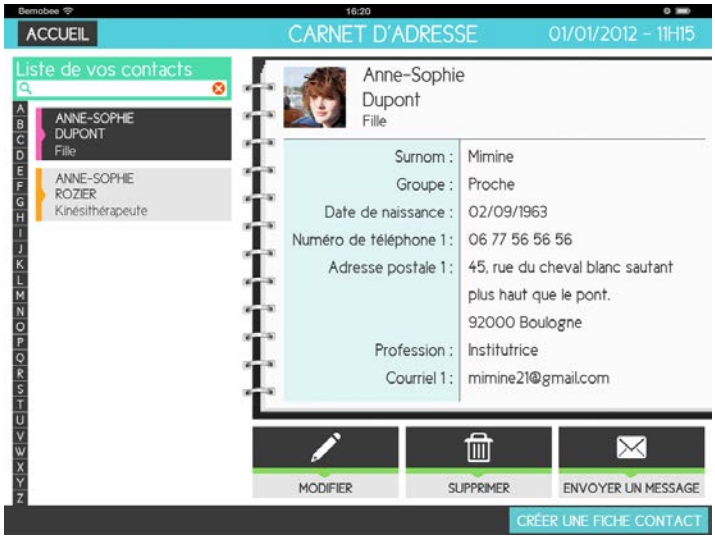
[1] Smartphone: for Host Org application.

- bills
- report on realised hours of home care services
- it is to be noted that the application provides a way to electronically pay for the services.

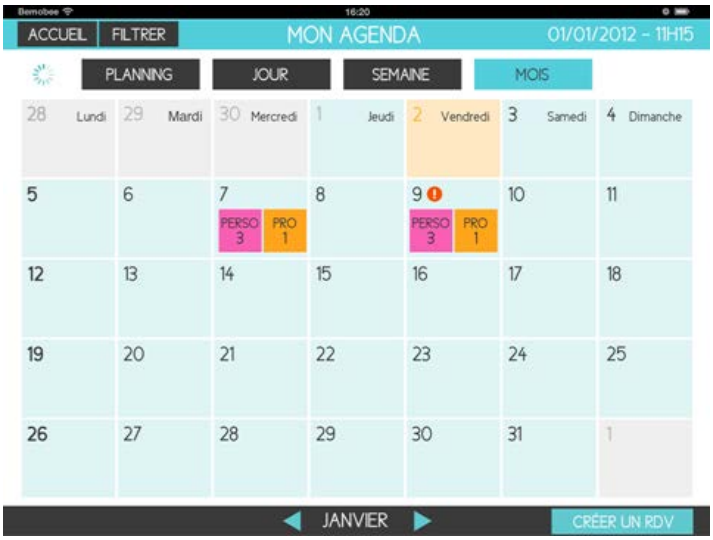
- A “cahier de liaison” which is a shared notebook in which the professional carers write down their feelings.
- A shared address book.

The following pictures are screenshots of the application HOST Communication:

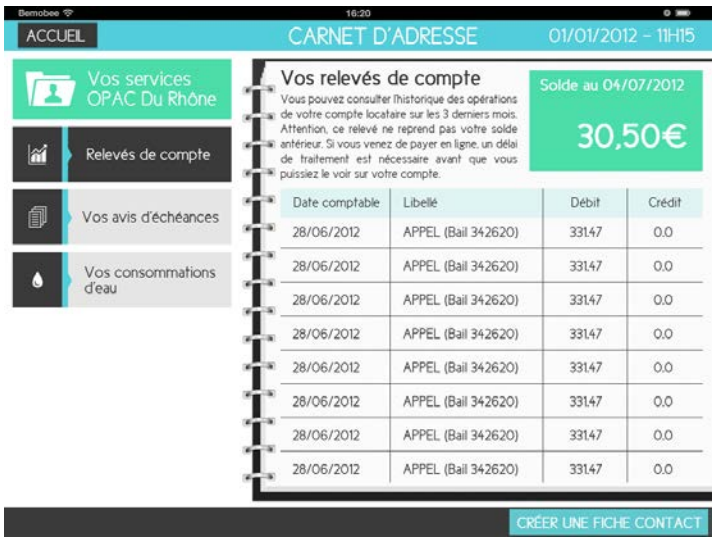
Picture 1. Screenshot of HOST Org Homepage



Picture 2. Screenshot of contact book



Picture 3. Screenshot of timetable



Picture 4. Screenshot of information from housing company

1.1.2. Tool 2: HOST Communication:

Host Communication aims to reinforce social connections between elderly and their circle of support (including family, social landlord, neighbours…).

This web application allows users to easily access and share documents (photos, videos, texts) or internet information (website, pod cast) with their social network.

As a web app it runs on various hard wares: PC, I pads, Android tablets... and support any recent web browser.

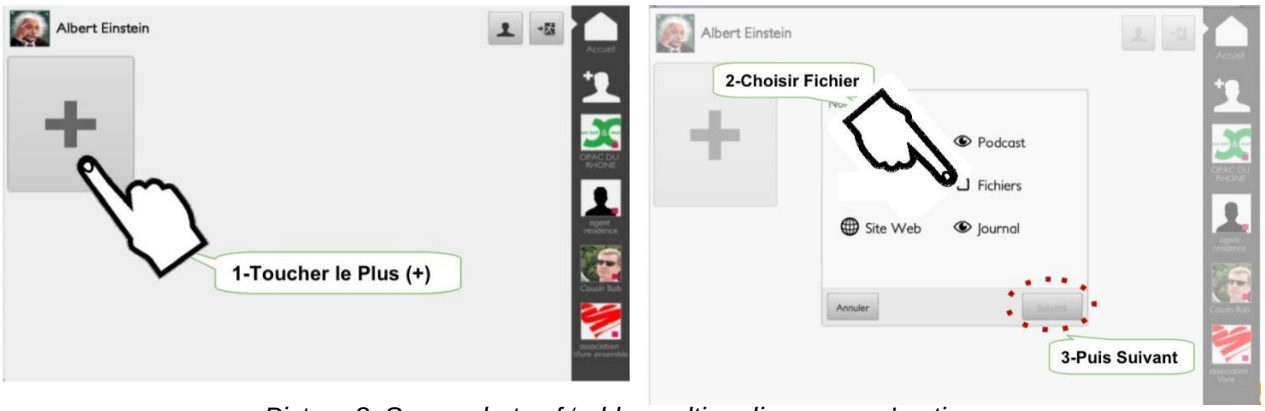
It is designed to be easy to use by elderly on a tablet, and to simplify the use of it by the family or other contacts on a PC.

The following pictures are screenshots of the application HOST Communication:

Pciture 5. Screenshot of login

Picture 6. Screenshot of HOST Comm homepage

Picture 7. Screenshots of 'add a contact' option



Picture 8. Screenshots of 'add a multimedia resource' option

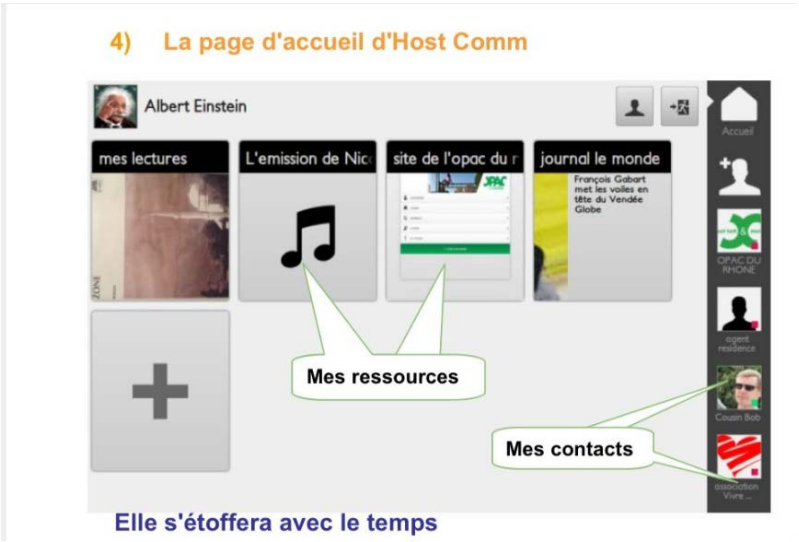


Figure 9. Screenshot of 'my resources' option

Pciture 10. Screenshots of icons used in HOST Comm

1.2. Protocol of use, services and devices

HOST provides access to a service framework that places users at the centre of a communicative process (both as information producer and consumer), and that stimulates the elderly's active participation to social life, preserving their autonomy and capacity in daily life (see Figure 1).

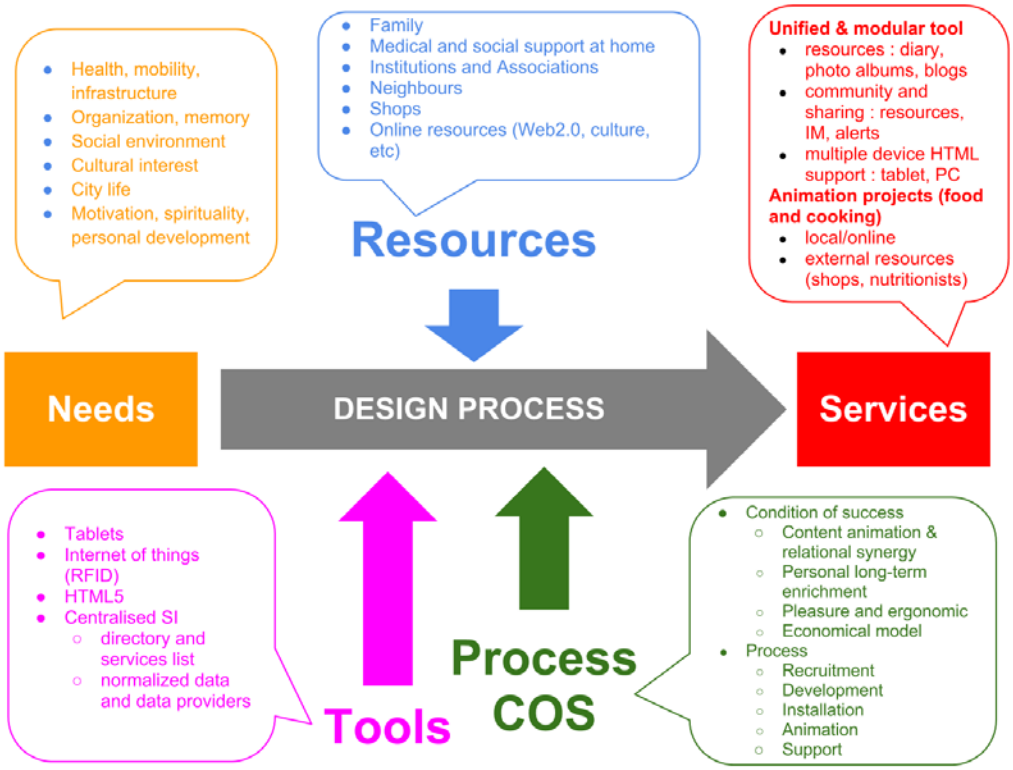


Figure 1. Schedule of the HOST service framework

1.2.1. Services

The offered services can be divided into two categories: everyday life management and social links.

Everyday life Management

- Access to housing and homecare services. The platform provides residents with a simplified access to information about electronics services from housing and homecare services (e.g. housing: costs, payments due, water consumption; home care services: scheduled interventions).Organization tools, as timetable, address book, list of contacts. These tools allow keeping contact lists of friends, families, and operators. These lists are shared by the older people, their relatives and acquaintances, the social housing operator, and non-profit associations. HOST is aimed at allowing the final users to directly contact the service providers and reach autonomously solutions to their own needs.

Social links

- Social network. The platform provides residents with a simplified and secure access to a social network that allows communicating and sharing various resources (e.g. simplified access to thematic website, pictures, comment).

1.2.2. Devices

In France the technological interface adopted for the experimentation with seniors is a digital tablet (ipad2): a device adapted to all generations, rather light, ergonomic, non-intrusive. Indeed, a previous experiment realized by Adama (project Avizen) showed the lack of attractiveness of devices adapted to elderly (PCs or TV), in France.

However some French Host services are developed to be accessible from tablet (ipad and android), PC and smartphone. This possibility of choice among three different types of devices is aimed at facilitating the adoption, by the elderly and their circle of support (private and professional) according to their preferences and abilities.

1.3. Ethical aspects

Ethical aspects in France have been analysed and undertaken as concerns:

- Information about implications of the participation in the project and about usage of personal data of those elderly who take part in the HOST experiment. After a general information given by the social Landlord OPAC du Rhône, each end-user interested in the project received information and consent forms, which he/she had the time to read before a meeting with the researcher from AGIM laboratory (University Joseph Fourier, Grenoble, France) in charge of the evaluation task. During this meeting (2 or 3 hours at least) these forms were carefully read with the tenant. A complete information about the project's objectives was given, as well as any details concerning the procedures of the experimentation phase, option to exit the study at any time, conditions of use of personal data collected during the project and registered anonymously. The tenant was encouraged to ask any questions about the project. After explanation and answers, if the tenant accepted to sign the consent form, AGIM laboratory realised the first step of the evaluation (questionnaires and first manipulation of the tablet).
- This meeting aimed also to ensure the accessibility of technology with regard to each participant's specific abilities, in order to avoid any condition of stress or demotivation due to difficulties with the device.
- Furthermore, a support was organized by the social Landlord OPAC du Rhône for the duration of the experiment: physical explanation when delivering the tablet (3 hours meeting), training guides elaborated with the co-designers help, hotline named "support host".
- The volunteers were informed of the experiments duration as well as the duration of free provision of the tablet.
- The choice to invite volunteers to participate freely –without offering the tablet, was made by the french partners at the beginning of the project. The goal was to center motivation of the volunteers on participation, experiment/pioneering, rather than on a financial or material benefit as an offered tablet.

2. Users

In the development and design of HOST services users have been closely involved in several phases: co-design process and experiment.

2.1. Co-design process: the first steps

In France the first step of experimentation, 'co-design process', involved 15 seniors, tenants in social housing living in two distinct neighbourhoods. These women and men, aged from 60 to 85 years old, were distributed in 2 groups. They contributed to specify end users requirements and to co-design services in terms of purpose, functionality and ergonomics.
Through a wide assessment, target group expressed 30 needs to design the service package according to these main categories: organization/memory, communication/sharing, food and cooking, and health and medicines (see Figure 2).

Thus during the year 2012, seniors have participated to almost 20 workshops animated by Erasme, the living lab of Rhône Council.

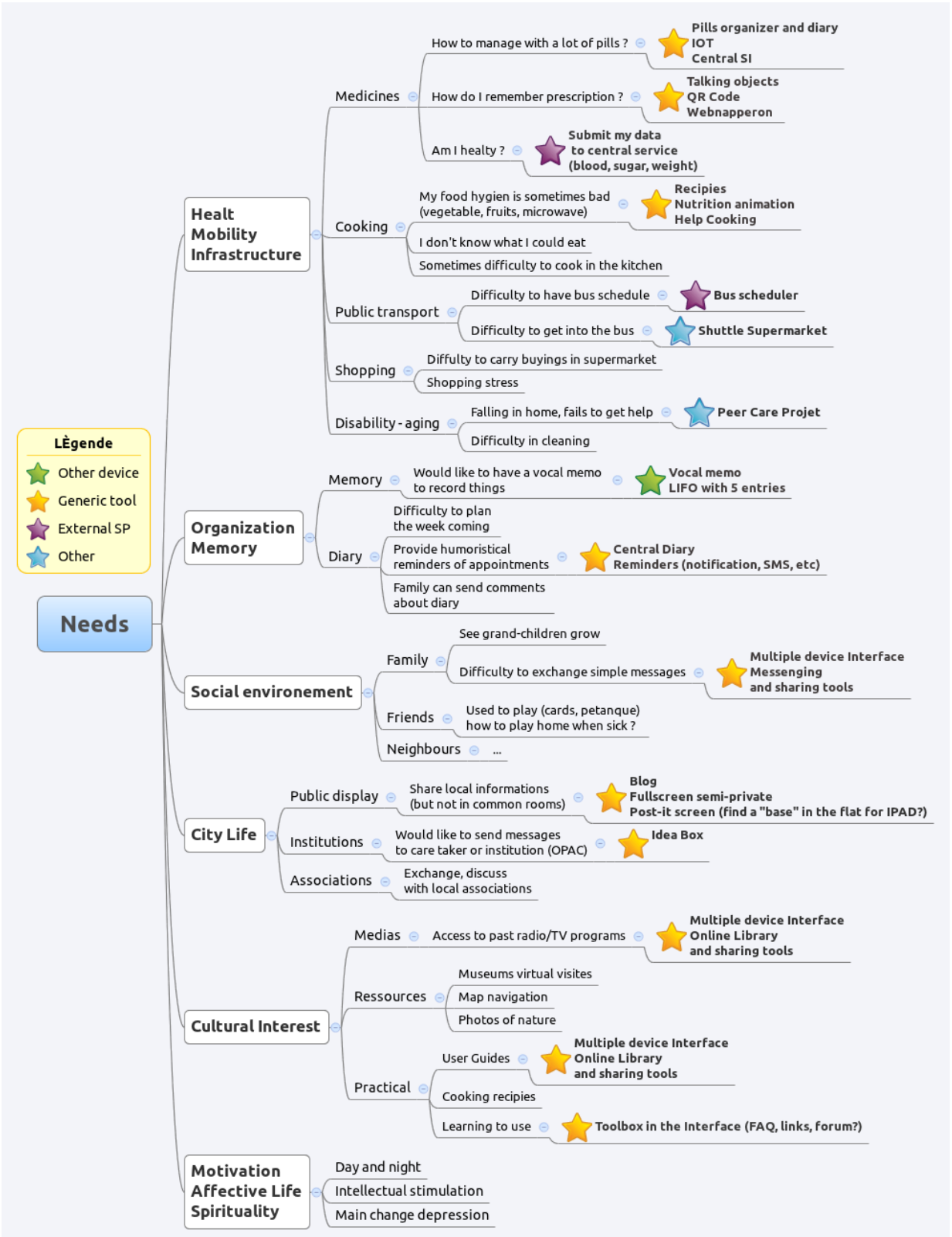


Figure 2. Needs expressed by primary end-users

At the end of this first stage, the results were:

- The definition of complementary services “host com” and “host org”.
- The delivery of a stabilized version of these services.
- A kit of user’s manuals, in order to simplify the training of technology (i.e. tablet and “host” package services).
- A communication plan with tools as a short video and a presentation leaflet (“say organization rather than memory…”).

All these deliverables have been elaborated with the support of co-designers. Furthermore, the co-design stage has produced recommendations for the implementation of the experimentation phase, as the support needed by the future volunteers. Finally, the co-desing stage has also allowed to finalize the assessment protocol including the questionnaires that have been prepared at the beginning of the project by Finabitat AeA, as well as the documents of information and registration as ethic chart and consent form.

2.2. Co-design process: deployment of the experiment

In France the experiment began in December 2012 (recruitment) in order to end in July 2013. More than 60 volunteers asked to participate, and 45 new tenants have been finally involved. All are tenants of the housing company Opac du Rhône, and live in urban and semi-rural sites spread in the Rhône district (see Figure 3). The major part of volunteers use to live in classical social housing[2]. As during the co-design stage, they are male and female aged from 60 to 85 years old.

[2] A small group is used to live in housing dedicated to seniors. Unfortunely these 5 people very interested to join the project arrived too late for AGIM calendar, so that they are not included in the AGIM assessment.

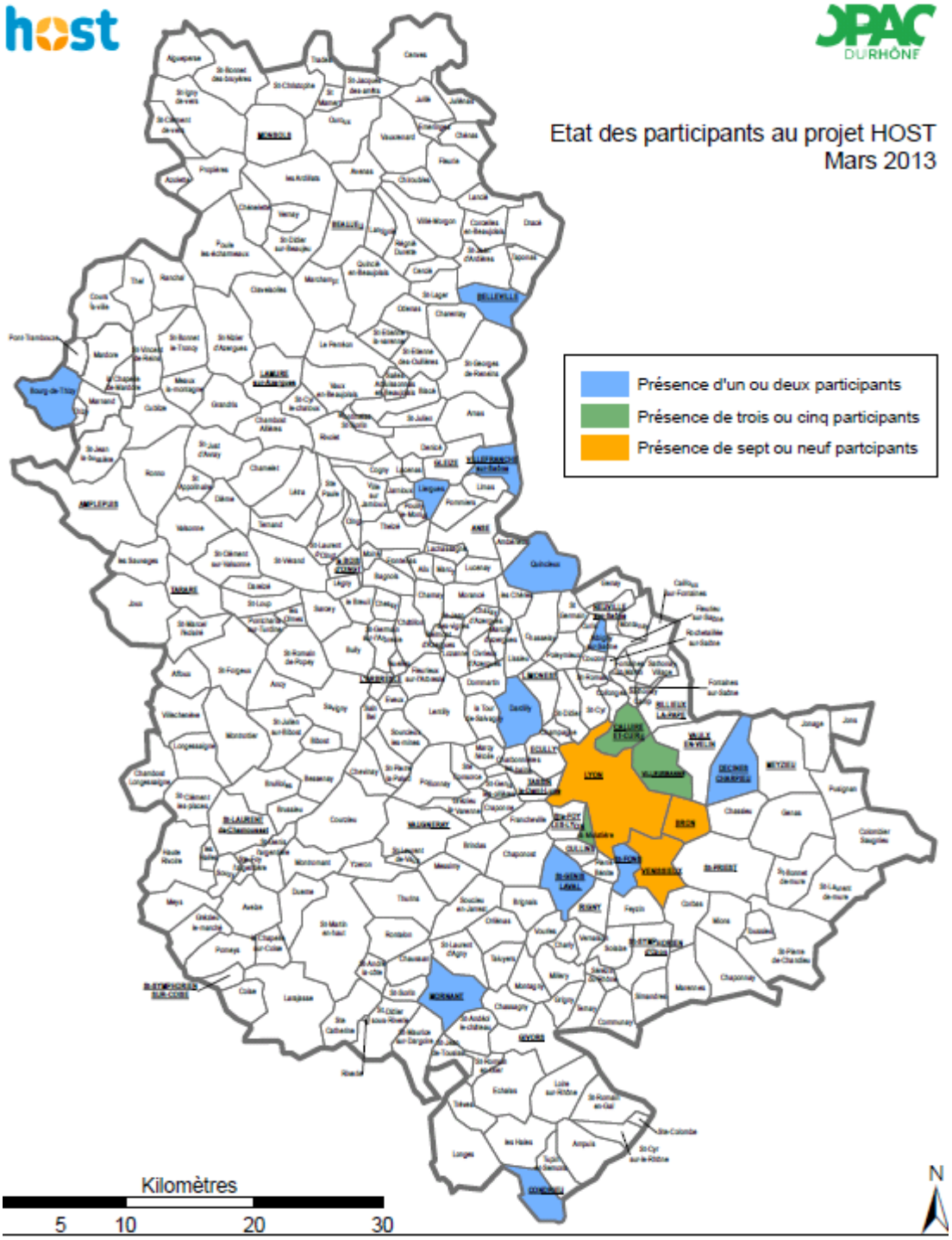


Figure 3. Sites of the participants in the experiment

Participants are asked to use the tablet and the HOST platform (as sending a message, sharing pictures, consulting information from the social housing company or an event scheduled by a caregiver). On this purpose, specific user's manual and a hotline were settled according to the results of the co-design phase. Furthermore, each user is invited to give a weekly feedback in a diary created by AGIM laboratory. Bugs, errors, difficulties, problems, etc. are recorded and will be analyzed, through a technical chart records at every call for help from the user.

Before and after this experimental phase, which is planed to last around 6 months per participant, the questionnaire developed by Finabita-AeA, is used as evaluation tool, completed by standardized scales and some tasks to be realized on the iPad. The partner in charge of the evaluation synthesis, AGIM, will provide a full comparative analysis of the results.

Support during the experiment

Users received support by the social Landlord OPAC du Rhône for the duration of the experiment. It was composed of:

- Face-to-face explanations when delivering the tablet, (3 hours meeting).
- Training guides elaborated with the co-designers help.

- Personnal support 'support host' including:
  - dedicated phone number;
  - dedicated e-mail;
  - dedicated contact in 'Host Com'.

- Animation on the network :

- 'Host info' a weekly newsletter that was expected and commented by a number of participants.
- Watching: answers to comments / messages / publication of the participants.

- In the city of Bron, we had the opportunity to experiment and modelize training workshops involving local partners as the 'cyberbase[3]', the local center of social action, the retirement home for senior 'Marius Ledoux'



Below, in the following subsections, the three types of HOST end-users: primary, secondary and tertiary are described.

2.3. Primary end-users

In the Table 1 the needs of primary end-users (elderly people) are described, along with the HOST service functions addressed to them, as well as the benefits that they can achieve with the use of the service.

Primary end-users	Needs	Service functions	Service benefits
Elderly people	Housing management	Information about housing services accessible in the system	Knowledge in advance and overview of housing costs and water consumption.
	Homecare services management	Shared timetable with the Senior, Homecare services and Relatives	Optimization of appointments management with Homecare services
	Organisation	Timetable, contact list, reminders	Facilitation of the planning of activities of daily living
	Social links	Communication tools and shared resources with families, service	Prevention of social isolation

[3] Cyberbase is a 'numeric public company' which partnership appeared as precious to support the training of the volunteers and to perpetuate the approach.

		providers and other people	

Table 1. Needs, service functions, service benefits and tasks addressed to primary end-users in the use of the HOST service

2.4. Secondary end-users

In the Table 2 the needs of secondary end-users (formal and informal caregivers, family members, and friends) are described, along with the HOST service functions addressed to them, as well as the benefits that they can achieve with the use of this service.

Secondary end-users	Needs	Service functions	Service benefits
Informal caregivers[4]	Secureness guaranteed for the elderly against fraud	Only housing owners' trusted providers allowed in the system	Reliable service providers guaranteed
	Possibility to keep in contact with elderly	Social network	Free messages and information exchange with the elderly
	Facility to manage the relationship with homecare services	Organisation tools (contact list, timetable, can be shared between the elderly, the informal caregiver and the home care service)	Earn of time
Formal caregivers	Earn time by delivering information as soon as possible	Timetable of intervention	Time and image
Friends	Possibility to keep in contact with elderly	Social net work	Participation in the social life

Table 2. Needs, service functions, service benefits and tasks addressed to secondary end-users in the use of the HOST service

2.5. Tertiary end-users

In the Table 3 the needs of tertiary end-users (social housing companies, associations) are described, along with the HOST service functions and tasks addressed to them, as well as the benefits that they can achieve with the use of this

Tertiary end-users	HOST implementation	Service benefits	Costs

[4] Among which some are seniors

Social housing companies	Install and manage the HOST platform	Make a difference upon other housing providers	From 5.000 Euro to 40.000 Euro[5]
Homecare companies	Extend business opportunities to professionals	Minimize HOST service costs for themselves and their customers	Variable with the number of actors involved
Associations	Participate in the HOST local implementation of a circle of support	Satisfy elderly's needs with reduced burden and maximize volunteers' outcomes	Free

Table 3. Implementation, service benefits and costs addressed to tertiary end-users in the use of the HOST service

[5] To estimate more precisely

Exploitation Strategy in Italy

WP4

September, 2013

BioResult & Finabita

OPAC du Rhône – ODR (FR) • FINABITA – FIN (IT) • Nottingham Community Housing - NCH (UK) • ADAMA – ADA (FR) • National Research Council Construction Technologies Institute – CNR-ITC (IT) • Conseil Général du Rhône/ERASME – ERA (FR) • Grenoble University – GRU (FR) • Triple Play – TRI (UK) • BIO RESULT – BioR (IT) • Polibienestar Research Institute from University of Valencia – UVEG (SP)

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Business Model (Italy)

1. Initial information

1.1. Short explanation about the product

HOST project – Smart technologies for self-service to seniors in social housing – aims to bring social housing standards for the elderly to a higher extent, offering services to people and their communities by:

- Giving older people access from home to new services, to digital contents and new information (images, recordings, and documents) made available by the service provider.
- Developing new usage of common spaces, thus enriching interpersonal and social relations in order to foster new abilities and improving quality of life.

The project favours access to a service framework that puts the users at the centre of a communicative process (both as information producer and consumer), and that stimulates the elderly's active participation to social life, preserving their autonomy and capacity in daily life.

1.2. History of developers

HOST is a Research and Development (R&D) project sponsored under the European Commission's Ambient Assisted Living (AAL) programme (reference: AAL-2010-3-041). Partners that form the project consortium are based in France, Italy, United Kingdom and Spain. The consortium includes three social housing operators, three SMEs that provide ICT technologies and three research entities.

As concerns Italy:

FINABITA is the national service agency of Legacoop Abitanti (that comprises 1,000 cooperatives). It offers technical and financial services for the development of residential programmes. Its subcontractor AeA provides guidelines for the improvement of elderly's housing conditions, promotes home assistance and favours the development of innovative housing offers.

FINABITA has developed a particular sector of activity in supporting development of real estate funds for social housing: start-up activities, feasibility studies and realisations. In detail, its activities consist in:

- Assistance with procedures for access to favoured credit lines, national and European
- Elaboration of feasibility studies and coordination of complex urban programmes
- Assistance in promotion and realisation of housing programmes for un-wealthy social categories

- Elaboration of feasibility studies for the management and development of buildings in course of dismission and for the constitution of real estate funds for social housing
- Assistance with applicable laws and procedures in social housing
- Promotion and participation in partnerships for European projects in the fields of technological innovation, energy saving and social housing sector development
- Assistance in development of human resources, in company improvements and in development of cooperative promotion projects
- Project and realisation of brand and group external communication plans
- Study and research in innovation of products and services of inhabitant cooperatives
- Services for support of bio-building and energy saving
- Studies and strategic marketing in the field
- Promotion of development of insurance and financial products for housing

In the latest years, exploiting the creation of social real estate funds, FINABITA has developed a specific know-how in assisting housing management cooperatives, with regards to social accompaniment, environmental sustainability and energy saving.

BioResult S.r.l. is a SME that provides innovative solutions, tools and technologies for the design and management of processes in environment sciences and protection of frail people (for instance, pharmaceutical and medical support, social well-being, assistance). Bioresult has a close interdisciplinary relationship with the modern biomedical systems, such as the case study and application of systems for the management of sensors to detect vital parameters. The company provides fixed sensors concerning environmental data, integrated with advanced domotic systems and it has wearable system to acquire vital parameters, in a context of Ambient Assisted Living (AAL).

CNR - ITC – Istituto per le Tecnologie della Costruzione is a research institute within the National research Council (a public organization), whose activities include studies, experiments and certifications of buildings, evaluation of innovative building products, trainings in the following subjects:

- Technological solutions, methodologies and instruments for environmental sustainability of buildings
- Non-conventional technologies and materials for pollution control in constructions
- Performance of materials, components and technologies for safe constructing
- Sustainable systems for air conditioning and cooling
- Methodologies and instruments for analysis and development of built environments
- ICT tools for the innovation of building processes and products
- Evaluation and certification of innovative products for building
- Training and information for the improvement of construction process and building management

CNR-ITC has five offices in Italy and 130 employees approx.

1.3. Sector activity

The HOST product will be prioritatively framed within the social housing sector. In Italy this is mainly represented by public flats and dwellings and those belonging to cooperatives, that sum about 900.000 houses.

The objective is to establish business relations with entities and companies that develop and manage housing estates destined to people with limited incomes who encounter difficulties to find accommodation and assistance services on the market, suitable for their needs and revenues.

Primary partners are to be identified in the sector of private social companies, in particular the cooperatives of residents, partners in the project through FINABITA, whose users are typically medium-low incomers.

In a second phase the HOST product can be placed within companies that manage public owned houses, that typically serve families with very low incomes, who as such often depend on public assistance for access to home assistance services.

Finally, a new housing segment is developing in Italy, that of social housing funds, which is expected to build about 20.000 houses in 5 years, mainly for renting.

1.4. Level of technology

There are lots of technological solutions designed for the care of older and frail people, especially in the field of medicine, assistance and home automation. However, few applications or ICT systems can be found that are specifically designed to be used directly by the elderly for their own advantage. There is a lack of ICT solutions that may facilitate the adoption by the old people themselves, through easy, intuitive and accessible interfaces or require operation in ways that resemble those of devices that the elderly are familiar with, such as TV sets, radio equipment, etc. Moreover, ICT tools and devices are often poorly configurable and adaptable to different capabilities, especially those of old people

Although there is consistent effort in providing health-care and assistance solutions to older people in their homes, there are few or non-existing applications and systems that may facilitate them in coping with everyday needs while at the same time expanding their leisure and social possibilities. The HOST product, instead, is especially and specifically designed and developed to provide a technological device and service package aimed to cover the needs of elderly. It provides a set of services that are tailored around everyday necessities and wishes.

2. Product

The purpose of HOST is to bring easily usable technologies and services in social housing, in order to allow a better level of communication and a better access to services by the elderly.

2.1. Product description

Devices

HOST offers easily usable services. It works on simple devices, such as TV sets, tablet PCs and smartphones. Through dedicated user interfaces, designed to be simple and

intuitive, older people are free to choose among a set of services, specifically provided for their daily needs, in a self-service manner.

The **tablet PC** communicates with the home server via Wi-Fi connection. The software interface is designed to grant to the final users an easy access to the services through the adoption of the integrated touchscreen. The graphical interface is optimized for medium and large screens (more than 7 inch., see picture below). The tablet includes a slot for GSM/GPRS/3G mobile connections to exploit wireless connections when Wi-Fi is not available. The technical choice is towards an Android platform, for its openness and configurability.

The tablet PC can also act as **set-top box** when connected to a digital TV screen via a HDMI connector. The software interface is designed to grant to the final users an easy access to the services through the adoption of a remote control (see Picture1). The set-top box can also be configured to work as home server. The proposal is based on this specific hardware.

Picture 1. Set-top box

The **smartphone** communicates with the home server via Wi-Fi connection and GSM/GPRS/3G too. The software interface is designed to grant to the final users an easy access to the services through the adoption of the integrated touchscreen. The graphical interface is optimized for small screens (less than 7 inch.)

Picture 2

Services

The offered services can be divided into three categories:

1. **House management**. The platform provides residents with a simplified access to information about housing (costs, scheduled maintenance, payments due, etc.), increasing user's involvement in the living environment. Furthermore, the presence of common digital equipment enables a digital tutoring among inhabitants in the residence and it creates sociability and assistance around the digital space. Different technological interfaces such as set-top boxes, tablet PCs and smartphone facilitates adoption by the elderly according to their preferences and abilities.

2. **Direct relation to local "circle of support"**. Maintenance of contact lists of friends, families, operators, that are in common among the older people, their relatives and acquaintances, the social housing operator, ad non-profit associations. All involved parties will exchange information through the platform. The concept is to allow the final users to directly contact the service providers and let them provide autonomously to their own needs. For instance, remote-assistance service will allow displaying of information directly on a screen when the user requests them to an operator. This asymmetric information trade will guarantee easy access for the elderly, while also improving effectiveness in response.

3. **House maintenance**. Older people can contact the housing service provider through the platform and report malfunctions, to request assistance or maintenance services. The provider will guarantee that a trustable professional (electricians, plumbers, etc.) takes care of the request. The platform enables a complete exchange of information between the provider and the users. For instance, an interruption of a common service (lift, common facilities, etc.) due to maintenance can be advertised while at the same time providing updates on the work in progress and time to completion. Such information can be shared on the Internet and shown on the different interfaces available to the elderly within their premises, and even displayed on wireless devices.

4. **Access to simplified e-commerce services**. Professional operators can exchange commercial data with the social housing server, which shows them to the users via a simplified and easy-to-manage interface. The elderly can then benefit from commercial offers and do their shopping in a protected environment. Orders are then processed by commercial operators.

2.2. Adaptation to users

The HOST platform provides a simplified and effective interface to interact with the elderly, and is designed for the social housing operators that want to improve communications with their users. It is highly configurable and adaptable, and it can be tailored around users' needs. In Italy the experimentation phase is conducted on an heterogeneous set of social housing organizations, that is representative of the local situation. These realities differ one from the other under various aspects.

The HOST platform allows to interface all of the local systems, one with the other; this is made possible by the Web Services oriented architecture (loose coupling), supporting a data model suitable for the representation of this heterogeneous environment, and the high level of adaptability of the whole platform. However, each local system will have to have a component that will be integrated into the main platform, to allow transparent coupling between them; in some cases also by managing human-driven, non-automatic, non-formalized activities.

2.2.1. Primary end-users

Different technological interfaces such as set-top boxes, tablet PCs and smartphone facilitates adoption by the elderly according to their preferences and abilities. The choice among different devices lets users leverage their abilities and minimise the risk of rejection due to difficulty with ICT. The application is designed with simplicity and clarity in respect of needs of the target client group. The services are ensured by specialised and dedicated organisations such as local social housing operators. These entities take in charge the life-cycle of the provided services in order to guarantee the effective use of the solutions and to coordinate the actors working with the elderly such as service providers and local authorities.

Through the assessment carried out during the co-design process, questionnaires were given to users and interviews were held, both to single people and groups, in order to obtain useful information. The perceived needs of elderly people mostly are:

- **Awareness in house management**. The system can easily make information visible about housing costs, bills to pay, consumptions and show messages and warnings about maintenance interventions in course.
- **Autonomy in house maintenance**. The system will allow easy reporting of malfunctions to the housing providers or provide the elderly with a list of crafters and maintainers that they can call by themselves to solve problems.
- **Autonomy in life and therapy management**. The system allows setting of reminders for drugs, calling for accompaniment or transportation services, and even online shopping, in particular for food and house needs.
- **Leisure opportunities**. The system lets the users stay in contact with their own circle of support, integrating Skype audio and video conferencing and so providing free calls to friends, families and even service providers. Moreover, it will allow booking of events and information about initiatives in the housing context.

2.2.2. Secondary end-users

Families and caregivers do not require particular adaptation of the system, as they typically are more aware and good willing towards technology. No particular resistance is typically seen towards ICT tools, as long as they are easy, affordable and bring effective help in the elderly's lives and in their care activities. However, access to information concerning the people they take care of can be granted, and service access personalised.

2.2.3. Tertiary end-users

The housing service provider can install and manage the client-server platform, which can adapt to the single user's needs. The ICT architecture can be configured differently, based on the service offer that the provider intends to deploy and the circle of professionals and associations around the housing premises. The housing provider can therefore offer new business opportunities to commercial operators and other service providers, which can establish commercial relations with the elderly through the platform. As the platform is easily adaptable, data exchange can be managed between the HOST system and other tertiary end-users entities: such data can be shown to the HOST users, who can request services on demand.

2.3. Innovation of the product

Currently there is no low cost software and service package specifically designed for older users in social housing. Moreover, in other places where such solutions are

proposed they are offered for high monthly fees, but most elderly refuse paying much for a service they are unsure to use. HOST can be offered at a very low price and keeping fees for final users at a very low level, as its costs of maintenance can be sustained by housing operators, commercial and business partners.

2.4. Service costs

As the HOST software platform is based on common Internet standards, limited costs for its industrialisation process are foreseen. Distribution process also, thanks to collaboration with associations, seems to present low costs.

The cost components identified in the production and commercialization of the HOST service are:

- **Production cost of the device.** It consists in the cost to manufacture the components of the HOST product. This cost includes the following economic figures, over five years.

  - Fixed costs (2.124.500,00 €), comprising:
    - Personnel: 1.337.000,00 €
    - Marketing and promotion: 100.000,00 €
    - General and administrative expenses: 422.500,00 €
    - Other costs: 265.000,00

  - Variable costs (2.639.120,00 €), comprising:
    - Technology Consulting costs: 225.000,00 €
    - Commercial costs for products and devices: 2.144.120,00 €

- **Distribution.** HOST product would be delivered to tertiary end-users by the Italian associations led by Finabita and Legacoop Abitanti, that have an extremely large coverage of the country's territory and they would distribute the service between their clients (primary and secondary end-users).
- **Promotion.** Finabita and Legacoop Abitanti are expected to leverage their nationwide coverage of social housing operators and, through Finabita's subcontractor Abitare e Anziani (AeA), to promote advertising about the HOST product and services, in order to highlight their convenience and opportunities along with their associated low costs.
- **After-sales service.** It consists in regular technical controls that will be made to the HOST product after the sale in order to detect any technical failure of the service. The Service Centre to be established as referral point for the whole Nation, will take care of issues that will be submitted by the users, along with regular after-sales calls. The first control call will be done after three months from purchase, the second after six months, every other call will follow once a year.
- **Adaptation cost.** The HOST product itself is largely adaptable and configurable. During the development, the product inn Italy was built around a configurable, scalable and extremely versatile platform on the server part. The design of the server part has reflected in the client side, where the modular design allows easy deployment of new services. Tests conducted both during the development and during the deployment of pilot devices to test users have demonstrated that small configurations and changes require few hours of work due to the carefully-designed configurability of the system. For medium to large changes, the order of effort required is man-days rather than man-months. Moreover, the central architecture of the HOST system allows immediate

updates by automatic download and installation of new versions, directly on the device and without user intervention. These features are proven to lead to substantial cost-savings in the product life-cycle, apart from constituting a great advantage in fostering updates and adaptations to new needs or opportunities, again, due to low costs.

3. Market analysis

So far, social housing offers services to users such as:

- Network of partners (or local services) to provide services on demand for house-keeping and house maintenance. Typically, these are craftsmen or small companies located nearby the housing, or in some cases service cooperatives or volunteers
- Call-centre to interact with users. Typically, this is managed directly by administration personnel of housing operators. Only in rare case, such call centres are leased from specialised companies but they do not have a real service function. The operator collects information and requests, and later sends them directly to the service provider or to the providers' coordinators.
- Internet services in some dwellings, but in all cases not to grant access to information such as payments due or residential meetings, typically printed and delivered in users' mailboxes or attached to the residence's notice board. The bill for services and consumptions is sent via ordinary mail or given by hand. All information regarding the residence or housing is attached to boards.
- Older residents, their families and health and care operators can typically interact directly by the phone. Close to never, less intrusive but more advanced media (email, chat, videoconference) are seen as services given by the housing operator at the residents' disposal.

HOST aims to bring social housing standards for the elderly to a larger extent, by offering new services to people and their communities.

It can be stated that currently there are no software platforms and service package to be specifically designed for the elderly living in social housing.

3.1. Sector

Finabita is active in promotion, research, development and management of complex housing programmes, in favour of its associates throughout the whole Italian territory and in favour of public and private entities, with the objective to respond to housing needs of less wealthy. On an average basis, associate cooperatives build new 8.000 dwellings a year and manage about 40.000 dwellings to rent.

Considering a market penetration index of 10% in the two years following the end of experimentation phase, the HOST solution could be adopted in 4.000 houses (about 6.000 users).

After that, with experiences and references acquired, a promotion campaign will be adopted towards other cooperatives not in the Legacoop scope, and finally towards those elderly who do not live in social housing, but who need home assistance in their private-owned houses. Prudentially, an equal number of houses and users (about 4.000 flats and 6.000 users) can be foreseen in this phase that will last for the following two years.

On a medium-long term, potentially interested user basis is extremely wide and is destined to grow further, as a consequence of the worldwide population ageing process. Indeed, Italy is among the European countries with highest rates of older population, with peaks in some regions that detain the record of oldest areas in Europe and maybe in the world.

The National Statistical Institute (ISTAT) estimates percentage of elderly among the total population at 20% and an age index (defined as ratio between those over 65 and those under 14) of 144.5 in 2011, definitely higher than the one estimated in 2001 (129.3).

Statistics also show that 3% of the population is affected by functional impairments, 2.3% has movement difficulties and that 29.6‰ has permanent movement handicaps.

In this scenario, an additional user basis for HOST will be represented by the new houses for older people that will be realised under the recent “Piano nazionale di edilizia abitativa” (National Plan for housing, art. 11 Law 133 / 2008), that focuses on older people as priority category for housing destination.

A fund called FIA has already been constituted to put the Plan into practice, and it is estimated that about 90.000 social housing dwellings will be built in the next 5 years. Among these, the part reserved to people over 65 is estimated to comprise about 15,000 elderly, that will constitute an interesting potential market development for HOST (third phase). Estimating a 10% percentage, the product may interest 1,500 older users.

To sum up, the potential user basis is 6,000 in the first phase (within two years from project completion), 6,000 in the second phase (third and fourth year) and 1,500 in the third phase (fifth year).

3.2. End-users

This section describes the three kinds of end-users of HOST service: primary, secondary and tertiary.

3.2.1. Primary end-users

Older people often show reluctance to the use of technology, unless its usage in some way resembles familiar devices or when it is easy to use. Older people typically tend to prefer simple and intuitive technologies such as touch screens or TV-set remote controls. Acceptance tests have shown that older people prefer the use of ICT tools for leisure and for solving everyday problems, rather than for health reasons.

3.2.2. Secondary end-users

Caregivers are younger people who are aware and better inclined towards technology. Their aim is to have technology to ease their burden in taking care of the elderly, while at the same time being reassured that the people they take care of, really benefit from usage of such technology. No particular resistance is typically seen towards ICT tools, as long as they are easy, affordable and bring effective help in the elderly’s lives.

3.2.3. Tertiary end-users

As aged population is growing and demand for social housing is growing, competition is increasing, especially in city centres, between local and international providers of housing solutions, and the need to ensure customer satisfaction and loyalty is increasing accordingly. The possibility to offer services to single flats or collective residences and let older people access them autonomously, constitute a growing market opportunity with enormous potential. Social housing operators are organized in

a network and can all benefit from a dedicated service-providing system in the realm of Ambient Assisted Living, if efficiently extended through the country.

3.3. Competition

Currently there are no software platforms and service package to be specifically designed for the elderly. In particular, there is no proposed solution to be tailored for older people living in social housing.

4. SWOT analysis

This analysis consists on evaluate the Strengths, Weaknesses, Opportunities and Threats that would be found in the development and implementation of HOST product in Italy.

WEAKNESSES Services often offered by volunteers. Complexity of the system. Interaction between users and providers.	**THREATS** Technological gap and users' rejection Scarce interest from service providers.
STRENGTHS New and innovative idea. Increased users' autonomy. Users' benefits. Easy-to-use design.	**OPPORTUNITIES** Expansion of home care policies due to ageing population. No competitor in the field. Internet standard-based equipment and software

Figure 1. SWOT analysis.

4.1. Strengths

The strengths of the solution are here listened:

- The innovation of the service offered, the questionnaires that were submitted to users showed that the idea is new and interesting to users and caregivers. Feedback from pilot users is positive. Questionnaires that will be submitted at the end of the evaluation phase will probably give confirmation.
- Increased elderly autonomy and how long they can be autonomous. Providing older users with services that are orderable and consumable in their own houses by themselves can only improve their independence and keep them active in self-providing and self-curing.
- Users perceive the system as an opportunity for a better quality of their lives, for an enhancement of their leisure possibilities and their independence, or as a way to "get more control" upon their everyday activities. They can play games, participate better in their circle of support's life and interactions. They can speak to friends and families even face to face. They can have problems fixed in their houses at the click of a button and even shop online.
- Easy-to-use design helps overcome the elderly's natural reluctance towards technology. The sense of satisfaction by the older people when gathering

confidence with ICT tools is remarkable and increases their self-assurance. The co-design approach that has been adopted in the development of the HOST product guarantees, and this can already be seen in the pilot trials, that users very soon acquire ability to use the system as to execute complex activities in a short period of time. Guarantee of result comes from the fact that most users ask for more services or improvements of the existing.

4.2. Weakness

Characteristics that place the service at a disadvantage can be:

- To keep costs low, some services may be granted by volunteers of the associations that take care of the elderly (for instance, transportation). This may cause delays or unavailability of the service, or imply a difficulty for the users to be sure that a service is delivered at the time they need. This may lead to disaffection by the users.
- Complex system in the provision and service organization. Many users may have to be connected at the same time and cope with a large extent of needs. This requires proper organization.
- Requesting a service does not imply acceptance by the provider exactly in the terms and time of the request. Sometimes a negotiation may be needed between the user and the provider. The system may not be suited to permit such negotiations.

4.3. Opportunities

External chances to make greater profits in the market:

- Local and national governments are paying great attention to changes in society due to ageing population. Many private entities are exploring market possibilities offered by older people. Need for social housing is growing and demand for services is increasing. Competition in the field is become non-negligible and requires providers to make a difference and here's where HOST comes in.
- There is no comparable product in Italy, so the social housing market is currently free from competitors. It's a new and unexplored market but with potential
- Great accessibility and low cost of equipment and services, as based on Internet standard and affordable devices.

4.4. Threats

External elements in the market that could cause trouble for the service are:

- Low knowledge by the potential users about technology and availability of the service. Resistance to adopt technology for ordinary daily activities.
- Professionals and service providers may not be interested to business opportunities related to HOST, as difficult to manage or too sparse or scarce to be profitable.

Service Concept (Italy)

1. Detailed description of the product

Hereafter the service concept offer for HOST product in Italy is detailed.

1.1. Product

The HOST platform provides a simplified and effective interface to interact with the elderly, and is designed for the social housing operators that want to improve communications with their users. It is highly configurable and adaptable, and it can be tailored around users' needs.

The HOST product offers easily usable services to older people living in social housing flats.

It works on simple devices, such as TV sets, tablet PCs and smartphones. Through dedicated user interfaces, designed to be simple and intuitive, older people are free to choose among a set of services, specifically provided for their daily needs, in a self-service manner.

1.2. Protocol of use, services and devices

HOST favours access to a service framework that puts the users at the centre of a communicative process (both as information producer and consumer), and that stimulates the elderly's active participation to social life, preserving their autonomy and capacity in daily life. The Figure 1 shows the concept related to the protocol of use.

Elderly have needs and wishes that the system actively contributes to satisfy. Through user interfaces hosted on smartphones, set top boxes and tablet PCs, users can access a variety of services managed by a central server. As a first option, the server grants access to the user's circle of support (family, social services, health system, local providers, etc.). Moreover, the server allows exchange with the social housing operator (house maintenance services, social activities and so on) also through the intercation with a call centre if present. Finally, a range of Internet services are provided for leisure and for the ease of daily life (online shopping, online gaming, news, podcasts, weather forecast, etc.).

It is important to note that training sessions are provided to make the older users feel confident with the use of the system as quickly as possible. A half-a-day session is provided in groups, while other one or two hours can be spent with every single user in face-to-face sessions to respond to issues or misunderstandings that can arise during the group training sessions. This encourages a positive attitude of elders towards using new technologies, and promotes their self-efficacy and autonomy.

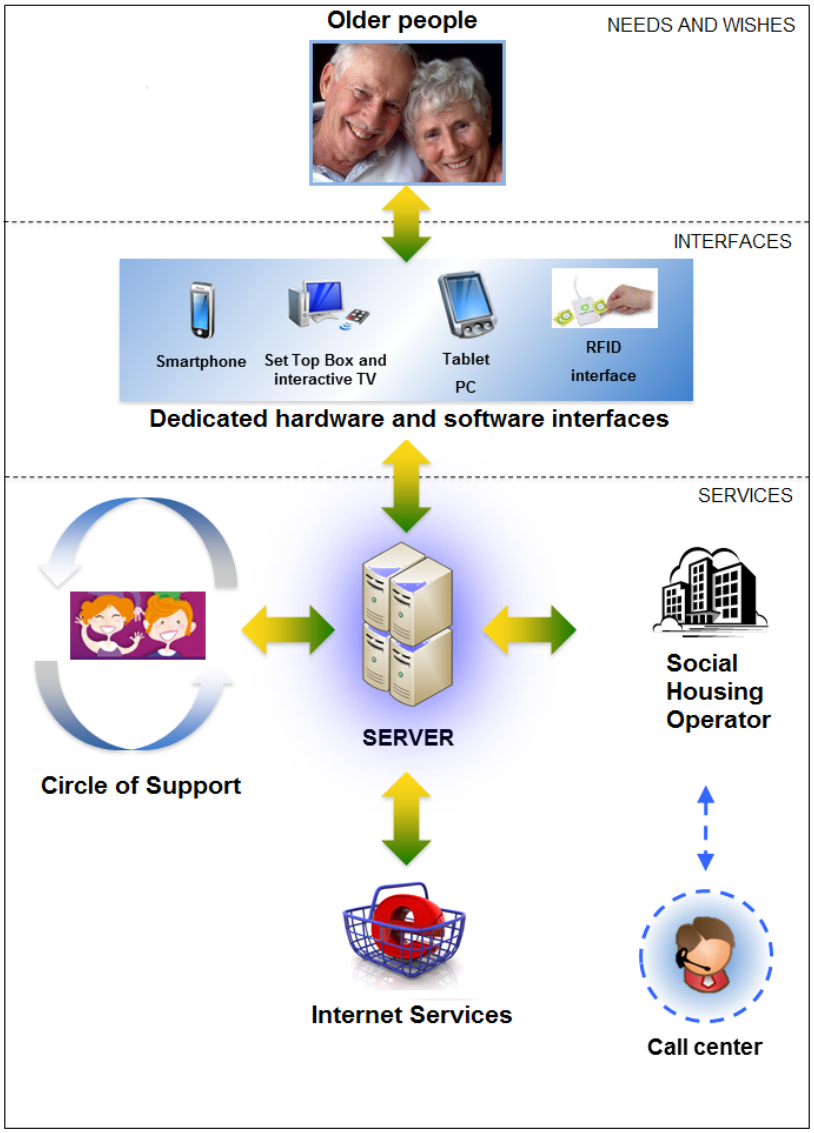

Figure 3. Protocol of use diagram

1.2.1. Services

The offered services can be divided into three categories:

1. House management. The platform provides residents with a simplified access to information about housing (costs, scheduled maintenance, payments due, etc.) (see Figure 1).

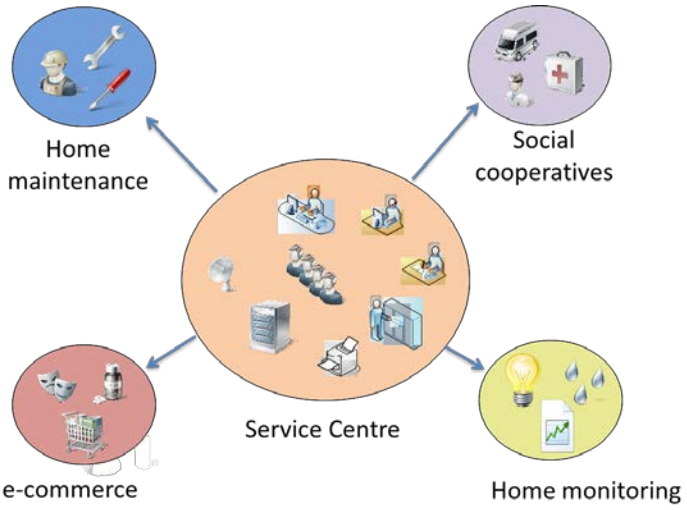

Figure 2. Diagram of home management services

2. Direct relation to local "circle of support". Maintenance of contact lists of friends, families, operators, that are in common among the older people, their relatives and acquaintances, the social housing operator, and non-profit associations. HOST allows the final users to directly contact the service providers and let them provide autonomously to their own needs. The HOST product in Italy seamlessly integrates the Skype platform and so permits audio and videoconferencing (see Picture 1).

Picture 3. Communication services screenshot

3. House maintenance. Older people can contact the housing service provider through the platform and report malfunctions, to request assistance or maintenance services. The provider will guarantee that a trustable professional (electricians, plumbers, etc.) takes care of the request.

4. Access to simplified e-commerce services. Professional operators can exchange commercial data with the social housing server, which shows them to the users via a simplified and easy-to-manage interface. The elderly can then benefit from commercial

offers and do their shopping in a protected environment (see Picture 2). Orders are then processed by commercial operators.

Picture 4. e-commerce services screenshot

1.2.2. Devices

Different technological interfaces are adopted: set-top boxes, tablet PCs and smartphone. The choice among three different types of devices facilitates adoption by the elderly according to their preferences and abilities.

The set-top box is connected to a digital TV screen via a HDMI connector (see Picture 3). The software interface is designed to grant to the final users an easy access to the services through the adoption of a remote control. The set-top box can be configured to work as home server.

The tablet PC communicates with the home server via Wi-Fi connection. The software interface is designed to grant to the final users an easy access to the services through the adoption of the integrated touchscreen. The graphical interface is optimized for medium and large screens (more than 7 inch.)

Both interfaces can be managed by one single device and the proposal will be based on this specific hardware (see figure below). The device can be connected to a TV set in a set-top box configuration and be used as tablet PC too.

Picture 5. Set-to box

The smartphone communicates with the home server via Wi-Fi connection. The software interface is designed to grant to the final users an easy access to the services through the adoption of the integrated touchscreen (see Picture 4). The graphical interface is optimized for small screens (less than 7 inch.).

Picture 6. Smartphone

1.3. Ethical aspects

Ethical aspects in Italy have been analysed and undertaken as concerns:

- Information about implications of the participation in the project and about usage of personal data of those elderly who take part in the HOST experimentation. Older users, care givers and housing companies have signed an informed consent about objectives, participation in the experimentation phase, option to exit the project and the experimentation at any time, limitations and conditions in usage of data provided by them or collected during the project. Collected data are stored in protected locations on servers. Activity on the servers is subject to personal authentication, and all sensitive data treatment and manipulation are logged in order to protect the users' privacy.
- Accessibility of technology in regard to each participant's specific abilities, in order to preserve the individual's learning capabilities and to avoid conditions of stress or demotivation due to difficulties with technological devices. Each user can choose a preferred input interface. Touch screens and remote controls are provided. Users are free to try them as long as they want and in the time they

want. The system is built to be extremely stable and remain in a working state no matter what the users tap on or trigger by the remote control. However, the system can be easily reset to an initial state if the user inadvertently takes inappropriate actions or the operating system hangs. This reset operation can be done manually by the user or remotely, with no intervention on site. This guarantees that the users can use the tool without being afraid of "breaking something".

- Technology's obtrusiveness in daily life style, by studying participated ways to choose interfaces, to determine optimal collocation of the product at users' homes and to ensure usage continuity after the experimentation. When the system is installed, the user is given training sessions, both in groups and individually. This ensures that the users take confidence with the system gradually, with their time and according to their capabilities. Installation in the house is done with the user deciding where to put all hardware. The HOST system is in any case non-obtrusive. In case other equipment is needed (e.g. ADSL routers), it is always chosen among small-factor boxes off-the shelf, with wireless capabilities where possible in order to avoid wires in the house, and the location is always up to the user.

2. Users

In this section the three types of HOST end-users: primary, secondary and tertiary are described. Several interviews were taken to assess the needs of potential users. Ranging from the elderly, to caregivers, family members, and even housing operators, a detailed list of service needs was compiled. An accurate analysis carried out among social housing companies indicated the following sites for the experimentation:

- Cooperative "G. Di Vittorio" in Borgaro and Orbassano;
- Foundation "Opera Don Baronio" in Cesena;
- Cooperative "La Casa" in Lizzanello;
- Cooperative "AIC" and Cooperative "Icrace" in Rome.

Figure 3. Experimental sites in Italy

The Figure 3 of the country indicates the chosen experimental sites. Even if the number was small, the enlarging experimentation to one Central and one Southern region was welcome as a possibility to underline at least some principal territorial differences.

The number of older people contacted in the first co-design workshop is 32, while the number of 20 people who accepted to participate was distributed as follows:

- 2 (to 4) in Borgaro and 7 (to 8) in Orbassano;
- 3 in Cesena;
- 2 in Lizzanello;
- 6 in Rome.

Workshops were established, one per experimentation with social housing company and one with young adults and older people and relatives or caregivers. This is due to the fact that each meeting was centered only partially on common goals and that in this way the social housing companies had the possibility to inform the older people about the project and its usefulness for them before the meetings among partners and older people.

In order to prepare the meetings, questionnaires were prepared:

A. for the older people;
B. for the social housing companies;
C. for the caregivers.

To assess the situation and their specific needs. The HOST system provides an answer to most of these needs, which are described in the following tables.

2.1. Primary end-users

In the Table 1, the needs of primary end-users (elderly people), resulting from all of the interviews and questionnaires are described, along with the HOST service functions addressed to them, as well as the benefits that they can achieve with the use of the service.

The first need expressed by the elderly is for a *better knowledge of costs* related to housing. They want to know more in advance about their consumptions, expenses due to common spaces and structures' maintenance that will be charged to their accounts. Most of the older people expressed the desire to enlarge their *social and leisure opportunities*, both within the housing context and outside, so asked for the possibility to be informed about events and leisure opportunities, to book tickets and play games online. Elderly also want *to be autonomous* in having problems fixed in their houses, but also want to be sure that their requests are promptly coped with so they welcome a system to allow them to place requests and get a feedback on when and how malfunctions will be fixed. Requests for improved autonomy came also in the form of possibility to have *reminders for appointments*, events and hours to take medicines. An interest was shown towards booking of services for transportation (to doctors, shops) or accompaniment. Same interest came for *online shopping* of food and drugs. However, the service that elderly valued the most was the possibility to easily *communicate with their circle of support*, possibly free of charge and instantly.

Primary end-users	Needs	Service functions	Service benefits
elderly people	Awareness in house	Information about	Knowledge in

	management	housing accessible in the system	advance about housing costs, maintenance in course etc.
	Leisure opportunities	Possibility to book events and buy tickets, be informed about initiatives in the housing context	Participation in the housing's and outdoor social life
	Autonomy in house maintenance	Possibility to report malfunctions directly to the housing provider and repairers	Enlarged sense of independence
	Autonomy in life and therapy management	Reminders for events, drugs, appointments, and so on	Enlarged sense of independence
		Easily book-able transportation service	Enlarged sense of independence
		Online shopping (food or drugs)	Possibility to browse shopping opportunities online, then buy Certainty to provide for themselves even if ill or with bad weather conditions
	Communication with families, service providers and other older people	Integrated Skype audio and video conferencing, information exchange flows in the system	Free calls to people within the elderly's circle of support, direct contact with service providers

Table 1. Needs, service functions, service benefits and tasks addressed to primary end-users in the use of the HOST service

2.2. Secondary end-users

In the Table 2, the needs of secondary end-users (formal and informal caregivers, family members, and friends) are described, along with the HOST service functions addressed to them, as well as the benefits that they can achieve with the use of this service.

Those who take care of elderly are concerned about people entering their relatives' and patients' houses. Employment of a system that guarantees reliability of technicians and crafters that fix malfunctions is valued. Moreover, they welcome a system that allows

reachability in an easy and free manner, and that can provide a help for the elderly to follow their therapies correctly. On the other side, friends privilege possibilities offered by the system to improve social aspects of life.

Secondary end-users	Needs	Service functions	Service benefits
Informal caregivers	Secureness guaranteed for the elderly against fraud	Only housing owners' trusted providers allowed in the system	Reliable service providers guaranteed
	Possibility to keep in contact with elderly	Integrated Skype audio and video conferencing, information exchange flows in the system	Free calls and information exchange with the elderly
Formal caregivers	Reassurance about the elderly following therapies	Reminders for drugs and confirmation of assumption	Enlarged trust in the elderly, sense of tranquillity
Friends	Possibility to keep in contact with elderly	Integrated Skype audio and video conferencing, information exchange flows in the system	Free calls and information exchange with the elderly
	Leisure opportunities with the older people	Possibility to be invited, as part of the elderly's circle of support, to initiatives in the housing context and outside.	Participation in the housing's and outside social life
		Online gaming	Sharing leisure experiences with the elderly in the housing

Table 2. Needs, service functions, service benefits and tasks addressed to secondary end-users in the use of the HOST service

2.3. Tertiary end-users

In the Table 3, the needs of tertiary end-users (social housing companies, associations) are described, along with the HOST service functions and tasks addressed to them, as well as the benefits that they can achieve with the use of the system.

Essentially, tertiary users can be divided into two categories: housing companies and volunteers' associations. For the former, all advantages are related to an increase in their business opportunities due to provision of a system that has no comparison on the market. For the latter, the most valued possibility offered by the system is the help it can give them in better managing volunteers' involvement and time.

Tertiary end-users	HOST implementation	Service benefits	Costs
Social housing companies	Install and manage the HOST platform	Make a difference upon other housing providers	From 5.000 Euro to 40.000 Euro
	Extend business opportunities to commercial operators and professionals	Minimize HOST service costs for themselves and their customers	Variable with the number of actors involved
Associations	Participate in the HOST local implementation's support circle	Fulfil elderly's needs with reduced burden and maximize volunteers' outcomes	Free

Table 3. Implementation, service benefits and costs addressed to tertiary end-users in the use of the HOST service

Marketing Plan (Italy)

1. Executive summary

Following are the sections that comprise the Marketing Plan for HOST product in Italy: Analysis of the current situation both of the market and environment as well as of the situation of the enterprise, and a diagnostic related to the introduction of the HOST product into market, Objectives to achieve, Cost-benefit analysis, Plan to successfully control the achievement of purposes established within the marketing plan

2. Analysis of the current situation

As concerns introduction of the HOST product into Italian market, the following analysis only regards analysis of the external situation.

2.1. Analysis of the external situation

2.1.1. General environment

In the modern digital society, people can access an increasing number of products, services, contents and information mainly on-demand, via the Internet. This new self-serve society is founded on the common use of ICT but also on the ability to successfully have at your disposal the right channels on a free choice basis.

Nowadays, the complex skills needed to benefit from the current technological framework, tend to exclude an increasing number of elderly people. They do not have a sufficient IT education to use the proposed technologies, so they remain anchored in their habits and in what they know well. Such constraints can prevent elderly people to make the most of technological opportunities to help them in their everyday life, having for potential consequence a critical and unacceptable digital exclusion.

In this context, social housing constitutes the application domain to offer appropriate housing conditions to the individuals with special needs and who cannot afford market prices and rents. This population is mostly composed of seniors with low incomes. But several examples show that social operators are using more and more ICT to improve the elders' quality of life and independence.

Numbers provided from Finabita help define the marketing environment.

On an average basis, associate cooperatives build new 8.000 dwellings a year and manage about 40.000 dwellings to rent.

Considering a market penetration index of 10% in the two years following the end of experimentation phase, the HOST solution could be adopted in 4.000 houses (about 6.000 users).

After that, with experiences and references acquired, a promotion campaign will be adopted towards other cooperatives not in the Legacoop scope, and finally towards those elderly who do not live in social housing, but who need home assistance in their private-owned houses. Prudentially, an equal number of houses and users (about

4.000 flats and 6.000 users) can be foreseen in this phase, that will last for the following two years.

On a medium-long term, potentially interested user basis is extremely wide and is destined to grow further, as a consequence of the worldwide population ageing process. Indeed, Italy is among the European countries with highest rates of older population, with peaks in some regions that detain the record of oldest areas in Europe and maybe in the world.

The National Statistical Institute (ISTAT) estimates percentage of elderly among the total population at 20% and an age index (defined as ratio between those over 65 and those under 14) of 144.5 in 2011, definitely higher than the one estimated in 2001 (129.3).

Statistics also show that 3% of the population is affected by functional impairments, 2.3% has movement difficulties and that 29.6‰ has permanent movement handicaps.

In this scenario, an additional user basis for HOST will be represented by the new houses for older people that will be realised under the recent “Piano nazionale di edilizia abitativa” (National Plan for housing, art. 11 Law 133 / 2008), that focuses on older people as priority category for housing destination.

A fund called FIA has already been constituted to put the Plan into practice, and it is estimated that about 90.000 social housing dwellings will be built in the next 5 years. Among these, the part reserved to people over 65 is estimated to comprise about 15,000 elderly, that will constitute an interesting potential market development for HOST (third phase). Estimating a 10% percentage, the product may interest 1,500 older users.

To sum up, the potential user basis is 6,000 in the first phase (within two years from project completion), 6,000 in the second phase (third and fourth year) and 1,500 in the third phase (fifth year).

2.1.2. Specific environment

Currently there are no software platforms and service package to be specifically designed for the elderly. In particular, there is no proposed solution to be tailored for older people living in social housing.

3. Diagnostic of the situation

While BioResult is active in innovative solutions, tools and technologies for the design and management of processes in environment sciences and protection of frail people, FINABITA is active in promotion, research, development and management of complex housing programmes, in favour of its associates throughout the whole Italian territory and in favour of public and private entities, with the objective to respond to housing needs of less wealthy.

Elderly’s population in Italy at January, 1st, 2011 has gone over the threshold of 20%, with an ageing index of 144,5 older every 100 young people. Demographic forecasts for the next 40 years indicate a further increase in older people population, that will reach 35% of total population around 2050.

Population ageing and increase of life expectation have a strong impact on social and health public expense, already impaired due to the economic and employment crisis that is striking Italy and Europe overall.

The sector of public services to people and families is becoming more and more critical, as many of traditional welfare interventions are now weighing on families: in 2010, on an overall health public expense of about 115 billion euros, 7,4% of GDP, (1.900 euro year/inhabitant), families contribute with their own resources for slightly more than 21%.

Same condition is present in social assistance sector. Regional waiting lists for home intervention to contrast non-self-sufficiency conditions are growing all through Italy and mostly in Calabria, Campania, Lazio, Piedmont.

To contrast improper hospitalisation, not sustainable by the State nor by most elderly, it is necessary to favour their staying in their own houses for as long as possible, yet supported by a system of services and home aid that can mitigate deficiencies of ageing.

Houses that host families with older people are over 6 million, mainly constituted by 1 or 2 people, typically in couple (almost 73%, 4,5 million houses). Almost 2 million houses, 32,70%, host elderly on their own. For many of these, staying in their houses means the possibility to count on a home support network that guarantees adequate living standards and the possibility to keep their lifestyles intact.

Third-sector organisations have been operating for several years with these purposes. Associations include no-profit entities, social cooperatives and volunteer associations, which are active in offering support services to people, both on the health side and on the social and relational.

Volunteer organisations constitute a particularly important resource in Italy, as they offer a wide range of services to cope with elderly's social requests, at small costs allowed by the social motivation of those who offer their time and abilities to others. Among these stands the AUSER, an association that promotes self-management of services to elderly (300.000 members, 40.000 active volunteers and more than 1500 offices in Italy), that since 1989 offers a nation-wide social telephony service, organises active older volunteers to help other older people with assistance, company, transportation, entertainment, culture, free time, learning. It helps over 430.000 people in difficulty every year, with 2 million euros in investments for help to elderly in 2009, 57% more than in the previous year and 62,1% more than in 2007. AUSER, together with FINABITA, with retired people union SPI and other union and cooperative structures, participates in AeA, the association that promotes the improvement of elderly's housing conditions.

Hereafter a SWOT analysis is reported (it is the same presented in the Business Model) (see Figure 1).

WEAKNESSES Services often offered by volunteers. Complexity of the system. Interaction between users and providers.	**THREATS** Technological gap and users' rejection Scarce interest from service providers.
STRENGTHS New and innovative idea. Increased users' autonomy. Users' benefits.	**OPPORTUNITIES** Expansion of home care policies due to ageing population. No competitor in the field.

Easy-to-use design.	Internet standard-based equipment and software

Figure 1. SWOT analysis.

4.1. Strengths

The strengths of the solution are here listened:

- The innovation of the service offered, the idea is new and interesting to users and caregivers.
- Increased elderly autonomy and how long they can be autonomous.
- Users perceive the system as an opportunity for a better quality of their lives, for an enhancement of their leisure possibilities and their independence, or as a way to “get more control” upon their everyday activities.
- Easy-to-use design helps overcome the elderly’s natural reluctance towards technology. The sense of satisfaction by the older people when gathering confidence with ICT tools is remarkable and increases their self-assurance.

4.2. Weakness

Characteristics that place the service at a disadvantage can be:

- To keep costs low, some services may be granted by volunteers of the associations that take care of the elderly (for instance, transportation). This may cause delays or unavailability of the service, or imply a difficulty for the users to be sure that a service is delivered at the time they need. This may lead to disaffection by the users.
- Complex system in the provision and service organization. Many users may have to be connected at the same time and cope with a large extent of needs. This requires proper organization.
- Requesting a service does not imply acceptance by the provider exactly in the terms and time of the request. Sometimes a negotiation may be needed between the user and the provider. The system may not be suited to permit such negotiations.

4.3. Opportunities

External chances to make greater profits in the market:

- Local and national governments are paying great attention to changes in society due to ageing population. Many private entities are exploring market possibilities offered by older people. Need for social housing is growing and demand for services is increasing. Competition in the field is become non-negligible and requires providers to make a difference and here’s where HOST comes in.
- There is no comparable product in Italy, so the social housing market is currently free from competitors. It’s a new and unexplored market but with potential
- Great accessibility and low cost of equipment and services, as based on Internet standard and affordable devices.

4.4. Threats

External elements in the market that could cause trouble for the service are:

- Low knowledge by the potential users about technology and availability of the service. Resistance to adopt technology for ordinary daily activities.
- Professionals and service providers may not be interested to business opportunities related to HOST, as difficult to manage or too sparse or scarce to be profitable.

4. Establishment of objectives

Following, objectives are listed about achievement foreseen by introducing HOST product into market. It is necessary to establish two kinds of marketing objectives:

- **Quantitative objectives.**

The potential user basis is 6,000 in the first phase (within two years from project completion), 6,000 in the second phase (third and fourth year) and 1,500 in the third phase (fifth year). This leads to the following economic Table 1 and Figure 2 (text in Italian):

BUSINESS CASE PER HOST	1° Anno Totale	2° Anno Totale	3° Anno Totale	4° Anno Totale	5° Anno Totale
VENDITE					
Servizio base	€ 324.000	€ 612.000	€ 918.000	€ 1.260.000	€ 1.476.000
Servizio con relazione diretta al circolo	€ 28.800	€ 72.000	€ 108.000	€ 126.000	€ 162.000
Servizio con manutenzione della casa	€ 28.800	€ 72.000	€ 108.000	€ 126.000	€ 162.000
Servizio e-commerce	€ 28.800	€ 72.000	€ 108.000	€ 126.000	€ 162.000
	€ -	€ -	€ -	€ -	€ -
	€ -	€ -	€ -	€ -	€ -
TOTALE VENDITE	€ 410.400	€ 828.000	€ 1.242.000	€ 1.638.000	€ 1.962.000
COSTI VARIABILI					
Consulente esperto tecnologo sistema	€ 45.000	€ 45.000	€ 45.000	€ 45.000	€ 45.000
Costi Commerciali	€ 208.120	€ 318.400	€ 427.600	€ 546.400	€ 643.600
	€ -	€ -	€ -	€ -	€ -
	€ -	€ -	€ -	€ -	€ -
TOTALE COSTI VARIABILI	€ 253.120	€ 363.400	€ 472.600	€ 591.400	€ 688.600
MDC	€ 157.280	€ 464.600	€ 769.400	€ 1.046.600	€ 1.273.400
COSTI FISSI					
Personale	€ 267.400	€ 267.400	€ 267.400	€ 267.400	€ 267.400
Marketing & Promozione	€ 20.000	€ 20.000	€ 20.000	€ 20.000	€ 20.000
Spese Generali e Amministrativi	€ 84.500	€ 84.500	€ 84.500	€ 84.500	€ 84.500
Altri Costi	€ 53.000	€ 53.000	€ 53.000	€ 53.000	€ 53.000
TOTALE COSTI FISSI	€ 424.900	€ 424.900	€ 424.900	€ 424.900	€ 424.900
MOL	-€ 267.620	€ 39.700	€ 344.500	€ 621.700	€ 848.500
INVESTIMENTI					
Ammortamenti Investimenti	€ 109.000	€ 137.000	€ 137.000	€ 109.000	€ 109.000
Avviamento	€ -	€ -	€ -	€ -	€ -
TOTALE INVESTIMENTI	€ 109.000	€ 137.000	€ 137.000	€ 109.000	€ 109.000
MON	-€ 376.620	-€ 97.300	€ 207.500	€ 512.700	€ 739.500
ONERI FINANZIARI					
Gestione finanziaria	-€ 22.597				
Gestione straordinaria	€ -	€ -	€ -	€ -	€ -
TOTALE	-€ 22.597	€ -	€ -	€ -	€ -
RAI	-€ 354.023	-€ 451.323	-€ 243.823	€ 268.877	€ 1.008.377
Imposte	€ -	€ -	€ -	€ -	€ -
RN	-€ 354.023	-€ 451.323	-€ 243.823	€ 268.877	€ 1.008.377

Table 1. Costs

Those numbers bring to a break-even point in the second year of activity after the project completion, as shown in the picture below (in Italian):

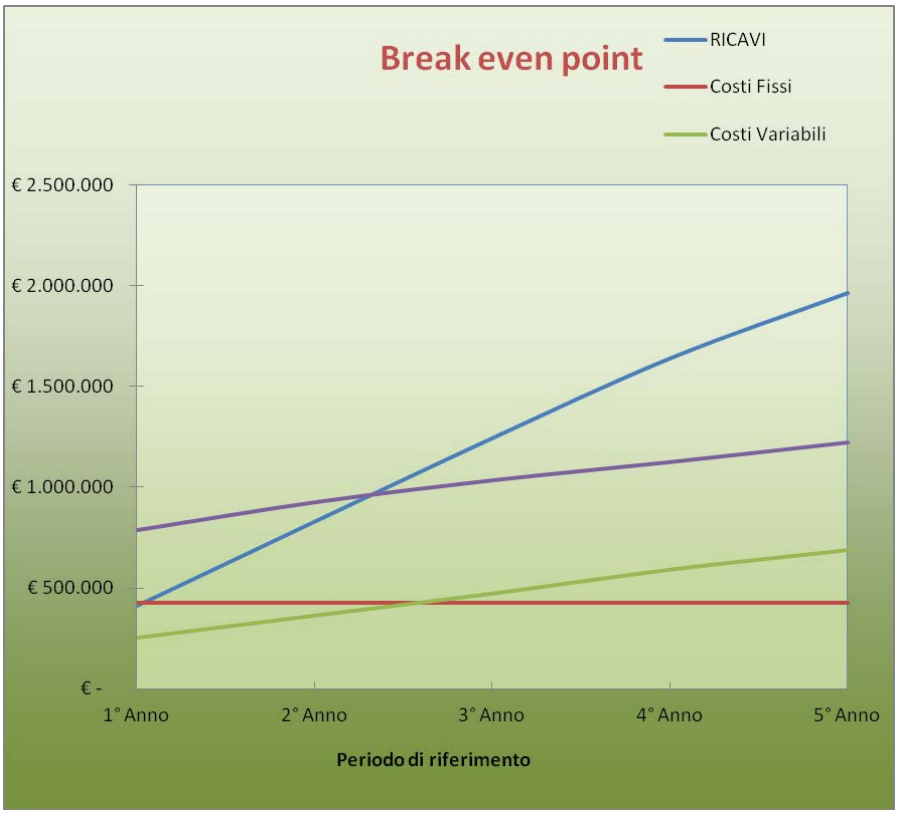

Figure 2. Costs

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- **Qualitative objectives.**

Qualitative objectives in Italy are measured, based on the levels of satisfaction of users' needs by the services activated through the HOST platform. Such levels refer to the three target user categories:

- Final users (primary)
- Care givers (secondary)
- Housing companies (tertiary)

As concerns final users, qualitative objectives are evaluated based on good familiarity with the technological device, improvement in relationships, autonomy and home safety. Result is positive if the HOST platform is used without external help and at least one service among those proposed is considered helpful.

As concerns care givers, qualitative objectives are evaluated based on good familiarity with the technological device, and improvement in involvement in daily home care activities. Result is positive if the HOST platform is used without external help and at least one service among those proposed is considered helpful.

Finally, as concerns housing companies, qualitative objectives are evaluated based on improvement of operative standards and quality of service, and cost reduction.

5. Cost-benefit analysis

A cost-benefit analysis is hereafter proposed related with the following variables: Product, Price, Place and Promotion.

5.1. Product

As the HOST software platform is based on common Internet standards, limited costs for its industrialisation process are foreseen. Distribution process also, thanks to collaboration with associations, seems to present low costs.

5.2. Price

In the initial phase a fee will be asked, in line with the cost of other common services (fixed or mobile phone line) of about € 15 monthly, equivalent to € 180 yearly; in case of extended services a maximum fee of € 360 yearly. 5.2.1 Production costs

Production costs will mainly be due to Service Centre to be established as referral point for the whole Nation, in order to maintain appropriate filter and interfacing among the elderly, associations, cooperatives and all other subjects in the network.

Apart from Service Centre, the development and maintenance of a commercial network for sales and after-sale support of the product is to be taken into account.

The inhabitants' cooperative that manages social housing on a local level, will be the focal point for all of the addresses actors for HOST and will be responsible for establishment of contracts with local suppliers, to evaluate the quality of their services and to validate them within the system.

All costs are indicated in the tables below (in Italian):

Commercial costs along five years for project completion

Descrizione	*IVA*	1° Anno Totale	2° Anno Totale	3° Anno Totale	4° Anno Totale	5° Anno Totale
Provigioni su vendite	20%	€ 61.560	€ 124.200	€ 186.300	€ 245.700	€ 294.300
Provigioni per installazione e manutenzione	20%	€ 61.560	€ 124.200	€ 186.300	€ 245.700	€ 294.300
Pubblicità e sponsorizzazioni	20%	€ 50.000	€ 40.000	€ 30.000	€ 30.000	€ 30.000
Spese postali	20%	€ 10.000	€ 10.000	€ 5.000	€ 5.000	€ 5.000
Rimborsi spese	20%	€ 25.000	€ 20.000	€ 20.000	€ 20.000	€ 20.000
TOTALE		€ 208.120	€ 318.400	€ 427.600	€ 546.400	€ 643.600

Table 2. Commercial costs

Provvigioni su vendite are the costs related to commissions on sales, while *Provvigioni per installazione e manutenzione* refer to commissions for installation and maintenance. *Pubblicità e sponsorizzazioni* are the expected costs for publicity and sponsorships. *Spese postali* are postal costs, and *Rimborsi spese* are costs related to expense refund to sales people.

General and administrative costs

Descrizione	IVA	1° Anno Totale	2° Anno Totale	3° Anno Totale	4° Anno Totale	5° Anno Totale
Assicurazione	20%	€ 1.500	€ 1.500	€ 1.500	€ 1.500	€ 1.500
Assistenza tecnica	20%	€ 10.000	€ 10.000	€ 10.000	€ 10.000	€ 10.000
Linea Internet ad alta velocità	20%	€ 8.000	€ 8.000	€ 8.000	€ 8.000	€ 8.000
Affitto locali	20%	€ 20.000	€ 20.000	€ 20.000	€ 20.000	€ 20.000
Cartoleria, cancelleria e stampati	20%	€ 2.000	€ 2.000	€ 2.000	€ 2.000	€ 2.000
Consulenze legali, amministrative e gestionali	20%	€ 8.000	€ 8.000	€ 8.000	€ 8.000	€ 8.000
Energia per illuminazione	20%	€ 3.000	€ 3.000	€ 3.000	€ 3.000	€ 3.000
Gas per riscaldamento	20%	€ 3.000	€ 3.000	€ 3.000	€ 3.000	€ 3.000
Manutenzione e ristrutturazioni ordinarie	20%	€ 5.000	€ 5.000	€ 5.000	€ 5.000	€ 5.000
Pulizia locali	20%	€ 2.000	€ 2.000	€ 2.000	€ 2.000	€ 2.000
Tasse locali	20%	€ 7.000	€ 7.000	€ 7.000	€ 7.000	€ 7.000
Telefono	20%	€ 10.000	€ 10.000	€ 10.000	€ 10.000	€ 10.000
Vigilanza e sicurezza	20%	€ 5.000	€ 5.000	€ 5.000	€ 5.000	€ 5.000
TOTALE		€ 84.500	€ 84.500	€ 84.500	€ 84.500	€ 84.500

Table 3. General and administrative costs

Assicurazione are insurance costs for damage related to offices and employees' work. *Assistenza tecnica* refers to costs for technical assistance to servers and equipment. *Linea Internet ad alta velocità* comprises the costs for a high-speed Internet connection for the HOST central infrastructure to be accessible. *Affitto locali* includes the costs for renting offices destined to workers and infrastructures. *Cartoleria, cancelleria e stampati* are costs for stationery and printed materials. *Consulenze legali, amministrative e gestionali* refer to costs for consultancy in legal, administrative and management matters. *Energia per illuminazione* are costs for electricity. *Gas per riscaldamento* are heating costs. *Manutenzione e ristrutturazioni ordinarie* are costs related to ordinary maintenance of offices. *Pulizia locali* are costs for cleaning. *Tasse locali* are local taxes. *Telefono* comprises costs for telephone lines. Finally, *Vigilanza e sicurezza* are expected costs for security and surveillance.

Other costs

Descrizione	IVA	1° Anno Totale	2° Anno Totale	3° Anno Totale	4° Anno Totale	5° Anno Totale
Leasing altra attrezzatura	20%	€ 8.000	€ 8.000	€ 8.000	€ 8.000	€ 8.000
Lungo noleggio automezzi	20%	€ 25.000	€ 25.000	€ 25.000	€ 25.000	€ 25.000
Leasing macchinari	20%	€ -	€ -	€ -	€ -	€ -
Manutenzione attrezzature	20%	€ 5.000	€ 5.000	€ 5.000	€ 5.000	€ 5.000
Carburante per automezzi	20%	€ 7.000	€ 7.000	€ 7.000	€ 7.000	€ 7.000
Manutenzione macchinari	20%	€ -	€ -	€ -	€ -	€ -
Spese varie	20%	€ 8.000	€ 8.000	€ 8.000	€ 8.000	€ 8.000
TOTALE		€ 53.000	€ 53.000	€ 53.000	€ 53.000	€ 53.000

Table 4. Other costs

Leasing altra attrezzatura refers to costs for leasing of cloud servers and other devices needed for the HOST system. *Lungo noleggio automezzi* are leasing costs for cars destined to sales force. *Leasing macchinari* are costs for machinery leasing (zero, however). *Manutenzione attrezzature* are costs related to maintenance contracts of devices. *Carburante per automezzi* refers to fuel costs of leased cars. *Manutenzione*

macchinari are costs for machinery maintenance (zero, however). *Spese varie* refers to all other costs not comprised in the categories stated so far.

Personnel costs

	Unità	1° Anno Totale	2° Anno Totale	3° Anno Totale	4° Anno Totale	5° Anno Totale
Personale amministrativo - segreteria	1	€ 26.600	€ 26.600	€ 26.600	€ 26.600	€ 26.600
Personale tecnico	3	€ 79.800	€ 79.800	€ 79.800	€ 79.800	€ 79.800
Responsabile di sede	1	€ 56.000	€ 56.000	€ 56.000	€ 56.000	€ 56.000
Amministratore di sistema e di rete	1	€ 29.400	€ 29.400	€ 29.400	€ 29.400	€ 29.400
	0	€ -	€ -	€ -	€ -	€ -
Commerciale	3	€ 75.600	€ 75.600	€ 75.600	€ 75.600	€ 75.600
TOTALE PERSONALE INTERNO		€ 267.400	€ 267.400	€ 267.400	€ 267.400	€ 267.400
Consulente esperto tecnologo sistema		€ 45.000	€ 45.000	€ 45.000	€ 45.000	€ 45.000
TOTALE CONSULENTI		€ 45.000	€ 45.000	€ 45.000	€ 45.000	€ 45.000
TOTALE		€ 312.400	€ 312.400	€ 312.400	€ 312.400	€ 312.400

Table 5. Personnel costs

Personale amministrativo - segreteria refers to costs for administrative personnel. *Personale tecnico* are costs for technical personnel. *Responsabile di sede* is the cost for the office manager hired to coordinate all personnel assigned to the HOST system and services. *Amministratore di sistema e di rete* is the cost for the system and network administrator. *Commerciale* are costs for sales people. Finally, *Consulente esperto tecnologo sistema* are costs for consultancy in system and technology management.

5.3. Place

HOST product would be delivered to tertiary end-users by the Italian associations led by Finabita and Legacoop Abitanti, that have an extremely large coverage of the country's territory and they would distribute the service between their clients (primary and secondary end-users).

5.4. Promotion

Finabita and Legacoop Abitanti are expected to leverage their nationwide coverage of social housing operators and, through Finabita's subcontractor Abitare e Anziani (AeA), to promote advertising about the HOST product and services, in order to highlight their convenience and opportunities along with their associated low costs.

6. Control of the plan

Every six months a meeting will be held among Italian partners to assess outcomes of the marketing plan and set out actions required to achieve the expected marketing objectives.

As the plan contains measurable goals, a tracking path will be developed to assess business progress regularly. Revenues will be tracked to monitor and control the process. Research on market and competition as well as revenue projections will be conducted and discussed in the meetings and appropriate actions will be taken in order to adapt the marketing plan to the current situation.

It is expected that the Italian partners gain experience running the HOST business, and so marketing techniques can be refined. In the meetings, business and marketing plans wil be reviewed simultaneously. Goals and measurements of each plan will be

monitored and decisions made to adapt the model of intervention. The plans will not be considered as unchangeable documents, but they will be changed and updated following business changes and growth. The plans will be revised as to foresee evolutions in one, three and five-year increments, basing future projections on past performance (see Figure 3).

Figure 3. Process to control the Marketing Plan

Consumer feedback will be collected and analysed during the meetings too. After sale interviews will be regularly taken with customers, and positive or negative responses by customers will offer the best elements to assess whether the plan are succeeding or failing. Negative feedback can indicate whether the business model and marketing plans should be changed, while positive feedback, on the other hand, can indicate new ways of improving business by allocating more resources, or renew efforts in proposing new services. Competitor analyses will also be taken regularly that give the condition of the market segment and provide elements of further evaluation and possible adaptation of the marketing plan.

Exploitation Strategy in United Kingdom

WP4

October, 2013

Triple Play

OPAC du Rhône – ODR (FR) • FINABITA – FIN (IT) • Nottingham Community Housing - NCH (UK) • ADAMA – ADA (FR) • National Research Council Construction Technologies Institute – CNR-ITC (IT) • Conseil Général du Rhône/ERASME – ERA (FR) • Grenoble University – GRU (FR) • Triple Play – TRI (UK) • BIO RESULT – BioR (IT) • Polibienestar Research Institute from University of Valencia – UVEG (SP)

Funded by Ambient Assisted Living Program
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On October 2013 English partners need more time to achieve their Exploitation Strategy. The main reasons that justify this delay are the following:

- *They have been focused on adding the Skype integration into the platform which they have been deployed in October.*
- *And, they are also unclear on the exploitation strategy as with the changing market dynamics and technology landscape it is going to be difficult to ascertain the right strategy going forward.*

So, at the moment there is not any version of the documents scheduled.