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	Title: **Exploitation Strategy and Plan**	

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Abstract:

This document presents an analysis of the situation of the potential exploitability of the Co-Living products and services, with a focus on customers which should be targeted by consortium partners. The objective of this document is to provide an exploitation framework to investors and interested parties for the commercial exploitation of the Co-Living products and services. In order to achieve this objective, the Co-Living exploitation strategy and plan addresses the following questions:

- What is the Co-Living target group and what are some of its characteristics (demographics, technology preferences)?

- What are the Co-Living products and services and their overall value proposal?

- What is the strategy and plan for the exploitation of the Co-Living products and services?

To answer these questions, this deliverable presents a description of the "young old", elders who are over 63 and under 75 years old, and which represent the target group of the Co-Living project. An analysis based on demographic data and technology preferences is developed to better understand the potential market size and the characteristics of this target group. A description of the Co-Living exploitable results (SoCo-Net, Potential third-party plug-in services, Applied knowledge on the targeted user group), as well as of their overall value proposition, is also provided in this deliverable. Finally a first outline of the strategy for the exploitation of the Co-Living results by the consortium partners is proposed. This section presents the intentions of each partner with regard to the use of the Co-Living results (individual exploitation plans), as well as an outline of a potential common exploitation strategy. A plan for the exploitation of the Co-Living results with the most important steps is also presented in this section.

Key words: Exploitation; Results; Elderly, Ageing; Strategy; Plan

Document History

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September 05, 2011	0.9	First complete version for review
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1 Introduction

1.1 Summary

The world is experiencing an important demographic transformation: the unprecedented ageing of the population of almost all developed and developing countries. A moderate projection of ageing in the EU for the period between 2004 and 2050 shows that the population aged 65+ will increase by 58 million or 77% and that, at the same time, the working-age population will drop by 48 million or 16%. In the EU, this might mean that the ratio of people of working age would be two for every older citizen, instead of four working people at the present time.

These demographic challenges are discussed as a serious problem for social support systems. They are seen fairly negatively, implying a cost explosion, which is one way to discuss this topic. The other way is to discuss the opportunities offered by ageing societies like, for instance, new markets for innovative applications and products/services for older people.

With these opportunities in mind, the Co-Living project aims at developing an *ICT-based Virtual Collaborative Social Living Community for Elderly*. The central aim of this project is to stimulate and prolong their independent and active living in an outward environment through an advancement in elderly people social interaction, contributing thus positively to their wellbeing.

This document presents an analysis of the situation of the potential exploitability of the Co-Living products and services, with a focus on customers which should be targeted by consortium partners.

The objective of this document is to provide an exploitation framework to investors and interested parties for the commercial exploitation of the Co-Living products and services, In order to achieve this objective, the Co-Living exploitation and strategy plan addresses the following questions:

- Which is the Co-Living target group and what are some of its characteristics (demographics, technology preferences)?

- What are the Co-Living products and services and their value proposal?

- What is the strategy and plan for the exploitation of the Co-Living products and services?

To answer these questions, this deliverable presents a description of the "young old", elders who are over 63 and under 75 years old, and which represent the target group of the Co-Living project. An analysis based on demographic data and technology preferences is developed to better understand the potential market size and the characteristics of this target group.

A description of the Co-Living exploitable results (SoCo-Net, Potential third-party plug-in services, Applied knowledge on the targeted user group), as well as of their overall value proposition, is also provided in this deliverable.

Finally a first outline of the strategy for the exploitation of the Co-Living results by the consortium partners is proposed. This section presents the intentions of each partner with regard to the use of the Co-Living results, as well as an outline of a potential common exploitation strategy. A plan for the exploitation of the Co-Living results with the most important steps is also presented in this section.

1.2 Role of this deliverable

The role of this document is to present an analysis of the situation of the potential exploitability of the Co-Living products and services, with a focus on customers which should be targeted by consortium partners. The objective of this document is to provide an exploitation framework to investors and interested parties for the commercial exploitation of the Co-Living products and services.

1.3 Relationships with other deliverables and work packages

Deliverable D7.3 "Exploitation Strategy and Plan" is one of the main deliverables of WP7 "Dissemination, Exploitation and Standardization". The work performed within Work Packages WP3 "Social Community Network (SoCo-net) Development", and WP4 "ICT-based Services Development" is obviously essential as the results to be exploited will be developed in these Work Packages.

The Exploitation Strategy and Plan is intrinsically linked to Deliverable D7.4 "Business Strategy", which will be developed in latter stages of the project, namely on Month 24 and updated in Month 36, as the business strategy will largely be influenced by the choices made by the partners – and the agreements reached between them - to exploit the results of the project.

In Deliverable D7.6 "IPR Directory", the Intellectual Property rights owned by the consortium partners as well as the IPR developed within the Co-Living project are identified, and therefore provides a clear definition of the Co-Living exploitable results, as well as their respective ownership.

1.4 Structure of this document

The following items are identified and explained in this document:

- An analysis of the Co-Living target group in order to identify the potential market it represents, as well as its characteristics regarding the use of ICT.

- A description of the proposed Co-Living services including the SoCo-net and the ICT-based services. Section 2 presents these services together with the value proposition associated to them.

- The Co-Living exploitation strategy and plan. This section presents the individual exploitation plans proposed by each partner, as well as the common strategy for the project. Furthermore a plan explaining the important steps for the exploitation of project results is also proposed.

1.5 Contributors

Table 1: Deliverable Contributors

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2   The Target group

As we mentioned above the target group Co-Living is targeting consists in the big group of healthy elderly or with light physical or psychological health problems who are self-supporting, able to move around, and can still contribute actively. Following the WHO definition of Active Ageing (WHO, 2002), this group corresponds to the 'young olds' who are individuals over 63 and under 75 years old. This section of the document focuses on addressing the demographic data and technological needs and preferences of the target group as regard care provision so as to pave the way through a stronger exploitation potential of the project outcome.

2.1   Demographics

Looking at the population projections developed at EU level for this population category on the Eurostat database (Eurostat, 2011), it is estimated that nearly 46 million Europeans (EU 27) fitted in this age category in 2010. Projections for the following years show that this population will steadily grow until 2030, reaching 62.4 M people in 2030 (see Table 2 below).

Table 2: Population by sex and 5-year age groups (Age group 65-74)

1st January population by sex and 5-year age groups (Age group 65-74)					
	2010	2015	2020	2025	2030
European Union (EU27)	45.946.333	49.456.075	54.672.326	58.432.877	62.474.327
Belgium	919.432	1.032.219	1.196.428	1.297.688	1.409.407
Bulgaria	736.024	804.849	863.974	847.334	825.679
Czech Republic	905.014	1.150.378	1.283.121	1.230.157	1.155.552
Denmark	515.709	621.772	637.981	617.785	656.875
Germany	9.620.433	8.574.741	8.760.989	10.086.693	11.385.876
Estonia	126.297	122.556	134.366	144.711	147.787
Ireland	285.547	348.604	407.382	449.829	499.562
Greece	1.106.874	1.121.388	1.227.724	1.310.212	1.398.781
Spain	3.801.479	4.204.243	4.625.991	5.129.167	5.869.940
France	5.078.118	6.152.956	7.379.080	7.593.658	7.804.396
Italy	6.198.493	6.523.611	6.881.072	7.185.477	8.104.179
Cyprus	61.462	73.032	84.289	94.101	100.707
Latvia	223.824	206.109	210.186	234.959	252.279
Lithuania	298.446	281.861	290.974	334.361	378.686

Luxembourg	36.866	41.511	49.265	57.585	67.023
Hungary	929.500	991.414	1.107.734	1.155.214	1.029.175
Malta	35.122	44.445	51.089	50.316	49.441
Netherlands	1.394.507	1.732.803	1.942.375	1.999.771	2.162.423
Austria	805.811	855.798	850.620	960.713	1.134.562
Poland	2.749.582	3.177.414	4.206.383	4.759.639	4.438.484
Portugal	1.010.545	1.056.413	1.151.848	1.226.222	1.321.721
Romania	1.836.099	1.793.731	2.111.107	2.343.450	2.150.529
Slovenia	185.400	195.828	234.019	266.856	271.704
Slovakia	381.289	450.363	563.662	637.654	634.412
Finland	483.362	615.703	708.196	678.448	666.477
Sweden	892.331	1.080.948	1.104.977	1.057.642	1.099.805
United Kingdom	5.328.767	6.201.385	6.607.494	6.683.235	7.458.865

Source: Eurostat, 2011

2.2   Internet skills and use

In order to deliver valuable services to the targeted age group (over 63 and under 75 years old), it is important to understand their technology habits and capacities for ICT technologies.

As it is confirmed by Van Dijk (2008) , there is gap in internet skills between individuals with senior age and the rest of the population. As we can see in Table 3 below, people between the age of 65 and 74 years old clearly evidence lower levels of internet skills. Even among the target group, differences at regional level can be identified. As it is pointed out by Van Dijk (2008), a divide between Northern European countries (Denmark, Sweden, the Netherlands, etc.) and the Southern European countries (Greece, Cyprus, Portugal, etc.), but also between Western and Eastern European countries is clearly visible when looking at results from Table 3. For instance in countries such as Greece or Romania, only a minimal proportion of people aged between 65 and 74 years old (5% and 4% respectively) are able to perform a simple task such as using a search engine to find information., whilst the same task can be performed by 57% of the same age population in Sweden.

From the data available for Europe (Eurostat, 2011b), we can also see that frequent internet access – at least once a week – is not widespread among individuals falling into the 65 to 74 years old age category, with only 25% of individuals doing so.

Table 3: Individuals' level of Internet skills (2010)

Individuals' level of Internet skills (2010)		
	All individuals	Age group: 65-74
European Union (EU27)	70	30
Belgium	76	33
Bulgaria	45	4
Czech Republic	68	24
Denmark	87	56
Germany	82	43
Estonia	69	19
Ireland	60	19
Greece	46	5
Spain	65	14
France	79	37
Italy	54	12
Cyprus	54	8
Latvia	69	14
Lithuania	63	11
Luxembourg	86	60
Hungary	66	16
Malta	62	13
Netherlands	89	55
Austria	74	29
Poland	61	11
Portugal	52	11
Romania	39	4
Slovenia	69	12

Slovakia	70	19
Finland	85	43
Sweden	88	57
United Kingdom	80	43

Moreover, when looking at data available for internet connection via mobile devices using wireless connection, it can be deducted that this use remains marginal among the target group selected for Co-Living products and services, in most EU countries (see Table 4). Similarly the divide between Northern and Southern European countries, as well as Western and Eastern European countries, is clearly evident.

Table 4: Individuals using selected mobile devices to access the Internet (Age group 65-74)

Individuals using selected mobile devices to access the Internet (Age group 65-74)		
	% of individuals	% of individuals who used internet in the last 3 months
European Union (EU27)	6	21
Belgium	6	17
Bulgaria	N/A	N/A
Czech Republic	1	6
Denmark	15	26
Germany	12	28
Estonia	7	28
Ireland	6	31
Greece	0	9
Spain	2	15
France	6	15
Italy	3	29
Cyprus	0	6
Latvia	1	8
Lithuania	0	4
Luxembourg	25	39

Hungary	2	14
Malta	2	16
Netherlands	9	16
Austria	8	27
Poland	2	16
Portugal	3	26
Romania	0	0
Slovenia	2	16
Slovakia	3	15
Finland	8	18
Sweden	11	19
United Kingdom	9	19

2.3   Use of mobile phone

However, as we can see in Table 5 below, the use of mobile phone among persons in the 65 to 74 years old age group is more widespread in Europe. The average percentage in the 27 Member states was 62% in 2008, reaching percentage well above 80% in countries such as Luxembourg, Sweden or Finland.

Table 5: Use of mobile phone - Age group: 65-74 (% of individuals) 2008

Use of mobile phone - Age group: 65-74 (% of individuals) 2008	
European Union (27)	62
Belgium	64
Bulgaria	32
Czech Republic	68
Denmark	79
Germany	67
Estonia	72
Ireland	72
Greece	42

Spain	58
France	59
Italy	70
Cyprus	58
Latvia	58
Lithuania	54
Luxembourg	85
Hungary	74
Malta	53
Netherlands	75
Austria	69
Poland	31
Portugal	51
Romania	32
Slovenia	59
Slovakia	68
Finland	90
Sweden	84
United Kingdom	78

From the data presented in this section, we can conclude that the adoption of internet technology by the targeted age group is yet to become widespread in Europe. Mobile phones, despite the differences between countries evidenced in Table 5, seem to be a more widely accepted technology.

Regarding the Co-Living, this means that the level of skills and the use of internet services among the target group will very likely reduce the widespread adoption of these technologies, and therefore reduce the pool of potential customers. The solution to address a larger number of users therefore seems to adopt the use of mobile phone technologies, without recurring to the use of internet.

3 Co-Living Exploitable products and services and Value Proposition

The main goal of Co-Living is the development of an *ICT-based Virtual Collaborative Social Living Community for Elderly* to stimulate and prolong their independent and active living in an outward environment through an advancement in elderly people social interaction, contributing thus positively to their wellbeing.

The present section describes the three main project's outcomes to be exploited by the Co-Living project partners:

- An innovative elderly centric web based network, the **Social Community network** (SoCo-net) enabling effective management and collaboration of virtual social care teams around the elderly for continuous care provision

- An integrated set of interoperable **ICT based services** making use of SoCo-net and addressing the elderly social interaction context categories of Care & Wellness, Guidance and Mobility monitoring.
- **Applied knowledge** on the targeted user group acquired during the pilot development phases, but also through the specification of use case scenarios.

Furthermore, thi chapter describes the value proposition the project aims to offer to the Co-Living target group through the exploitation of the project's outcomes.

3.1 SoCo-net

The Virtual Collaborative Social Community Network, known as SoCo-net, constitutes a core component of the Co-Living solution. It is an elderly centric web based network that enables the effective management of social care teams consisting of people of different ages (young and old) and roles (relatives, friends, neighbors, care professionals, etc.) that can assist, collaborate and actively communicate with the elder improving his daily life in an ad-hoc and informal way through the use of assistive mobile wireless technologies.

By taking into consideration the innovative social practice-oriented community model developed under Task 1.2 "Analysis and design of the innovative social practice-oriented community model" in WP 1, SoCo-net builds around the aged person a virtual network consisting of people of different ages (young and old) and roles (relatives, friends, neighbors, care professionals, etc.). This elderly centric web based network enables the effective management and collaboration of virtual social care teams around the elder (see Figure 1).

Figure 1: Virtual Care Teams build around the elderly

SoCo-net is made up of three major components integrated together into a coherent module (see Figure 2):

- **The Social Community Management component**, which enables the effective administration and management of the users' profiles and social care teams around the elderly.

- **The Behavior Analysis component**, which adapts social relationships and contexts of the elderly people as they age. Historical data regarding user behavior will be used for the identification of changes in the elderly daily activities as he/she ages and trigger actions and related adaptation of the elderly provided services.

- **The Education and Feedback component**, which stimulates the elderly to retain interest in making use of the Co-Living services by the provision of remote training, through intelligent explanation interfaces.
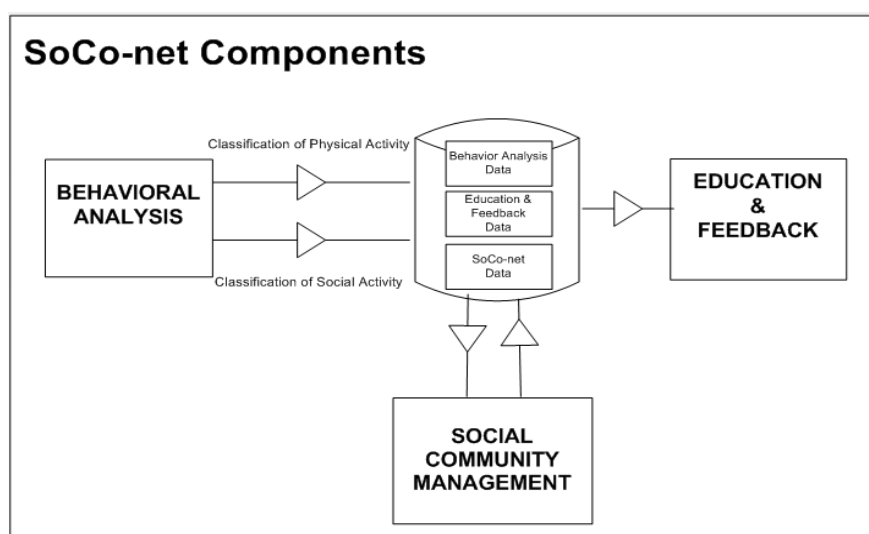
Figure 2: SoCo-net sub-components

3.2 ICT-based services

Co-Living aims at the development of different ICT-based services, which make use of the virtual social care team management and organization tool provided by SoCo-net, to stimulate the elderly to live independently and actively for longer. This in turn impacts their wellbeing in terms of positive health benefits (physical and mental health impact).

In accordance to the user needs, the Co-Living ICT-based services address the three main areas of the elderly social interaction context:

- Care & Wellness

- Guidance

- Mobility Monitoring

3.2.1 Care & Wellness

Three types of services are provided contributing to the care and wellness of the elderly:

- The **physical activity service** investigates how information on the individual's actual physical and psychological status can be optimally combined to define a challenging yet realistic physical activity schedule. Instead of adapting the physical activity schedule only based on the physical status or progress in performance, the person's psychological status is also included. For example when the person gets less motivated, the system may invite the user to select and do other exercises (targeted towards the same physical goal), or to slightly increase (or decrease) the intensity or duration of the exercises.

- The **group leisure activities service** uses SoCo-net to create groups to share activities with the elderly, by taking into consideration the members' preferences and capabilities. The elderly creates an invitation for a specific activity and shares it with the members of his/her Social Community Network.

- The **competence/knowledge/skills exchange service** allows the elderly to register his/her expertise in the system and other members of the Social Community Network can make requests for support.

3.2.2 Guidance

The main objective of this category is to make use of SoCo-net to develop a series of guidance services assisting the elderly in their daily tasks.

- **Daily tasks** assistance provide to the elderly direction indications, explanations on how to perform different tasks, or even instructions on how to call for human assistance by making use of SoCo-net.

- **Cognitive failure** assistance provides memory help reminders i.e., accessories such as stick, eye-glasses, medication, planned activities or appointments, directions indications to a place, etc. The services are designed not to offer a blind guide, providing all the instructions, but rather to offer assistance with increasing levels of social elderly care provision.

3.2.3 Mobility Monitoring

The main objective of this category is the development of monitoring services for the early detection of limitations in mobility and physical fitness and elderly daily activity follow up based on predefined plans.

- Services for the **early detection of limitations** are based both on wireless sensors providing real time monitoring of mobility and activity of the elderly, like GPS and accelerometer sen-

sors and on physical status information entered through developed questionnaires. All information is analyzed and services are developed as regards to the provision of care to the elderly by providing direct feedback to him or by informing his care givers. Additionally localization based monitoring services not only identify the position of the user in real time, but also obtain and correlate information regarding the surrounding environment of the user.

- Services for **Daily activity follow up** enable the elderly to set up his daily schedule with various activities. The time, place and group members that may be involved in each activity are defined. The daily timetable is transmitted to the group member that is responsible for the follow up of the activities. At any time during the day the group member may contact the elderly and enquire variations in the schedule (i.e., delay or absence from a meeting).

Together with the three basic packages of elderly social interaction context: Care & Wellness, Guidance and Mobility Monitoring defined above, seven top-level packages are identified in the Co-Living environment as illustrated in Figure 3:

- **Care & Wellness Services:** The main objective of the Care & Wellness package is to develop a series of services contributing to the care and wellness of the elderly. These are related to physical activity, leisure activities, and competence/knowledge/skills exchange.

- **Communication Services:** The communication services package has services that support communication of different types. The package is available for use by other services or applications.

- **Guidance Services:** The main objective of Guidance package is to develop a series of assistive services supporting daily tasks and activities. The services provide direction indications and explanations on how to perform different physical tasks, instructions on how to call for help, etc.

- **Mobility Monitoring Services:** The Mobility Monitoring module allows real time tracing and detection of a user's location. The services can be invoked by specific applications or run in the background to collect information useful for the early detection of limitations in mobility of the elderly. Special services are also implemented that do not rely on sensory information, but specify the location based on inputs provided to the system by the various users.

- **Security & Privacy Services:** The Security & Privacy Services are implemented as a feature which provides security in all system layers. The package contains services that provide the well-known security mechanisms addressing the legal, ethical, privacy and security requirements for the Co-Living system.

- **Sensor Services:** The Sensor Services package contains services enabling the integration and management of different wireless sensors and devices which are associated with identified parameters for tracking activity and wellness. Such services provide information coming from a sensor or a device and are in charge of making all tasks needed to carry out a communication with any sensor or device in the system environment.

- **Scheduler Services:** The Scheduler module includes a set of supportive services that work at the back to enable the management of a personal agenda. Major operations include task planning, adding, querying, setting reminders and viewing calendar information.
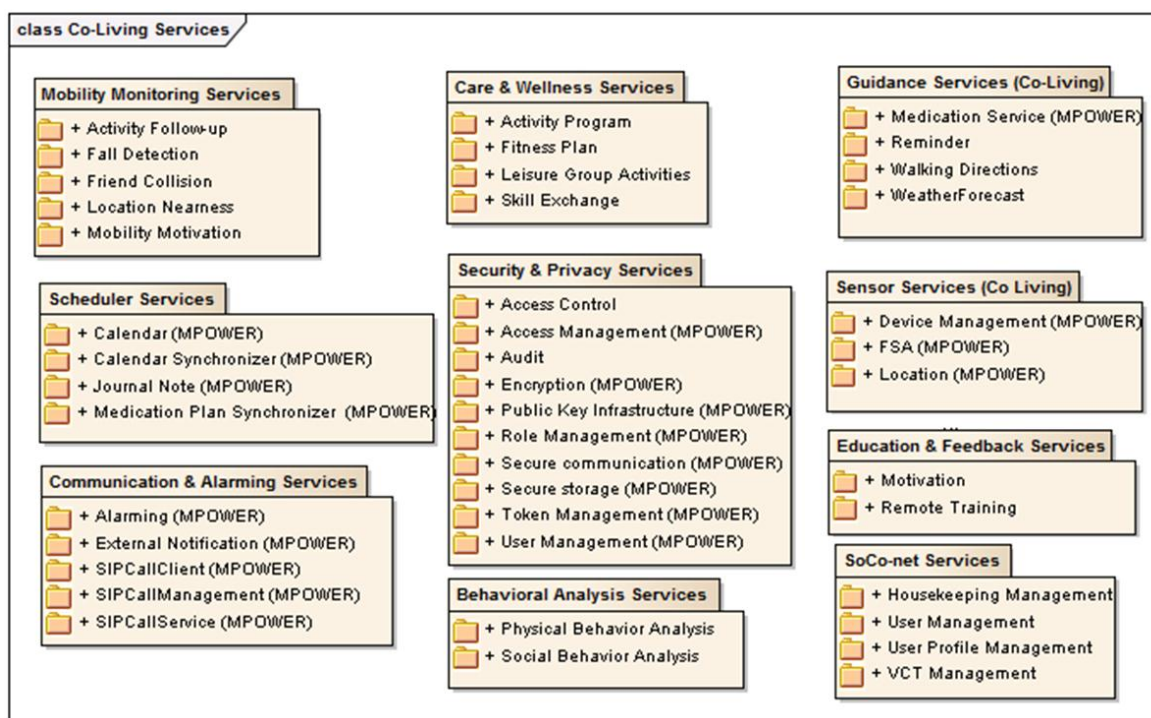
Figure 3: The Co-Living ICT-based services

A more thorough description of the ICT-based services to be developed within the Co-Living project is available in Deliverable D2.3 Design of ICT-based services.

3.3   Applied knowledge on the targeted user group

As we mentioned above the target group Co-Living is targeting consists in the big group of healthy elderly or with light physical or psychological health problems who are self-supporting, able to move around, and can still contribute actively.

In order to successfully address this target group, several tasks of the project are specifically aimed at increasing the consortium's knowledge on this group. For example, Task 1.1 "User socialization needs analysis and specification'' aims at studying the users' socialization needs and defining requirements that contribute to the improvement of their wellbeing. Similarly Task 1.3 "Use case scenarios development" targets to model the end user behaviour and expectations in order to define the different ICT-based services which will be offered within the project. This task is mainly done through focus groups and interviews.

Clearly the knowledge on the user group targeted by Co-Living to be used in the definition of the project products and services can be viewed as another exploitable project result. Indeed, it is not far-fetched to believe that this knowledge could be applied in other areas besides the Co-Living project. In fact, as we will see in section 4 regarding the Exploitation Strategy and Plan, several project partners intend to integrate the knowledge on the user group into their research activities or product lines.

Furthermore, this applied knowledge can be viewed as a commercially exploitable project result. Parties outside of the consortium would be approached with in order to raise their interest in making use and/or integrate such knowledge in their elderly care related products and services development activities. Considering that some of the Co-Living partners have experience in providing consulting services, the commercialization of such services based on the knowledge on the user group acquired during the project can be regarded as an exploitation possibility.

3.4 Value proposition

Co-Living main goal is the development of an ICT-based Virtual Collaborative Social Living Community for Elderly people, aiming to stimulate and prolong their independent and active living in an outward environment through an advancement in elderly people social interaction, contributing thus positively to their wellbeing.

It is foreseeing that upon its release, the Co-Living solution will be in competition with other products and services in the addressed domain. The objective of this section is to present what, according to the project partners, is the main value proposal of Co-Living and its strongest features. In order to capture the opinion of the project partners considering their founded experience in the elderly care field, a questionnaire (available in Annex 1) was elaborated and the answers provided form the base of this section.

According to the partners, one of the main value proposals Co-Living offers is its applied research into new practice-oriented socialization and care service provision concepts and models, such as SoCo-net, which have the potential to offer a differentiating feature or to remove an adoption barrier to AAL services. This applied research relies on the extensive knowledge of care organisations (public and private) to be acquired throughout the project.

The interoperability, modularity, flexibility and standardization of the Co-Living solution which easily facilitates the integration with different technologies, is also viewed as its main strength. The entire Co-Living software is designed to be a very flexible solution, with the interfaces compatible with various state of the art devices (i.e. smart device, tablet, etc.) with minimal hardware requirements. Its openness – acting as an interoperable ecosystem - offers the possibility to gradually integrate new customised services developed internally or by third parties, with a view to adjust to the specific needs of each individual end user, thus improving the elderly daily life in an ad-hoc and informal way. Moreover further value is created in optimizations such as verified simple and effective user interfaces, privacy, etc.

Moreover, the Co-Living products and services focus not only on technological research innovation but also gives great attention on the user's acceptance. This is achieved by developing and integrating in the Co-Living product a web based social community network (SoCo-net) which supports active communication, assistance and collaboration between the elderly and his/her social environment.

4   Co-Living exploitation Strategy and Plan

In this section of the document, we present the strategy which will be adopted by the Co-Living partners for the exploitation of the project results. For that, we will first detail the partners' individual exploitation plans in order to understand their intention regarding the project results. Based on these individual exploitation plans, but also on the target group characteristics as well as the Co-Living products and services information, a common strategy for the exploitation of the Co-Living exploitable results and a plan to carry out this exploitation will be defined.

4.1   Partners' individual exploitation plans

4.1.1   ORBIS

ORBIS intends to expand the current range of services provided in their Elderly Living Village to include the Co-Living ICT based services in order to provide elderly care at regional or district level. Pending the successful operation of the Co-Living technology and services in the pilot, ORBIS will adopt and use the project results in the new sites that are under planning and development in Netherlands. They plan to make the Co-Living outcome to the standard model for all their sites and also promote the project and its results to the stakeholders and policy makers, organizing on-site visits, open days and press conferences, as well as presenting the project and the concept in different international exhibitions and events. Furthermore ORBIS will employ its experience on patient ethics and social model, to continuously refine the final results of the project and contribute to their wide exploitation in the Netherlands and in Europe.

4.1.2   Philips

The exploitation interest of Philips in the project results is two-fold. First, with a view to use project results to develop and further enhance Philips products and services in the area of ambient assisted living for Philips' Healthcare and Lifestyle sectors. Second, the establishment of a platform, architecture and standards in this domain will considerably stimulate the AAL market, which is attractive for Philips as it stimulates adoption and decreases costs of components and services. For the first aspect it will, during and after finalization of the project, evaluate the tangible results from the project for use in products and services. For the second aspect it will evaluate results for the project for inclusion in standardization activities. Finally, results may be input to further research to bring them closer to market adoption.

4.1.3   UCY

UCY as an academic and research institution, is interested firstly in enabling both the staff and the students involved in the project to improve their knowledge on the specific issues studied in this project and continue the specific research even after the project ends. UCY having a long term expertise in carrying out research and development in the area of collaborative environments in the eHealth and the eInclusion sectors is seen Co-Living as an excellent opportunity which will lead to new research directions especially through the development of socialization services. Such services fit well and will be integrated with other related research outcome the UCY has already managed to bring in the market, like the DITIS (Virtual Collaborative Working Environment), through the creation of a spinoff company in 2005. Co-Living will also help UCY to consolidate and extend its links with industry giving opportunities for further valorisation of results.

UCY has experience in working together with the Cyprus IT sector in promoting research outcomes to the healthcare sector (public and private). It has also experience in the establishment of spin off companies under the University of Cyprus in undertaking the exploitation of research outcomes. The UCY is interested in the creation of similar channels for the promotion of the Co-Living outcome. The UCY will play the role of further developing the Co-Living outcome, but also as a consultant to both the IT

industry and healthcare service providers regarding the Co-Living concept, processes, technologies and overall solution. UCY future actions include also a further research through national and international programme.

- **National Research funding programme:** The current National Research programme 2008-2013 gives emphasis on research and development of innovative ageing but also eInclusion related technologies. The UCY will apply together with the Cyprus IT industry and Health care providers for funding to be used for further researching and developing of the Co-Living results. UCY has been very successful in achieving national funding in previous programmes but also in the 2008 programme in the areas of eHealth and also ageing technologies.

- **International research programs:** The UCY as a research organization will also apply for funding in EC programmes like IST calls related to eHealth, eInclusion, CIP PSP, Ambient Assistant Living. The goal is to continue research and further development of the Co-Living main results to be in line with state of the art technological developments promoting a wider European dimension.

4.1.4 SINTEF

Sintef intends to fully exploit all results coming from the Co-Living project development. As a research institution it will primarily focus on continued research and use the knowledge gained to be a resource to the care and ageing IT industry in Norway, Europe and abroad. Sintef has established the limited company SINTEF Holding to manage its ownership of start-up companies and regional development companies. The aim is to professionalise the operation of such companies and to split off taxable activities from core activities of our research institutes. Sintef regards it as an important aspect of its role to contribute to the creation of more companies and jobs. In Co-Living, SMEs in the project will directly apply the results in the business plans, but if Sintef see an opening not covered by the other SMEs in the project, Sintef can and will act on this opportunity.

4.1.5 IPN

IPN's business mission is to leverage a strong university/enterprise relationship for the promotion of innovation, rigor, quality and entrepreneurship in private and public sector organizations. The Institute acts in three complementary areas: research and technological development, consultancy and specialized services; business and ideas incubation; highly specialized training and promotion of science and technology.

An important goal of IPN's exploitation activities is the transfer of knowledge, technology and value to business groups from our current client portfolio (stakeholders, organizations, private institutions, public governance, etc.). Thus, in the scope of Co-Living IPN will use their experience in technology transfer processes to design an individual commercialization strategy plan with the objective to identify the most promising outputs of the project and materialize them in products and services. In collaboration with the consortium, these can be promoted in new markets.

Exploitation activities of IPN will start at the very beginning of the project and will go on all through its duration. The main objectives pursued are the following:

- The dissemination and publication of the results achieved in the project.

- To develop and release "prototype" products and services based on the project outcomes. These can be promoted by the consortium to interested ICT companies or SMEs.

- Transfer the gained experience and know how to support companies and other organizations to develop new software applications, products etc.

- To improve the experience and knowledge of the Institute's members.

- To maintain and develop new links with academia, industry and business partners.

- To explore the possibility of launching new initiatives for the development of new projects and proposals for R&D projects.

Regarding dissemination of commercial potentials, in terms of "products", "prototypes" or "services", IPN plans to design, based on existing experience from dissemination activities, an exploitation plan for commercialization of selected project results.

After the finalization of the development activities IPN will design the appropriate business model to successfully generate revenue and profit from selling the knowledge and selected products or services of the project. Potentially interested third parties include: Private or public care organizations, Public sector service organizers, Telecommunications operators etc.

Based on the type and value of the product offered to customers several business schemes are possible. For example, traditional licensing fees can be employed and tailored to work in a wide variety of ways; Co-Living software products can be licensed per-user or for an entire organization offering different pricing schemes. Another possible business model is the "Support Sellers" scheme [1]. Profit is generated in this model by selling two broad categories of items: physical goods, and/or services, e.g., technical support, training, consulting, custom development etc.

Independently of the chosen business model, the major activities for commercialization of the project outcomes include:

- Develop software prototypes: In order to promote and facilitate take-up of the project's results it is possible to develop prototypes of selected services to be offered for free (excluding communication costs) or at a low cost, in the form of downloadable software for smart phones.

- Documentation: Make available support manuals for the final end users, as well as for technical installers. Also the business model should be documented and explained, clearly pointing out the advantages for all potential partners.

- Software Customization: The Co-Living software is designed to be a very flexible solution that can be adjusted to the specific needs of the end user. Not only can the software be optimized regarding the final user's profile, but also the very platform and the infrastructure it runs on can be adapted to the means and resources available in the environment.

- Technology Transfer: Selling the knowledge acquired to potentially interested third parties is another exploitation option for IPN. The Institute can use the expertise acquired for services provision, to support companies and other organizations to develop new software applications, products, processes, systems deployment and services in the domain of Ambient Assistive Living and other similar areas. Special training sessions or workshops can be set up and managed by IPN.

- Paid consultancy: Several consultancy services can be provided by IPN and the members of the Co-Living consortium. Examples include upgrading and specialized maintenance of the existing software, technical assistance for implementing new systems that require the use of the mPower platform for test beds, etc.

4.1.6   INOVA+

INOVA+ has an internal department which develops healthcare and assisted living ICT applications, and that will actively pursue the exploitation of the results in Portugal. For such, it will exploit its networking contacts with other companies, associations and national institutions that have been developed under HCP – Health Cluster Portugal, a national competence centre to which INOVA+ belongs. Furthermore, INOVA+ will exploit its links with companies and institutions in Spain for a possible exploitation also under that market.

4.1.7   Andago

Although Andago operates in multiple markets, one of the major markets of Andago is within the healthcare sector: from hospitals to health services and insurances. Andago develops, adapts and customize innovative open-source solutions for these agents that help them modernize and be at the head of ICT adoption when dealing with their respective citizens/patients. Through its active R&D policy, Andago improves ongoing solutions and develops new ones. One of the new product lines at Andago is centred on the development of tools that improve quality of life of elderly and facilitate their interaction with others thus keeping socially active as long as possible. Co-Living will definitely contribute to advance this, and obtain precompetitive products to be integrated in the future in Andago's portfolio of solutions for the healthcare sector.

4.1.8   Citard Services Ltd

Citard has its main focus in the implementation of advanced technologies and services in the Ambient Assisted Living area and specifically in the elderly care service provision. It is also specializing in the implementation and take up of ICT based personalized solutions, the analysis and specification of End Users' requirements, including ethical and privacy considerations, the design, implementation and operation of on-site ICT based pilot projects, the on-site validation and assessment of innovative ICT based solutions in the Health and Social Care sectors and the design and development of personalized and adaptive End Users' interfaces considering context awareness. Thus, Citard sees Co-Living as an excellent opportunity to improve the knowledge and the experience of its staff in the area of elderly care provision.

Moreover, Citard's interest in the project is enhancement of competence in the technical areas covered in the project, opening up more business opportunities on Cyprus market; and the opportunity to use project results to enhance and integrate already existing products and services for elderly people, especially in the area of the development of Virtual Social Community networks for elderly care. Citard has been already working in close collaboration with different care organizations in Cyprus, including the Lito Polyclinic and Pasykaf (both providing homecare for elderly) and the Cyprus Multifunctional Centre of elderly people, in the provision of consultancy and development of mobile wireless solutions. It is also aware of the Structural Funds initiative of the Cyprus Social Services Department, in applying IT solutions for elderly care in Cyprus and see Co-Living as an opportunity in achieving collaboration with the department. Together with the Cyprus Multifunctional Centre for elderly has developed different business models as regard the promotion of mobile wireless solutions in the area of active and independent life and some of them have been already applied in the organization process. Independently of the chosen business model, the major activities for commercialization of the project outcomes include:

- Develop and enhance ICT based Care & Wellness services: In order to promote and facilitate take-up of the project's results it is possible to develop prototypes of selected services and/or enhance existing products and promote them toalready existing customers, both public and private, making use of smart phone solutions.

- SoCo-net Customization: The Co-Living software and specifically SoCo-net is designed to be a flexible solution that can be adjusted to the specific socialization and care needs of the end user.

- Consultancy: Several consultancy services can be provided by Citard and the members of the Co-Living consortium. Examples include elderly user requirements and needs specification, socialization networks, ICT based care & Wellness services, etc.

4.1.9   Trondheim Municipality

In 2004 the municipality established the Information Service Centre for Seniors aiming to "enable seniors to improve/maintain their functionality level (social and physical) so that they can live an inde-

pendent life as long as possible". The target group is young seniors, defined to be 60 +. They intend to exploit and take up the Co-Living outcome in the centre.

4.2   Co-Living overall Strategy and Plan

Three main results will be exploited by the Co-Living partners. These are:

- SoCo-Net

- ICT-based services

- Applied knowledge on the targeted user group

4.2.1   Strategy

From the individual exploitation plans described above, we can see that all the Co-Living partners intend to exploit the results developed within the project. Four main strategies seem to be preferred by the partners:

- Integration of Co-Living results for own product and services enhancement. This strategy will be adopted by Philips, IPN, Andago and Citard.

- Use of the results for direct use in their activities. The following Co-Living partners intend to use the products and services developed within the project as such: Orbis and Trondheim Kommune.

- Improvement of knowledge on the AAL subject for further research. This strategy will be adopted by Philips, UCY, Sintef and IPN, who will look to capitalize on the knowledge acquired during the project activities by developing further research on the subject of AAL.

- Development of further ICT-based services. The following partners intend to use the products and services developed within Co-Living to develop additional ICT-based services which will be integrated to SoCo-Net: UCY, Citard, IPN, INOVA+

As it is described in the project consortium agreement, the intellectual property rights of the foreground developed within the project belong to the partners which took part in its development. Therefore, before the start of the exploitation of the results, it is important to clarify which partner owns right over which exploitable result. This clarification will be made by regularly updating Deliverable D7.6 IPR Directory with further developments performed during the life of Co-Living and indicating and by which partner(s).

4.2.2   Common Exploitation strategy

In order to assess the interest of the Co-Living partners in a joint exploitation strategy, a questionnaire (see Annex 1) designed to assess the interest in joint exploitation of results, eventual IPR concerns, interest in a joint venture, for which products, and in which markets.

From the answers provided, we can see that all partners besides Trondheim Kommune and Philips showed an interest in a common exploitation strategy. The reason why Trondheim Kommune as a partner would not be interested in a common exploitation strategy is mainly due its nature. The Kommune entity (Infosenter for Seniorer) which is the part of the Co-Living consortium cannot take decisions before consulting the municipality council, which would have to assess whether the technology is targeted and functional. In any case, the Trondheim Municipality would act as an end user, not involved in the commercialisation of the Co-Living solution. Philips explains their disinterest in a common commercial exploitation strategy of the Co-Living solution by pointing out that it mainly foresees integration of innovations developed within the Co-Living project for the enhancement of its product line, which does not align well with a common exploitation.

When asked if some IPR issues would arise should a common exploitation strategy be implemented, most partners responded negatively. However three partners (SINTEF, UCY and Andago) stated that when a technology already developed by one partner, or whose rights belonged to one partner (i.e. mPower platform or SoCo-Net), the intellectual property rights, as well as the rights to use the technology by other partners, should be clearly clarified before the beginning of the exploitation.

One of the questions in the questionnaire tried to evaluate if the partners would be interested in commonly exploiting the Co-Living results through a joint venture. All partners, besides Philips and Trondheim Kommune for reasons explained above, said they would. There was not a consensus on which Co-Living products/services should be exploited within this joint venture. Some believe all the Co-Living products and services should be exploited as a whole, while other would prefer to only exploit the services. There is however a consensus that after one year, it is too early to safely answer this question, which will be better addressed in Deliverable 7.4 Business Strategy, due on Month 24 (version1) and month 36 (version 2).

Finally when asked which markets should be covered by the joint exploitation, most agreed that at least the European market should be targeted, with an emphasis on their respective local or regional markets (Citard, IPN, UCY, SINTEF, among others), but that North America should also be targeted (Orbis). Indeed, products and services for elderly such as those in the AAL category are typically easier to deploy first in the US market because 1) it is the largest homogeneous market in the world, and 2) market access is easier because out of pocket health expenses are more common while in Europe there is a dependency on complex reimbursement model.

4.2.3   Plan

The Co-Living project will last for 36 months, and as of October 2011 (Month 12), no exploitable results have so far been developed. However relevant steps were made with the design of both SoCo-Net and the ICT based services. More information on both steps is available in Deliverable D2.2 Design of SoCo-net and ICT based services and security and privacy infrastructure and D2.3 Design of ICT based services.

The following upcoming tasks will however prove to be of extreme importance for the exploitation of Co-Living results:

- Task 3.1 "Development and Testing of SoCo-Net". SoCo-Net is one of the two main exploitation results of Co-Living, and implementing a prototype will allow the partners to put into practice the design and specifications made in previous stages. The developments regarding this task will be available in Deliverable D3.1 Implementation of SoCo-Net prototype (Month 16).

- Task 4.1 "Specification, design, implementation and testing of Care & Wellness services". This task will allow the partners to develop third-party plug in services addressing the elderly social interaction context categories of Care & Wellness. The developments regarding this task will be available in Deliverable D4.1 "Implementation and Provision of an operational module of Care & Wellness services" (Month 24).

- Task 4.2 "Specification, design, implementation and testing of Guidance services". This task will allow the partners to develop third-party plug in services addressing the elderly social interaction context categories of Guidance. The developments regarding this task will be available in Deliverable D4.1 "Implementation and Provision of an operational module of Guidance services" (Month 24).

- Task 4.3 "Specification, design, implementation and testing of Mobility monitoring services". This task will allow the partners to develop third-party plug in services addressing the elderly social interaction context categories of Mobility monitoring. The developments regarding this

task will be available in Deliverable D4.1 "Implementation and Provision of an operational module of Mobility monitoring services" (Month 24).

- Task 7.2 "Exploitation plan & Business strategy." The Co-Living business strategy will be developed on Month 24, and revised at the end of the project. A detailed strategy, based on the most recent developments made during the project life will be developed in order to evaluate the commercial potential of the Co-Living solution. Furthermore a market analysis will look into the competing existing solutions, and explain how Co-Living will try to differentiate itself, and which added value it will provide. The developments regarding this task will be available in Deliverable D7.4 Business Strategy (M24 and M36).

As it is stated in the Description of Work (DoW), the Co-Living consortium aims at offering a first industrial system ready to be commercialised 2 years after the end of the project. Therefore within this time span, the Co-Living should conclude the development of the products and services, as well as reach an agreement regarding the exploitation of these project results.

References

[1]   Eurostat (2011): "1st January population by sex and 5-year age groups" [proj_10c2150p]

[2]   Eurostat (2011b): "Computers and the Internet: Individuals - Summary of EU aggregates" [isoc_ci_eu_i]

[3]   WHO (2002): Active Ageing – A Policy Framework, WHO, Geneva

Glossary

Table 6: List of terms, abbreviations and acronyms

AAL	Ambient Assisted Living
ICT	Information and Communications Technology
e-Inclusion	Digital inclusion
e-Health	Healthcare practice supported by electronic processes and communication

Annexes

Annex 1: QUESTIONNAIRE FOR D7.3 "Exploitation Strategy and Plan"

Co-Living Exploitation Strategy

- Individual business exploitation plans

- Co-Living products/services intended to be exploited individually by your organization:

- Targeted markets (National/International/EU, etc.):

- What is/will be Co-Living's products and services main value proposal (differentiating features, competitive advantage, etc.)? (Please try to develop your answers)

- Joint exploitation strategy

- Would you be interested in a Co-Living joint business strategy?

- Any IPR concerns regarding an eventual joint exploitation?

- Would you be interested in a Co-Living Joint venture?

- Which products/Services would you be interested in for a joint exploitation?

- In which markets? (National/International/EU, etc.)