

WP2 – Concept, Requirements & Specification

Market and Applicability Watch Report

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When developing a new platform of applications whose final aim is to enter the market, it is fundamental to know and understand that market. In this deliverable, a characterization of the market of independent and healthy living tools for elderly is provided.



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This deliverable is subject to final acceptance by the European Commission.

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Project Partners

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Executive Summary

ALFRED aims at developing and bringing into the market a new platform of applications for helping elderly people to live independently and healthier. To ensure a successful market launch of ALFRED, an essential focus of the project needs to be on the Market and Applicability Watch, along with the Exploitation and Business Plan.

The Market and Applicability Watch is a continuous task of the Project, covering the whole duration of it. This is the first deliverable of the Market and Applicability Watch from a total of 4 (months 6, 12, 24, 36).

In this deliverable, a strategy was defined for continuously monitor and gather information on the Market and Applicability of solutions similar to the ones ALFRED will develop.

Moreover, a mapping of keywords, a glossary of 45 concepts, a market analysis with 80 projects, products and services and a technology watch were performed.

A significant part of the technology that will be used in ALFRED is either still under development or under fine tuning for targeting elderly people requirements. There are very interesting R&D projects recently finished or under development, but none of them approaches the elderly people problems as ALFRED does. Nevertheless, many of them aim at providing competing solutions, so a careful watch is necessary. As to commercially available solutions, there are some performing independently parts of what ALFRED aims at doing, but none is doing the “full package”. It should also be highlighted that most of these solutions arrived very recently in the market. In such a relatively new market, the timing is identified as a key factor for succeeding.

The market analysis provided in this deliverable will not only help to develop the ALFRED applications, but will also increase the possibilities of a successful launching of ALFRED as a profitable business at the end of the project.

Being an area undergoing developments and changes very quickly, updating this information along the project is a requirement, and will be provided in the subsequent deliverables 2.2.

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1 Introduction

ALFRED – Personal Interactive Assistant for Independent Living and Active Ageing – is a project funded by the Seventh Framework Programme of the European Commission under Grant Agreement No. 611218. It will allow older people to live longer at their own homes with the possibility to act independently and to actively participate in society by providing the technological foundation for an ecosystem consisting of four pillars:

- **User-Driven Interaction Assistant** to allow older people to talk to ALFRED and to ask questions or define commands in order to solve day-to-day problems.
- **Personalized Social Inclusion** by suggesting social events to older people, taking into account their interests and their social environment.
- A more **Effective & Personalized Care** by allowing medical staff and caretakers to access the vital signs of older people monitored by (wearable) sensors.
- **Physical & Cognitive Impairments Prevention** by way of serious games that help the users to maintain and possibly even improve their physical and cognitive capabilities.

Within this deliverable, a first evaluation of the Market and Applicability Watch is provided, sources for searching identified, and a structured way to consider the business side of the whole project is defined.

1.1 ALFRED Project Overview

One of the main problems of western societies is the increasing isolation of older people, who do not actively participate in society either because of missing social interactions or because of age-related impairments (physical or cognitive). The outcomes of the ALFRED project will help to overcome this problem with an interactive virtual butler (a smartphone application also called ALFRED) for older people, which is fully voice controlled.

The ALFRED project is wrapped around the following main objectives:

- To empower older people to live independently for longer by delivering a virtual butler with seamless support for tasks in and outside the home. This virtual butler (the ALFRED app) aims for a very high end-user acceptance by using a fully voice controlled and non-technical user interface.
- To prevent age-related physical and cognitive impairments with the help of personalized serious games.
- To foster active participation in society for the ageing population by suggesting and managing events and social contacts.
- And finally, to improve caring by offering direct access to vital signs for carers and other medical staff as well as alerting in case of emergencies. The data is collected by unobtrusive wearable sensors monitoring the vital signs of ALFRED's users.

To achieve its goals, the project ALFRED conducts original research from a user centred perspective and applies technologies from the fields of Ubiquitous Computing, Big Data, Serious Gaming, the Semantic Web, Cyber Physical Systems, the Internet of Things, the Internet of Services, and Human-Computer Interaction. In addition, there are tasks devoted to the Business Model, Market applicability and Exploitation of ALFRED, to

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ensure a successful launch of ALFRED into the market by the end of the three years duration project. For more information, please refer to the project website at <http://www.alfred.eu>.

1.2 Deliverable Purpose, Scope and Context

The purpose of this deliverable is to:

1. Guide the progress of the project according to the identified business opportunities and technology trends and regulations;
2. Identify main key players and potential clients and collaborators.
3. Identify competitors and compare their technologies.
4. Place ALFRED into the context with all the other projects/services/products/technologies that are under development for tackling similar problems as ALFRED.
5. Providing a first template for the business plan outline.

1.3 Document Status and Target Audience

This document is listed in the Description-of-Work (DoW) as “public”, as it provides a Market and Applicability information of projects related to ALFRED and can therefore be used by external parties in order to understand the market space on ICT technologies for independent living of elderly people.

While the document mainly aims at the project’s contributing partners, this public deliverable can also be useful for the wider scientific and industrial community. This includes other publicly funded research and development projects, which may be interested in collaboration activities.

The current document is a living document and will be updated biannually.

1.4 Document Structure

This deliverable is broken down into the following sections:

- Chapter 1 provides an introduction for this deliverable including a general overview of the project, and outlines the purpose, scope, context, status, and target audience of this deliverable.
- Chapter 2 defines a Mapping of Keywords – the concepts being developed in each pillar are identified
- Chapter 3: Glossary for the project – identification and definition of domain-specific terms
- Chapter 4: Vision and Strategy for this Deliverable
- Chapter 5: Target user
- Chapter 6: Market analysis – Identification of existing Research Projects, Products and Services
- Chapter 7: Technology Watch – Identification of technology to be used in ALFRED in comparison to competing technologies

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2 Mapping of Keywords

The starting point of this deliverable consisted in defining the main keywords of each of the 4 Pillars. The area of Ambient and Assisted Living is very active in recent decades on the developing of several solutions. For this reason, it was considered highly suitable to beginning by clearly defining what is that ALFRED aims at doing, distinguishing it from the other related areas and projects. Please find below the final Mapping (Figure 1).

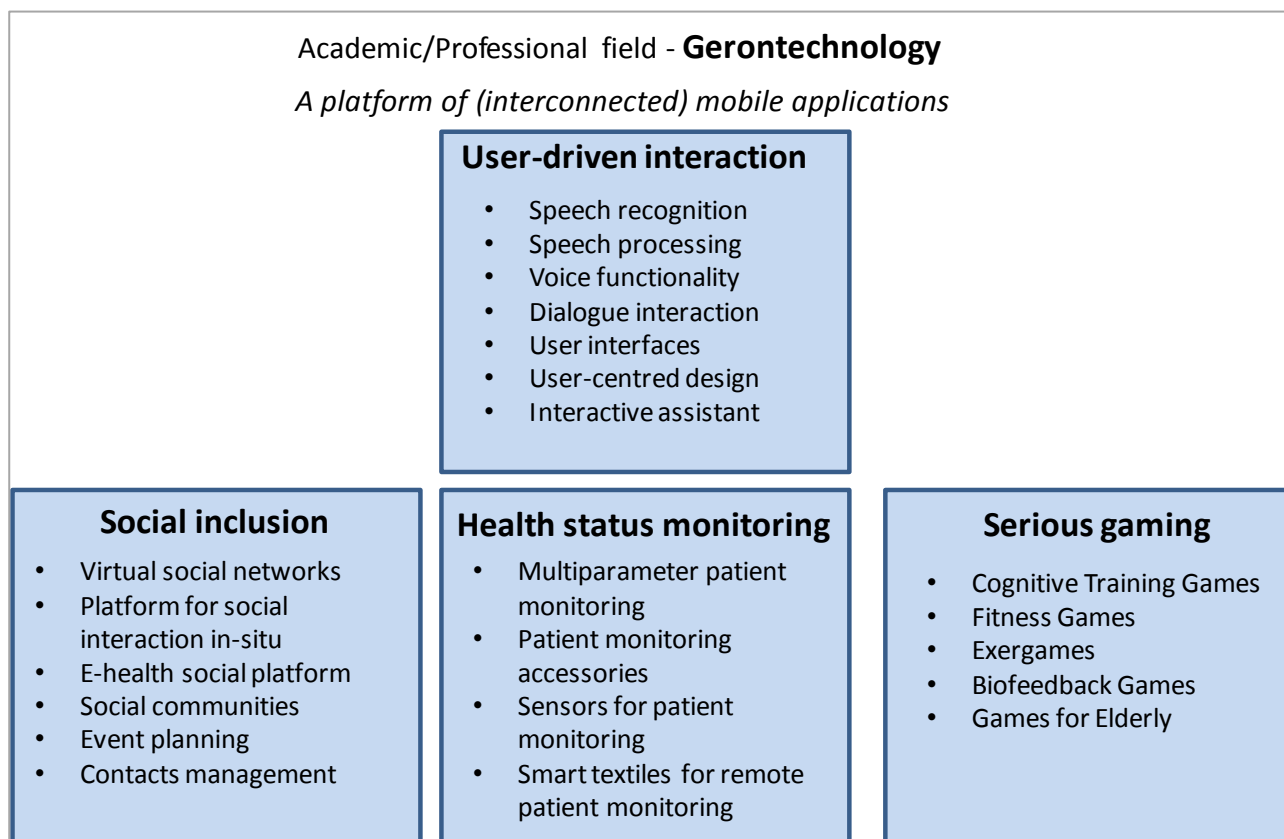


Figure 1: Mapping of Keywords for ALFRED

This keywords definition was very useful for searching related projects, products and services. Each of the boxes represents one of the ALFRED Pillars; the **User-driven interaction** is on top because it applies to all of the Pillars. It should be highlighted that the Social inclusion, Health status monitoring and Serious gaming Pillars are not necessarily independent from the others, as a matter of fact many of the applications foresee to combine the characteristics/technology of more than one pillar.

As the project continues and the work on the technological WorkPackages develops, some of the keywords might be adapted. In practice, the applications that will be developed will be a combination of several of these keywords, among the different pillars.

3 ALFRED's Glossary

The second phase of the task 2.2 comprised the creation of a unified glossary for the project. The glossary aims at defining domain-specific terms used in the projects and in its pilots. For creating the glossary, several European Projects from FP6-FP7 (PEOPLE, ICT), Ambient Assisted Living Program (AAL) and Ageing Well Network were searched as well as relevant publications in the field.

Until now, 45 concepts were defined and are publicly available in a form of a Wiki (<http://alfred.eu/dokuwiki>). They can also be found in the **Annex 1** of this document.

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4 Vision and Strategy for this Deliverable

The Deliverable **2.2 Market and Applicability Watch** is closely related with WP9 Impact, namely with Deliverables **9.1 Exploitation Plan**, and **9.6 Standardization, Policy and Ethical Issues**. As a whole, the main objective is to **provide the project with a complete analysis of the market alongside with a business exploitation strategy**. By doing so, we assure that by the end of the project ALFRED applications will be successfully launch into the market, being profitable and contributing to strengthening Europe’s industry.

As a 2.2 task, the ALFRED DoW requires: a) Glossary of ALFRED related concepts; b) List of existing approaches, products and R&D projects; and c) Applicability watch of the project results. The last will be developed ahead in time when there are results from the technological side of ALFRED to evaluate from this perspective.

In this document, the Market and Applicability Watch is considered with a broader vision and concept. Figure 2 summarizes the several aspects of the market that are considered relevant in this analysis, and that ultimately will lead to the Exploitation and Business Model Analysis and Planning of WP9. Further on, more specific Market analysis based on the marketable outcomes of the project will be carried out.

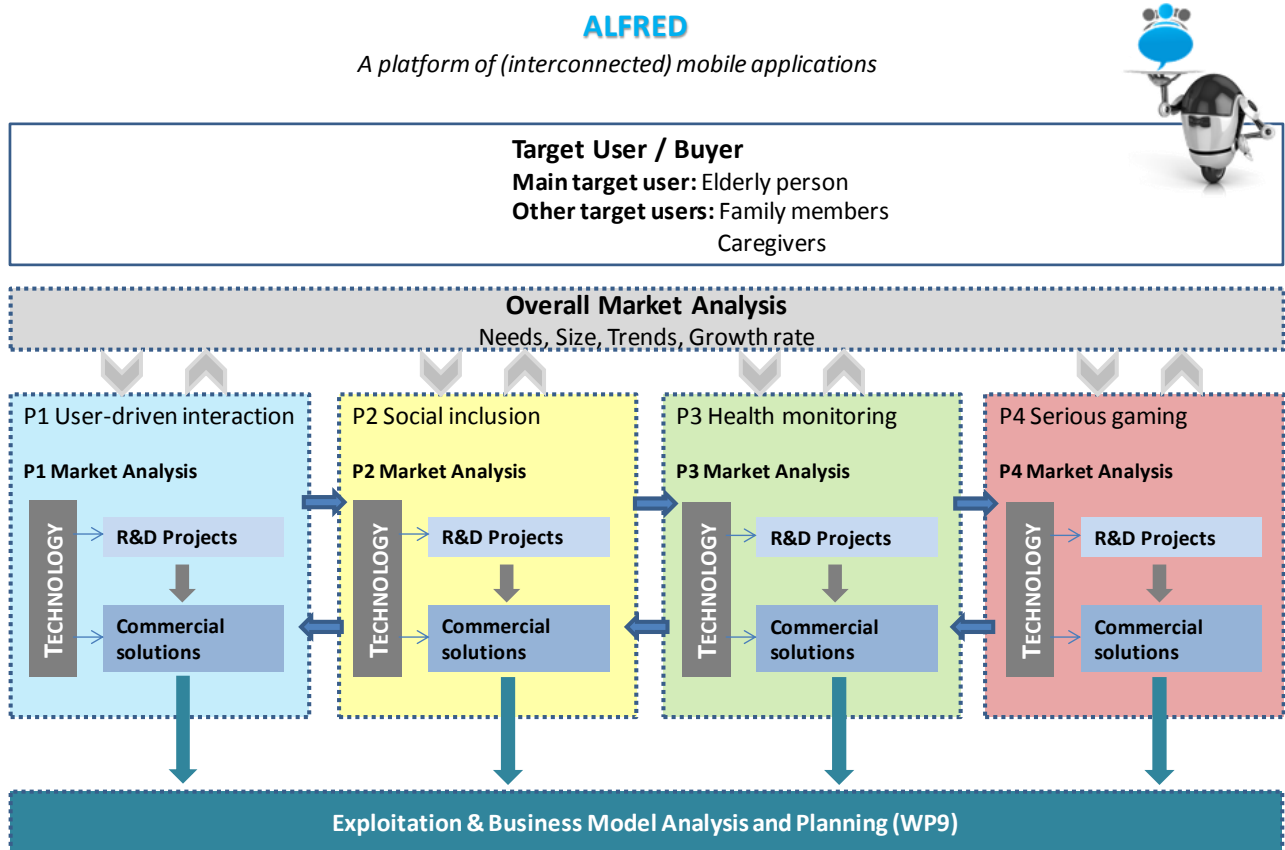


Figure 2: D2.2 Vision and Strategy

Along the project development, a continuous analysis and evaluation of the different aspects will be performed, updated, customized to the project developments and provided in the subsequent 2.2 deliverables (months 12, 24, 36). This will **integrate** both **user requirements** (D2.3 recently submitted), the **technological developments** in WP3 to WP7, the **piloting and validation results** of WP8 and finally the **standardization and ethics requirements** of WP9. Clearly, this is a part of a bigger picture which will be the business plan that will be developed on WP9.

After a detailed characterization of the target users – trends, needs, and buying power – an overall market analysis will be performed. Then, a specific analysis on ICT desktop and mobile solutions that are connected with each of the ALFRED Pillars or in general are devoted to enhance an active and healthy ageing will also be provided.

The technologies under development will be watched, and related to the correspondent R&D projects or commercial available solutions. When suitable, a benchmarking analysis with commercial available solutions will be performed. The Business model adopted by the solutions already in the market will be analyzed, and lessons will be learnt regarding what could be the best business strategy for launching ALFRED into the Market. Despite being represented as separate units, the ALFRED pillars interact between them in several ways:

- a) Most of the foreseen solutions/applications, consider the involvement of at least 2 pillars. The User-driven interaction pillar, for instance, is common to all, as this is one of the main features of ALFRED.
- b) The developments regarding technology and business models achieved in one pillar can not only be integrated and used in the others but can also impact the others, for instance by creating a higher awareness among users on the advantages of such solutions.
- c) The developments in the 4 pillars regarding technology and commercial solutions also impact on the overall market. As an example, with more and more solutions reaching the market the awareness around the advantages of it increases and there are more people willing to buy similar solutions. On the negative side, this also increases the offers in the market, which may mean a reduced market share for ALFRED.

These several aspects and interconnections will be considered in more detail at more advanced stages of the project. As already mentioned, this is a continuous task in ALFRED project and not all information is already available. In subsequent chapters, the developments so far in each of the points will be described.

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5 Target User

All over the world, we are experiencing a demographic change that is leading to larger percentages of elderly people in society. Within the next 20 years, the amount of people over 75 will raise significantly in Europe. According to the third EU Demography Report, the life expectancy has also been increasing in an almost continuous and uniform trend at the rate of 2-3 months every year, and is the main driver behind the population ageing¹.

Other influencing factors are the low fertility levels due to lifestyle, stress, economic crisis, among other factors.

In 2012 there were approximately 810 million persons aged 60 years or over in the world (11% of total) and this number is projected to grow to more than 2 billion by 2050 (22% of total). A significant percentage of these persons are living with spouse or alone at home (Figure 3).



Figure 3: Percentage of Population Aged 60 or Over Living Independently [UN12]

Living independently at elderly ages is a clear tendency in more developed regions, and Europe is a notably example of this. In ALFRED, we target this group of people: people over 60 that live independently at home.

¹ <http://ec.europa.eu/social/main.jsp?langId=en&catId=502&newsId=1007&furtherNews=yes>

6 Market Analysis

A comprehensive search on existing projects, products and services in the field of Gerontechnology was performed and the ones with relation to ALFRED were included in an excel sheet that is available at the ALFRED wiki (<http://alfred.eu/dokuwiki>).

For doing this, the concepts from the Mapping of Keywords were used in a multi approach: a) European Projects finalized or at advanced stages – European Projects from the AAL initiative and European Projects from ICT and Health calls; b) info provided from the ALFRED partners; c) google search with the keywords from the Mapping of keywords, both alone and in combination of two and three.

As a result, a total of 80 projects, products and services were. These were classified by:

1. **Category** – Ambient Assisted Living, Independent living for Seniors, Technological needs and adaptation for Seniors, P1 User-driven interface, P1 Speech recognition, P2 Social inclusion, P3 Health status monitoring, P4 Serious games general
2. **Name of the Project/Product/Service**
3. **Description** – one sentence description
4. **Relation to Pillar** – identification of the relationship to one or several of the 4 ALFRED Pillars
5. **Project/Product/Service** (to select one)
6. **Company** (if product & service) / Call if project – most of the Projects identified were European funded Projects, from FP6, FP7 and AAL initiative
7. **Underlying technology** – the technology associated with each Project/Product/Service
8. **Webpage** – as an indication on where more information can be found

A graphic representation of the different Projects (Figure 4) and Products & Services (Figure 5) can be found below.

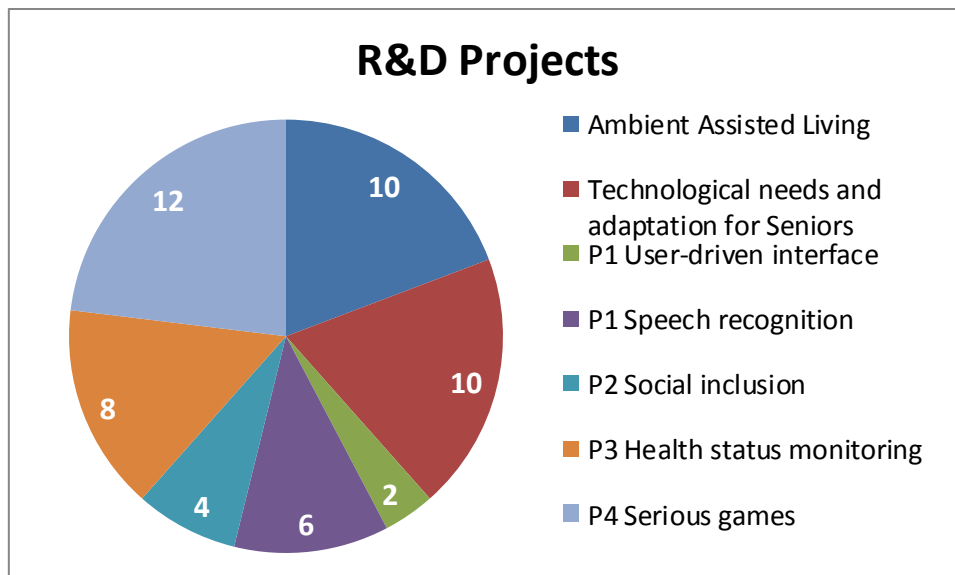


Figure 4: R&D Projects Identified in the Gerontechnology Area

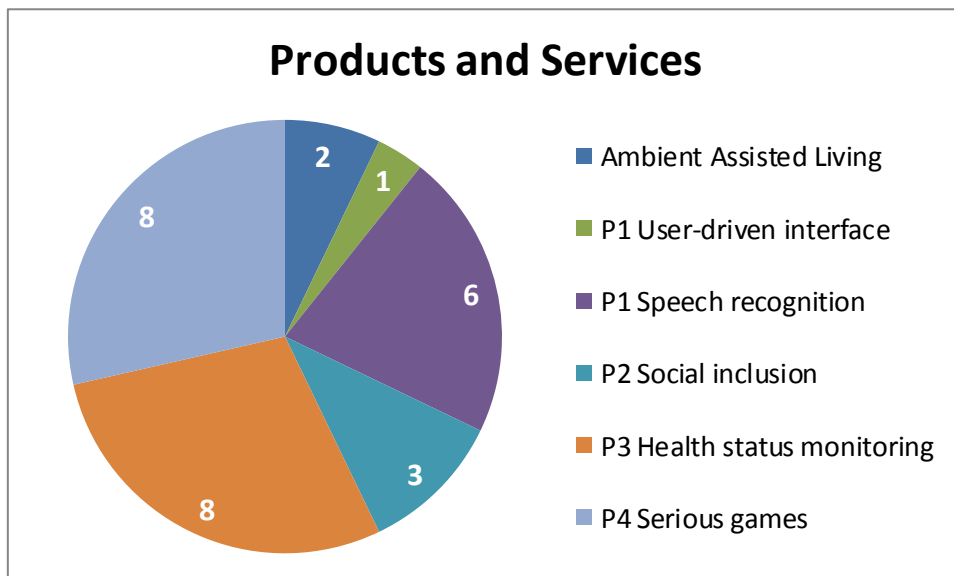


Figure 5: Products and Services Identified in the Gerontechnology Area

From all the Projects/Products and Services this list, the ALFRED partners will be asked to identify the most relevant ones for ALFRED, either because they are already in the market, they are the main player in the market, or they are using a technology with a high potential and similar to the one ALFRED aims at using.

About the product / services identified, what we want to know is:

1. **Product** – what are the customer of this product? Which kind of relationships they establish with the vendors (consultancy, one-shot selling, etc.?)
2. **Price** – what price are they charging? Which are the revenue streams?
3. **Promotion** – what activities are they conducting for promoting this product?
4. **Place** – where are they selling this product?
5. **Other** – sales force structure, regulatory aspects or approvals, technical issues, etc.

A further analysis including these aspects will be performed for the next deliverables of D2.2. Also, as this is a living document, it will be continuously updated.

7 Technology Watch

For better understanding and monitoring the Technology side of ALFRED, the partners in charge of the 4 ALFRED Pillars were asked to identify competing technologies and possible emerging technologies.

- **Pillar I:** User-Driven Interaction Assistant – TALK (Talkamatic AB)
- **Pillar II:** Personalized Social Inclusion – TIE (TIE Nederland N.V.)
- **Pillar III:** Effective & Personalized Care – AITEX (Asociacion de Investigacion de la Industria Textil)
- **Pillar IV:** Serious Games for Physical & Cognitive Impairments Prevention - TUDA (Technische Universität Darmstadt)

Table 1: Talkamatic Technology Watch

TALK	
<i>Pillar(s)</i>	Pillar I: User-Driven Interaction Assistant Pillar II: Personalized Social Inclusion Pillar III: Effective & Personalized Care Pillar IV: Physical & Cognitive Impairments Prevention
<i>Technology that will be used in ALFRED</i>	Refining dialogue engine in order to make speech recognition more accurate and error handling/grounding more efficient and robust.
<i>Innovative aspects and advantages of the technology that will be used in ALFRED</i>	<ul style="list-style-type: none"> • Grounding will happen in real time, meaning a more natural way of signalling understanding/non-understanding in the conversation • Making use of user model data in order to make speech recognition more accurate by applying it to N-best output from recogniser unit. • Language model optimizations
<i>Alternatives in the market (name of the product/service and the company)</i>	No alternatives in the open market.
<i>Other benefits (more revenue, less cost ...) that ALFRED technology will provide to the potential buyer</i>	To be defined
<i>Emerging Technologies identified as (possible) future competitors</i>	WIT
<i>Where to keep updated on this info</i>	http://opusresearch.net/wordpress/

Table 2: Tie Netherlands Technology Watch

TIE				
<i>Pillar(s)</i>	Pillar II: Personalized Social Inclusion			
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<i>Technology that will be used in ALFRED</i>	<ul style="list-style-type: none"> • Java programming language • Data mining/Machine Learning algorithms (Bayesian classification, Prism, Text based) • Recommendation Engine (based on HDFS) • Communication modules to interact with other ALFRED components
<i>Innovative aspects and advantages of the technology that will be used in ALFRED</i>	Highly scalable, technically proven, and industry leading techniques and technologies will be used for Data mining Data mining algorithms will be injected on the fly to retrieve accurate recommendations for ALFRED users
<i>Alternatives in the market (name of the product/service and the company)</i>	<ul style="list-style-type: none"> • Apache SPARK • Cloudera • Hortonworks • https://stratosphere.eu • Splunk (http://dev.splunk.com)
<i>Other benefits (more revenue, less cost ...) that ALFRED technology will provide to the potential buyer</i>	Less cost Scalable recommendation engine; more criteria, filters can be added without any hustle
<i>Emerging Technologies identified as (possible) future competitors</i>	Cloudera
<i>Where to keep updated on this info</i>	

Table 3: AITEX Technology Watch

AITEX	
<i>Pillar(s)</i>	Pillar III: Effective & Personalized Care
<i>Technology that will be used in ALFRED</i>	Textile sensors Bluetooth Low Energy Algorithms
<i>Innovative aspects and advantages of the technology that will be used in ALFRED</i>	Adapted cloth design for elderly people Selection of sensors for use in monitoring elderly people Easy to connect
<i>Alternatives in the market (name of the product/service and the company)</i>	Equival (UK): Heart rate & breath monitor FitnessSHIRT (GE): Heart rate & breath monitor Heapsylon (USA): Heart rate monitor Hexoskin (CA): ECG signal, breathe & movement Nuubo (ES): ECG and position monitor Smart Sensing (FR): Heart rate and breath monitor Textronics (USA): Heart rate monitor Weartech (ES): Heart rate monitor
<i>Other benefits (more revenue, less cost ...) that ALFRED technology will provide to the potential</i>	Selection of specific applications for elderly Specific algorithms designed to specific situations Scalable solution

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<i>buyer</i>	
<i>Emerging Technologies identified as (possible) future competitors</i>	Flexible electronics Energy harvesting Nano-enabled sensor technologies
<i>Where to keep updated on this info</i>	http://www.wearable-technologies.com/ http://mashable.com/category/wearable-tech/ http://www.wearabletechworld.com/ http://www.gizmag.com/ http://www.talk2myshirt.com/ http://www.innovationintextiles.com/smart-textiles-nanotechnology/ http://www.smartfabricsconference.com/ http://www.wearabletechnologyshow.net/ http://www.wearablesdevcon.com/ http://www.iswc.net/

Table 4: TUDA Technology Watch

TUDA	
<i>Pillar(s)</i>	Pillar IV: Physical & Cognitive Impairments Prevention
<i>Technology that will be used in ALFRED</i>	<ul style="list-style-type: none"> • The Android Operating System for mobile devices • The Unity 3D engine to power the user interfaces of the games • The programming language Java • Internal smartphone sensors • Various types of external sensors (sensors to determine the user's vital signs such as her heart rate and sensors to determine the user's posture such as pressure mats and the Kinect)
<i>Innovative aspects and advantages of the technology that will be used in ALFRED</i>	<ul style="list-style-type: none"> • innovative ways to use the smartphone's internal sensors to determine what the user is doing and how he/she is feeling • development specialized external sensors for ALFRED, for example sensors that enable dancing games
<i>Alternatives in the market (name of the product/service and the company)</i>	n.a.
<i>Other benefits (more revenue, less cost ...) that ALFRED technology will provide to the potential buyer</i>	To be defined
<i>Emerging Technologies identified as (possible) future competitors</i>	n.a.
<i>Where to keep updated on this info</i>	

8 Conclusion

The ALFRED project is focused on developing applications for elderly people that meet the needs of the users (D2.3) and, at the same time, the ones of the Market. This means performing a comprehensive market analysis, identifying the competing technologies, commercial solutions and interesting business models. This will allow us to a) have a deep knowledge into the market and b) to take lessons learnt from these examples when creating the ALFRED exploitation and business plan in the WP9.

This task “Market and Applicability Watch Report”, which covers the whole project duration, allows keeping the project synchronized with the outer world and will ensure that there is a structured way of feeding in new information into the project. Also, it looks towards the post-project phase.

In this document, a first market analysis was performed and a strategy to tackle the several 2.2 deliverables was defined by: mapping of ALFRED keywords, creation of a Glossary, market analysis and technological watch.

A significant part of the technology that will be used in ALFRED is either still under development or under fine tuning for targeting elderly people requirements. There are very interesting R&D projects recently finished or under development, but none of them approaches the elderly people problems as ALFRED does. Nevertheless, many of them aim at providing competing solutions, so a careful watch is necessary. As to commercially available solutions, there are some performing independently parts of what ALFRED aims at doing, but none is doing the “full package”. It should also be highlighted that most of these solutions arrived very recently in the market. In such a relatively new market, the timing is identified as a key factor for succeeding.

The market analysis provided in this deliverable will not only help to develop the ALFRED applications, but will also increase the possibilities of a successful launching of ALFRED as a profitable business at the end of the project.

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References

[UN12] Population Ageing and Development, 2012, United Nations, Department of Economic and Social Affairs, ISBN 978-92-1-151494-0

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Annex 1 - Glossary

Active Ageing

Active ageing is the process of optimising opportunities for health, participation and security in order to enhance quality of life as people age. Active ageing applies to both individuals and population groups. It allows people to realise their potential for physical, social, and mental wellbeing throughout the life course and to participate in society according to their needs, desires and capacities, while providing them with adequate protection, security and care when they require assistance.

Source: Active Ageing: A Policy Framework. A contribution of the World Health Organization to the Second United Nations World Assembly on Ageing, Madrid, Spain, April 2002.

http://whqlibdoc.who.int/hq/2002/WHO_NMH_NPH_02.8.pdf

Active Ageing at Work

Remaining active and productive for a longer time, with an improved quality of work and a better work-life balance via easy-to-access ICT, innovative practices for adaptable workplaces, ICT skills and competences and ICT-enhanced learning (e.g., e-skills and e-learning).

Source: Ger van den Broek et al., Ambient Assisted Living Roadmap, AALIANCE, 2009.

<http://www.aaliance.eu/public/documents/aaliance-roadmap/aaliance-aal-roadmap.pdf>

Active Inclusion

A strategy aimed at facilitating the integration into sustainable, quality employment for those who can work, providing resources which are sufficient to live in dignity, together with support for social participation, for those who cannot work.

Source: Social Protection, Social Inclusion Glossary: Key terms explained, European Commission

http://ec.europa.eu/employment_social/spsi/docs/social_inclusion/glossary_en.pdf

Activities of Daily Living (ADLs)

A concept of functioning – activities of daily living are basic activities that are necessary to independent living, including eating, bathing and toileting. This concept has several assessment tools to determine an individual's ability to perform the activity with or without assistance.

Source: A Glossary of Terms for Community Health Care and Services for Older Persons, Ageing and Health Technical Report, Volume 5, WHO Centre for Health Development, 2004.

http://whqlibdoc.who.int/wkc/2004/WHO_WKC_Tech.Ser._04.2.pdf

Age Friendly

A society for all ages is the foundation of an age friendly society. In such a society the interdependence of generations and of individuals is emphasised; diversity is recognised; the identity, values and beliefs of the individual are protected; and social cohesion is fostered through the adoption of socially inclusive policies and priorities. In a society for all ages, the generations are valued equally and intergenerational solidarity is part of the social contract. In such a society, a life course perspective is adopted by all authorities; there is consistency and equity in the treatment of all citizens; and risks are pooled between and within generations. In keeping with the WHO's policy framework on active ageing, an age friendly society will seek to enhance the quality of life of its citizens as they age by optimising their opportunities for health, participation and security. An age friendly

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society will take account of all of the determinants of active ageing in its national, regional and local policies and strategies.

Source: An Age Friendly Society: A Position Statement, National Council on Ageing and Older People, 2005.
http://www.ncaop.ie/newsevents/88_AFS_Statement.pdf

Ageing Well at Home

Enjoying a healthier and higher quality of daily life for a longer time, assisted by technology, while maintaining a high degree of independence, autonomy and dignity.

Source: Ger van den Broek et al., Ambient Assisted Living Roadmap, AALIANCE, 2009.
<http://www.aaliance.eu/public/documents/aaliance-roadmap/aaliance-aal-roadmap.pdf>

Ageing Well in the Community

Staying socially active and creative through ICT solutions that are geared toward social networking, as well as good access to public and commercial services, so improving the quality of life and reducing social isolation, which is one of the main problems of elder people in rural areas with a low population as well as in urban areas with little family support.

Source: Ger van den Broek et al., Ambient Assisted Living Roadmap, AALIANCE, 2009.
<http://www.aaliance.eu/public/documents/aaliance-roadmap/aaliance-aal-roadmap.pdf>

Ambient Assisted Living (AAL)

AAL aims to prolong the time people can live in a decent more independent way by increasing their autonomy and self-confidence, by allowing them to discharge normal everyday activities, by improved monitoring and care of the elderly or ill person, by enhancing their security while ultimately saving resources. The main objective is to develop a wearable light device able to measure specific vital signs of the elder or ill person, to detect falls and to communicate autonomously in real time with his/her caregiver in case of an emergency, wherever they are. The emergency information can be directed to the personal caretaker and/or the Emergency Service number.

Source: CAALYX: Complete ambient assisting living experiment, Project 045215, Seventh Framework Programme,
http://cordis.europa.eu/fetch?CALLER=PROJ_ICT&ACTION=D&CAT=PROJ&RCN=80528

The concept of Ambient Assisted Living is understood as:

- To extend the time people can live in their preferred environment by increasing their autonomy, self-confidence and mobility,
- To support maintaining health and functional capability of the elderly individuals,
- To promote a better and healthier lifestyle for individuals at risk,
- To enhance the security,
- To prevent social isolation and
- To support maintaining the multifunctional network around the individual,
- To support carers, families and care organisations,
- To increase the efficiency and productivity of used resources in the ageing societies.

Source: Ambient Assisted Living (AAL) Joint Programme web site, <http://www.aal-europe.eu/about-aal>

Ambient Intelligence

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Ambient Intelligence is a multi-disciplinary approach which aims to enhance the way environments and people interact with each other. The ultimate goal of the area is to make the places we live and work in more beneficial to us. Smart Homes is one example of such systems but the idea can be also used in relation to hospitals, public transport, factories and other environments. The achievement of Ambient Intelligence largely depends on the technology deployed (sensors and devices interconnected through networks) as well as on the intelligence of the software used for decision-making.

Source: Augusto, Juan Carlos, "Ambient Intelligence: Basic Concepts and Applications," University of Ulster, 2008. <http://www.infj.ulst.ac.uk/~jcaug/augusto2008.pdf>

Ambient Intelligence is an exciting new concept in information technology, in which people are empowered through a digital environment that is aware of their presence and context. The environment is sensitive, adaptive and responsive to their needs, habits, gestures and emotions. The issues posed by ambient intelligence require multi-disciplinary and multicultural research, with input from computer science, electrical engineering, interaction design and behavioural studies.

Source: AMBIENCE Project, Information Technology for European Advancement, 2003. <http://www.hitech-projects.com/euprojects/ambience/>

Ambient Intelligence has the awareness of specific characteristics of human presence and personality dealing in turn with user needs, responding intelligently and all the while – remaining invisible to the user (unless necessary) and striving to ensure that any interactions should be of minimal effort, easy to understand and ultimately enjoyable. Ambient Intelligence refers to the environment of computing which is aware and responsive to the presence of human interaction. The aim is to use the space surrounding us in the form of movement, shape and sound recognition and create a system that will be able to recognise all the different scents that are in the environment.

Source: Curran, Kevin (ed.), Ambient Intelligence: The Hidden Natural Intelligence, Editorial Preface of the International Journal of Ambient Computing and Intelligence (IJACI), <http://www.igi-global.com/Files/Ancillary/IJACI%20preface%201%281%29.pdf>

Ambient Technology

Ambient technology, systems and services which are everywhere, fully interoperable (in both technical and non-technical terms), and are instantly and unobtrusively accessed or made available through constant monitoring via network sensors and receptors of who is where, and what their needs are in changing situations.

Source: Millard J., et. al., Towards the eGovernment Vision for the EU in 2010: Research Policy Challenges, European Commission Joint Research Centre, 2006, pp.228 – 229. <http://ftp.jrc.es/EURdoc/eur22635en.pdf>

Assistive Technology

Assistive technology is any service or tool that helps the elderly or disabled do the activities they have always done but must now do differently. These tools are also sometimes called "adaptive devices." For many seniors, assistive technology makes the difference between being able to live independently and having to get long-term nursing or home-health care. For others, assistive technology is critical to the ability to perform simple activities of daily living, such as bathing and going to the bathroom.

Source: Fact Sheet on Assistive Technology, US Department of Health and Human Services, Administration on Ageing,

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http://www.aoa.gov/AoAroot/Press_Room/Products_Materials/fact/pdf/Assistive_Technology.pdf

An umbrella term for any device or system that allows individuals to perform tasks they would otherwise be unable to do or increases the ease and safety with which tasks can be performed.

Source: A Glossary of Terms for Community Health Care and Services for Older Persons, Ageing and Health Technical Report, Volume 5, WHO Centre for Health Development, 2004.

http://whqlibdoc.who.int/wkc/2004/WHO_WKC_Tech.Ser._04.2.pdf

Design for All

The term Design for All is used, sometimes causing confusion, as an indication of the conceptual principle that all users must be taken into account in the design of new products and of the technical approach(es) that can produce designed for all products. Apparently, there is a conceptual confusion between the concepts of Universal Access, i.e. a right of all citizens, and Design for All (Universal Design), i.e. a possible approach to grant this right. What is considered important, particularly in the field of disability, is granting people Universal Access. This is clearly right, but the claim that, therefore, everything that aims to give accessibility to all is Design for All is conceptually misleading. Design for All is a well-defined approach, particularly promising due to the developments of the Information Society, which must coexist at least in the short medium terms with Assistive Technology to serve all potential users of ICT systems, services, and applications.

Source: Pier Luigi Emiliani, et. al., "Report on the impact of technological developments on eAccessibility", Feb 2008. http://www.dfaei.org/docs/D2.1_Commission.pdf

Digital Divide

The term "digital divide" refers to the gap between individuals, households, businesses and geographic areas at different socio-economic levels with regard to both their opportunities to access information and communication technologies (ICTs) and to their use of the Internet for a wide variety of activities.

Source: Organisation for Economic Co-operation and Development, OECD Glossary of Statistical Terms, <http://stats.oecd.org/glossary/detail.asp?ID=4719>

A digital divide is marked not only by physical access to computers and connectivity, but also by access to the additional resources that allow people to use technology well.

Source: Warschauer, Mark, Technology and Social Inclusion: Rethinking the Digital Divide, The MIT Press, Cambridge, Massachusetts, 2003. http://bib.tiera.ru/DVD-028/Warschauer_M._Technology_and_Social_Inclusion%5Bc%5D_Rethinking_the_Digital_Divide_%282003%29%28en%29%28272s%29.pdf

The term "digital divide" is used to characterize an emerging polarisation phenomenon in society, creating a gap between those who have access to and use the potentialities of the information and communication technologies for their own achievements, and those who are not in a position to access or use these potentialities. The digital divide is usually described and measured by statistical differences in access and use of Internet-related services between different social groups, characterised by demographic variables (gender, age, type of household), socio-professional variables (education, job, professional status,

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income) and geographical variables (housing, urbanisation, geographical location, regional features, geopolitical factors).

Source: Analytic Framework – eInclusion and eAccessibility Priority Issues, eInclusion@EU Project: Strengthening eInclusion & eAccessibility Across Europe, Deliverable 1.1, October 2004.

http://www.empirica.com/themen/einclusion/documents/eInclusion_Analytic-framework.pdf

Domotics Technologies

Domotics is a new discipline – a technological area that can provide innovative solutions to enhance the quality of life and the needs of home occupiers during their social, cultural, and economic activities or during their spare time.

Home automation or domotics is generally understood as the application of new technological solutions based on electronics and telecommunication to the domestic environment, with the purpose of improving devices and already existing products and to provide a large number of services of domestic utility.

Source: G.Andreoni, M.Pizzagalli. Relevance of Ergonomics in Domotics and Ambient Intelligence. In: W. Karwoski (ed) International Encyclopaedia of Ergonomics and Human Factors, 2nd edition, Chapter 352.

e-Health

The term e-health incorporates some elements of telemedicine — that is, the use of telecommunication tools, coupled with medical expertise, to deliver diagnostic, therapeutic and educational services to individuals living some distance from medical facilities. But it is generally agreed that e-health is more than that. It includes the electronic background tasks that make the medical world tick, and the technical wizardry that is behind the systems which allow, for example, the sharing of medical expertise and radiology information. In short, the term “e-health” encompasses all of the information and communication technologies (ICT) necessary to make the health system work.

Source: International Telecommunication Union.

<http://www.itu.int/itunews/issue/2003/06/standardization.html>

e-Health is today’s tool for substantial productivity gains, while providing tomorrow’s instrument for restructured, citizen-centred health systems and, at the same time, respecting the diversity of Europe’s multi-cultural, multi-lingual health care traditions. There are many examples of successful e-Health developments including health information networks, electronic health records, telemedicine services, wearable and portable monitoring systems, and health portals.

Source: “e-Health -making healthcare better for European citizens: An action plan for a European e-Health Area”, Commission of the European Communities, Brussels, 30.4.2004.

http://ec.europa.eu/information_society/doc/qualif/health/COM_2004_0356_F_EN_ACTE.pdf

e-Health can be defined as 'health services, information and education delivered or enhanced through the internet and related technologies'.

Source: Empirica, “Assessment of the Senior Market for ICT. Seniorwatch 2006 – Progress and Developments”, April 2008.

http://ec.europa.eu/information_society/activities/einclusion/docs/swa2finalreport.pdf

e-Inclusion / Social Inclusion / Active Inclusion

e-Inclusion means both inclusive ICT and the use of ICT to achieve wider inclusion objectives. It focuses on participation of all individuals and communities in all aspects of the information society. e-Inclusion policy, therefore, aims at reducing gaps in ICT usage

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and promoting the use of ICT to overcome exclusion, and improve economic performance, employment opportunities, quality of life, social participation and cohesion.

Source: European Commission,

http://ec.europa.eu/information_society/activities/einclusion/index_en.htm

In order to help Member States mobilise those who can work and provide adequate support to those who cannot, the Commission has proposed a holistic strategy that can be termed active inclusion. It combines income support at a level sufficient for people to have a dignified life with a link to the labour market through job opportunities or vocational training and through better access to enabling social services. Active inclusion in this sense is fully complementary to the “flexicurity” approach, while targeting those at the margins of the labour market. It shapes an “active welfare state” by providing personalised pathways towards employment and ensuring that those who cannot work can live in dignity and contribute as much as possible to society. Therefore, active inclusion contributes to the Lisbon strategy and is also a building block of the social dimension of the EU’s Sustainable Development Strategy.

Source: Communication from the Commission to the Council, The European Parliament, The European Economic and Social Committee and the Committee of the Regions, <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=COM:2007:0620:FIN:EN:PDF>

Active inclusion policies:

- Support the implementation of fundamental rights;
- Promote gender equality and equal opportunities for all;
- Take careful consideration of the complexities of multiple disadvantages and the specific situations and needs of the various vulnerable groups;
- Take due account of local and regional circumstances and improve territorial cohesion;
- Be consistent with a lifecycle approach to social and employment policies so they can support intergenerational solidarity and break the intergenerational transmission of poverty.

Source: Commission Recommendation of 3 October 2008 on the active inclusion of people excluded from the labour market (notified under document number C(2008) 5737) <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:32008H0867:EN:HTML>

Electronic vs. Personal Health Records

Electronic Health Records (EHR) is an aggregation of patient-centric health data that originate from the patient record systems of multiple independent healthcare organizations. It is a long-term record for a patient, detailing his or her involvement with individual healthcare organizations and episodes of care and includes detailed clinical data, such as individual laboratory results and prescription refill information.

Source: Tender Specifications, Coping with an ageing population – Learning from good eHealth and telecare practices (Smart 2010/0023).

http://ec.europa.eu/information_society/eeurope/i2010/docs/studies/ts-ehealth_2010.pdf

Personal Health Records (PHR) are an Internet-based patient-owned and patient controlled set of tools that allow people to access and coordinate their lifelong health information and make appropriate parts of it available to those who need it. The PHR infrastructure includes components and functions that allow patients to collect and share

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their health information via a web platform. PHR applications are any functions within a PHR system that allow patients to manage their own health and the health of others (dependents) through education and monitoring, as well as enable the exchange of data regarding their health.

Source: Tender Specifications, Coping with an ageing population – Learning from good eHealth and telecare practices (Smart 2010/0023).

http://ec.europa.eu/information_society/eeurope/i2010/docs/studies/ts-ehealth_2010.pdf

End-user

The persons who will be using the project results. A difference can be made between primary end-users, secondary end users and tertiary end-users.

- **Primary end-user** is the person who actually is using an AAL product or service, a single individual, “the well-being person”. This group directly benefits from AAL by increased quality of life;
- **Secondary end-users** are persons or organisations directly being in contact with a primary end-user, such as formal and informal care persons, family members, friends, neighbours, care organisations and their representatives. This group benefits from AAL directly when using AAL products and services (at a primary end-user’s home or remote) and indirectly when the care needs of primary end-users are reduced;
- **Tertiary end-users** are such institutions and private or public organisations that are not directly in contact with AAL products and services, but who somehow contribute in organizing, paying or enabling them. This group includes the public sector service organizers, social security systems, insurance companies. Common to these is that their benefit from AAL comes from increased efficiency and effectiveness which result in saving expenses or by not having to increase expenses in the mid and long term.

<http://www.aal-europe.eu/get-involved/i-am-a-user-2/>

Ethics (of care)

The basic evaluative principles which (should) guide “good” care. Principles typically refer to respect for, and the dignity of, human beings. Basic dimensions are “autonomy” (respect for self-determination), “well-being” (respect for happiness, health and mental integrity) and “social justice” (justifiable distribution of scarce goods and services). More specifically, ethics of care refer to ethical standards developed for the care professions which are designed to implement ethical principles in the practice of care provision.

Source: A Glossary of Terms for Community Health Care and Services for Older Persons, Ageing and Health Technical Report, Volume 5, WHO Centre for Health Development, 2004.

http://whqlibdoc.who.int/wkc/2004/WHO_WKC_Tech.Ser._04.2.pdf

Gerontechnology

Gerontechnology is an interdisciplinary field of scientific research in which technology is directed towards the aspirations and opportunities for the older persons. Gerontechnology aims at good health, full social participation and independent living up to a high age, be it research, development or design of products and services to increase the quality of life.

www.gerontechnologie.nl/

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Health Related Quality of Life (HRQL) Measure

Individual outcome measure that extends beyond traditional measures of mortality and morbidity to include such dimensions as physiology, function, social activity, cognition, emotion, sleep and rest, energy and vitality, health perception and general life satisfaction (some of these are also known as health status, functional status or quality-of-life measures).

Source: A Glossary of Terms for Community Health Care and Services for Older Persons, Ageing and Health Technical Report, Volume 5, WHO Centre for Health Development, 2004.

http://whqlibdoc.who.int/wkc/2004/WHO_WKC_Tech.Ser._04.2.pdf

Healthy/Active Ageing

Healthy ageing is the process of optimising opportunities for physical, social and mental health to enable older people to take an active part in society without discrimination and to enjoy an independent and good quality of life.

Source: Healthy Ageing, EU-funded project 2004 – 2007,

<http://www.fhi.se/Documents/English/International/conference-documentation/Healthy-ageing-project.pdf>

Healthy ageing describes the ongoing activities and behaviours you undertake to reduce the risk of illness and disease and increase your physical, emotional and mental health. It also means combating illness and disease with some basic lifestyle realignment that can result in a faster and more enduring recovery.

Source: www.seniors.gov.au,

<http://www.seniors.gov.au/internet/seniors/publishing.nsf/Content/Healthy+ageing>

Active ageing is about adjusting our life practices to the fact that we live longer and are more resourceful and in better health than ever before, and about seizing the opportunities offered by these improvements. In practice it means adopting healthy life styles, working longer, retiring later and being active after retirement.

Source: "New Paradigm in Ageing Policy", European Commission,

http://ec.europa.eu/employment_social/soc-prot/ageing/news/paradigm_en.htm

An approach which recognizes that

- growing older is a part of living;
- the interdependence of generations;
- everyone has a responsibility to be fair in their demands on other generations;
- fosters a positive attitude throughout life to growing older;
- eliminates age as a reason to exclude any person from participating fully in community life;
- promotes a commitment to activities which enhance well-being and health, choice and independence, and quality of life for all ages;
- encourages communities to value and listen to older people and to cater for the diverse preferences, motivations, characteristics and circumstances of older persons in a variety of ways.

Source: A Glossary of Terms for Community Health Care and Services for Older Persons, Ageing and Health Technical Report, Volume 5, WHO Centre for Health Development, 2004.

http://whqlibdoc.who.int/wkc/2004/WHO_WKC_Tech.Ser._04.2.pdf

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Independent Living

Living at home without the need for continuous help and with a degree of self-determination or control over one's activities.

Source: A Glossary of Terms for Community Health Care and Services for Older Persons, Ageing and Health Technical Report, Volume 5, WHO Centre for Health Development, 2004.

http://whqlibdoc.who.int/wkc/2004/WHO_WKC_Tech.Ser._04.2.pdf

Information and Computer Technologies (ICTs)

An umbrella term covering technologies used for the manipulation and communication of information.

Source: Panella, Nancy Mary (compiled by), Library Services to People with Special Needs Section – Glossary of Terms and Definitions, International Federation of Library Associations and Institutions, 2009.

<http://www.ifla.org/files/hq/publications/professional-report/117.pdf>

Information Society

The term 'information society' was coined at the turn of the century to describe a society in which information and communication technologies (ICTs) have become an integral part of daily life. It has become second nature to millions of people around the world to use ATM banking machines, listen to a radio, carry a mobile phone, surf the Internet or consult their e-mail inbox, to cite but a few examples.

Source: Science in the Information Society, UNESCO Publications for the World Summit on the Information Society, 2003.

<http://portal.unesco.org/ci/en/files/12852/10704633955science.pdf/science.pdf>

The information society is synonymous with what is meant by "new information and communication technologies" (ICT). Since the beginning of the 90s, the new ICT have been booming. The universal use of electronic exchanges of information, convergence towards digital technologies, the exponential growth of the Internet and the opening up of telecommunications markets are all signs of this change.

The information society is revolutionising many areas of everyday life, particularly access to training and knowledge (distance learning, e-learning related services), work organisation and mobilisation of skills (teleworking, virtual companies), practical life (e-health services) and leisure. It is also providing new opportunities in terms of participation of citizens by making it easier to express opinions and points of view. However, these positive advances go hand-in-hand with new concerns: mass use of the Internet means that steps have to be taken against new criminal behaviour, pirating, and questions of protection of personal data and intellectual property. Moreover, the information society may contribute to the marginalisation of certain sections of society by emphasising social inequalities.

Source: Europa Glossary, European Commission.

http://europa.eu/scadplus/glossary/information_society_en.htm

Older Senior Citizens / The “Fourth Age”

Older seniors are the group of people who are traditionally called the elderly. They are believed to be in the phase of their lives during which their physical, mental and social capacities and contributions to society gradually fade away. While we previously believed that people entered this group at retirement, we have now learned that this group consists of people in their eighties and nineties. We speak of the “older seniors” or the “fourth age.”

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The Fourth Age is characterized as a period of increasing frailty. Frailty is not just a series of diseases, but more the natural ageing process linked to becoming weaker and losing the possibility to overcome diseases and social problems. Thus old age is also characterized by a number of medical and social problems. Old age ends with the death of the person.

Source: Text Analysis Report (V2.10), "Technology and the Elderly in the Popular Media," SENIOR project, Deliverable D1.2, pg 9. <http://globalseci.com/wp-content/uploads/2009/02/d12-text-analysis-report2.pdf>

The term "middle age" was a concept popularised in the 1960s to indicate a grey area between adulthood (30-40 years old) and retirement (affecting those 65 years and older). "Extended middle age" is now the term commonly used to indicate a continuation of this period but a change in circumstances (e.g., retirement). During extended middle age, the main physical and mental abilities remain unaltered though the person is ageing and gradually forced into the role of the senior citizen. As such, he or she is better profiled in terms of desired activity patterns, job opportunities, desired life habits, desired conditions rather than medical and social needs.

The "fourth age" applies to older senior citizens, people in their eighties and nineties. In this period, practically all people show substantial losses in physical mobility and cognitive functioning.

Source: "Ethics of e-Inclusion of Older People," SENIOR Discussion Paper No. 2008/01, April 2008, <http://www.cssc.eu/public/Ethics%20of%20e-Inclusion%20of%20older%20people%20-%20Bled%20%20Paper.pdf>

Prevention

This is aimed at promoting health, preserving health and restoring health when it is impaired and to minimize suffering and distress.

There are various levels of prevention: primordial prevention: Actions and measures that inhibit the emergence and establishment of environmental, economic, social and behavioural conditions, cultural patterns of living, etc., known to increase the risk of disease.

Primary prevention: The protection of health by personal and community-wide effects. Primary prevention involves measures provided to individuals to prevent the onset of a targeted condition.

Secondary prevention: Measures that identify and treat asymptomatic persons who have already developed risk factors or preclinical disease, but in whom the condition is not clinically apparent. These activities are focused on early case finding of asymptomatic disease that occurs commonly and has significant risk for negative outcome without treatment.

Tertiary prevention: A process aimed at limiting the negative effects of an established disease.

Source: A Glossary of Terms for Community Health Care and Services for Older Persons, Ageing and Health Technical Report, Volume 5, WHO Centre for Health Development, 2004.

http://whqlibdoc.who.int/wkc/2004/WHO_WKC_Tech.Ser._04.2.pdf

Quality of Life

Quality of life is "an individual's perception of his or her position in life in the context of the culture and value system where they live, and in relation to their goals, expectations, standards and concerns. It is a broad ranging concept, incorporating in a complex way a person's physical health, psychological state, level of independence, social relationships,

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personal beliefs and relationship to salient features in the environment.” (WHO, 1994). As people age, their quality of life is largely determined by their ability to maintain autonomy and independence.

Source: Active Ageing: A Policy Framework. A contribution of the World Health Organization to the Second United Nations World Assembly on Ageing, Madrid, Spain, April 2002.

http://whqlibdoc.who.int/hq/2002/WHO_NMH_NPH_02.8.pdf

The product of the interplay between social, health, economic and environmental conditions which affect human and social development. It is a broad-ranging concept, incorporating a person’s physical health, psychological state, level of independence, social relationships, personal beliefs and relationship to salient features in the environment. As people age, their quality of life is largely determined by their ability to access needed resources and maintain autonomy and independence.

Source: A Glossary of Terms for Community Health Care and Services for Older Persons, Ageing and Health Technical Report, Volume 5, WHO Centre for Health Development, 2004.

http://whqlibdoc.who.int/wkc/2004/WHO_WKC_Tech.Ser._04.2.pdf

Silver Economy

This term has been traditionally considered under very restricted view referring to the business of providing services to the elderly. However, this view of elderly as just “consumers” with financial abilities is quite limited. Another view of the term silver economy refers to elders’ direct contribution and value creation in the society.

Source: Draft Roadmap, ePAL Project 215289, Seventh Framework Programme project, Deliverable 6.1, pg. 30, July 2009. <http://www.epal.eu.com/xstandard/docs/ePALd6.1.pdf>

Today's senior people are healthier, more mobile and qualified, and dispose of more purchasing power than any generation before. Their needs and expectations are diverse, but all of them aspire a high quality of life and high quality services that meet their individual wants. This leads to increasing demand for new products and services - a growing market which more and more entrepreneurs discover. At the same time, new opportunities for qualified jobs develop. A wide variety of sectors can benefit from this new “Silver Market” -amongst them construction and housing, public services, health and leisure, sports, culture, tourism, new media, telecommunications, financial services. This also refers to SMEs which are mostly active in a regional context. It can be expected that the development and implementation of such a "Silver Economy" will have a positive impact on economic growth, jobs, employment and competitiveness in European regions.

Source: Green Paper “Confronting demographic change: a new solidarity between the generations,” Consultation process Opinion expressed by: ú Ministry for Generation, Family, Women and Integration of North Rhine-Westphalia (Germany), as lead partner of the Silver Economy Network of European Regions, SEN@ER (www.silvereconomy-europe.org), pp. 1-2,

http://ec.europa.eu/employment_social/social_situation/responses/e457863_en.pdf

Social Alarm

Social alarm refers to a reliable communications system and network including portable equipment which allows a person in distress to initiate a call for assistance and to send an alarm by a simple manipulation.

Source: Tender Specifications, Coping with an ageing population – Learning from good eHealth and telecare practices (Smart 2010/0023).

http://ec.europa.eu/information_society/eeurope/i2010/docs/studies/ts-ehealth_2010.pdf

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Social alarms can be defined as devices (with or without some intelligence) located in the home which, when activated, facilitate communication with a responder and the sending of information, relevant to the user's well-being. They may be part of hard-wired systems or individual devices referred to as carephones or dispersed alarms.

Source: Fisk, Malcolm J., *Social Alarms to Telecare: Older people's services in transition*, The Policy Press, Bristol, UK, 2003, p. 4.

Social Computing

A set of open, web-based and user-friendly applications that enable users to network, share data, collaborate and co-produce content.

Source: Kristi Ala-Mutka, et. al., "The Impact of Social Computing on the EU Information Society and Economy", 2009.

The notion of social computing is defined by IPTS (The Institute for Prospective Technological Studies) as "a recent development of the world wide web, and refers to a new set of ICT applications and to a specific new attitude in using them". In terms of ICT applications, it covers blogs, podcasts, wikis, social networking websites, massive online role-playing games, as well as search engines, auction websites and peer-to-peer services. In terms of attitudes, it focuses on the proactive role of users in participating in the services delivered, and refers to concepts such as user-generated content, user participation, empowerment and long-tail-type network effects created by participative architectures harnessing collective intelligence.

Source: Public Services 2.0: The Impact of Social Computing on Public Services, JRC Scientific and Technical Reports, European Commission, 2009. <http://ftp.jrc.es/EURdoc/JRC54203.pdf>

Social Exclusion

Social exclusion is a social process, built on social inequalities and leading to the marginalisation of individuals and groups as regards societal goals. Social inequalities (related to a series of factors: gender, ethnicity, age, education, employment, income, professional status, housing, family structure, disability, geographical location, etc.) are the basic roots of social exclusion. Exclusion is defined in relation to a goal: in the case of this project, the development of the information society / knowledge society (digital exclusion or e-exclusion). Exclusion occurs when individuals or social groups are left behind or do not benefit from equal opportunities to achieve societal goals.

Source: Analytic Framework – eInclusion and eAccessibility Priority Issues, eInclusion@EU Project: Strengthening eInclusion & eAccessibility Across Europe, Deliverable 1.1, October 2004.

http://www.empirica.com/themen/einclusion/documents/eInclusion_Analytic-framework.pdf

Social Inclusion

The process which ensures that those at risk of poverty and social exclusion have the opportunities and resources necessary to participate in economic and social life, securing a standard of living that is considered acceptable in the society in which they live.

Source: Social Protection, Social Inclusion Glossary: Key terms explained, European Commission, http://ec.europa.eu/employment_social/spsi/docs/social_inclusion/glossary_en.pdf

Social inclusion is not only the symmetric counterpart of social exclusion, aiming at including those who are at risk of exclusion. The process of social inclusion relies on three dimensions:

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1. Overcoming the disadvantages resulting from social inequalities, in order to avoid exclusion processes.
2. Harnessing the opportunities offered by the targeted societal goals, in order to reduce existing inequalities and improve the quality of life in society.
3. Fostering participation and empowerment in upcoming societal processes, in order to improve individual and collective expression, civic commitment and democratic participation.

Source: Analytic Framework – eInclusion and eAccessibility Priority Issues, eInclusion@EU Project: Strengthening eInclusion & eAccessibility Across Europe, Deliverable 1.1, October 2004.

http://www.empirica.com/themen/einclusion/documents/eInclusion_Analytic-framework.pdf

Following the introduction under Article 136 and 137 EC by the Amsterdam Treaty of the fight against social exclusion among the social policy provisions, the European Council of Lisbon in March 2000 recognised that the extent of poverty and social exclusion was unacceptable. Building a more inclusive European Union was thus considered as an essential element in achieving the Union's ten year strategic goal of sustained economic growth, more and better jobs and greater social cohesion. The Lisbon Council agreed to adopt an Open Method of Coordination in order to make a decisive impact on the eradication of poverty and social exclusion by 2010.

Through the EU Social Protection and Social Inclusion Process, the European Union coordinates and encourages Member State actions to combat poverty and social exclusion, and to reform their social protection systems on the basis of policy exchanges and mutual learning. As such, it underpins the achievement of the Union's strategic goal of sustained economic growth, more and better jobs, and greater social cohesion by 2010.

Source: European Commission web site,

http://ec.europa.eu/employment_social/spsi/spc_policy_topics_en.htm

Smart textiles

Textiles that can sense and react to environmental conditions or stimuli from thermal, chemical, electrical, mechanical, or magnetic sources

Passive smart textiles

For sensing environmental conditions

Technology for Social Inclusion

Technology for social inclusion deemphasizes the notion of bridging divides and instead looks at the broader goal--achieving social inclusion for all--and then considers the role that technology can play within that. Social inclusion refers to the extent that individuals, families, and communities are able to fully participate in society and control their own destinies, taking into account a variety of factors related to economic resources, employment, health, education, housing, recreation, culture, and civic engagement.

Source: Raven, Francis, Technology for Social Inclusion: An [online] Interview with Mark Warschauer, Assistant Professor of Education and of Information and Computer Science, University of California, Irvine.

http://www.ics.uci.edu/community/news/articles/view_article?id=40

Tele-care

Tele-care is the provision of social care from a distance supported by means of telecommunications and computerised systems. Tele-care usually refers to equipment and detectors that provide continuous, automatic and remote monitoring of care needs,

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emergencies and lifestyle changes in order to manage the risks associated with independent living.

Source: Tender Specifications, Coping with an ageing population – Learning from good eHealth and telecare practices (Smart 2010/0023).

http://ec.europa.eu/information_society/eeurope/i2010/docs/studies/ts-ehealth_2010.pdf

Tele-care can be defined as the 'continuous, automatic and remote monitoring of real-time emergencies and lifestyle changes over time in order to manage the risks associated with independent living'.

Source: Empirica, "Assessment of the Senior Market for ICT. Seniorwatch 2006 – Progress and Developments", April 2008.

http://ec.europa.eu/information_society/activities/einclusion/docs/swa2finalreport.pdf

Tele-health

Tele-health can be defined as the 'delivery of healthcare at a distance using electronic means of communication -usually from service user to clinician'. An example might be a service user measuring their vital signs at home and this data being transmitted via a tele-health monitor to a clinician.

Source: Empirica, "Assessment of the Senior Market for ICT. Seniorwatch 2006 – Progress and Developments", April 2008.

http://ec.europa.eu/information_society/activities/einclusion/docs/swa2finalreport.pdf

Tele-medicine

Tele-medicine is the provision of healthcare services, through the use of ICT, in situations where the health professional and the patient are not in the same location. It involves secure transmission of medical data and information, through text, sound, images, or other forms needed for the prevention, diagnosis, treatment and follow-up of patients.

Source: Tender Specifications, Coping with an ageing population – Learning from good eHealth and telecare practices (Smart 2010/0023).

http://ec.europa.eu/information_society/eeurope/i2010/docs/studies/ts-ehealth_2010.pdf

Tele-monitoring

Tele-monitoring is a telemedicine service aimed at monitoring the health status of patients at a distance. Data can be collected either automatically through personal health monitoring devices or through active patient collaboration (e.g. by entering weight or daily blood sugar level measurements into a web-based tool). Data, once processed and shared with relevant health professionals, may be used to optimise the patient's monitoring and treatment protocols. Tele-monitoring is particularly useful in the case of individuals with chronic illnesses.

Source: Tender Specifications, Coping with an ageing population – Learning from good eHealth and telecare practices (Smart 2010/0023).

http://ec.europa.eu/information_society/eeurope/i2010/docs/studies/ts-ehealth_2010.pdf

Tele-training

Tele-training is the provision of training and education, through the use of ICT, in situations where the health professional and the patient or their caregivers are not in the same location. In this context, professionals train patients or carers on healthy habits and provide relevant information about their illness and how it should be managed. The objective of this intervention is to allow the patient to be well informed and able to self-

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manage their conditions and to help the care giver provide a better care service. Usually, this empowerment process is supported by professionals.

Source: Tender Specifications, Coping with an ageing population – Learning from good eHealth and telecare practices (Smart 2010/0023).

http://ec.europa.eu/information_society/eeurope/i2010/docs/studies/ts-ehealth_2010.pdf

Universal Access / Universal Accessibility

Universal Access implies the accessibility and usability of information and telecommunications technologies by anyone at any place and at any time and their inclusion in any living context. It aims to enable equitable access and active participation of potentially all people in existing and emerging computer-mediated human activities, by developing universally accessible and usable products and services and suitable support functionalities in the environment. These products and services must be capable of accommodating individual user requirements in different contexts of use, independent of location, target machine, or runtime environment.

The terms Universal Access and Universal Accessibility are often used as an indication of the right of all citizens to be granted availability of all information and communication facilities in the Information Society. This can be partially obtained by making them accessible to all citizens. Therefore access and accessibility are used as an approach toward eInclusion.

Source: Pier Luigi Emiliani, et. al., “Report on the impact of technological developments on eAccessibility”, Feb 2008. http://www.dfaei.org/docs/D2.1_Commission.pdf

Universal access requires design methodologies and techniques that permit systematic and cost-effective approaches to accommodating all users, fulfilling the design-for-all principles.

Source: C. Stephanidis, “User Interfaces for All: New Perspectives into HCI,” in User Interfaces for All—Concepts, Methods and Tools, C. Stephanidis, Editor, Lawrence Erlbaum Associates, Mahwah, NJ (2001).

Universal Design

A system whereby programs, services, tools, and facilities are designed to be usable by the widest possible range of users, taking into account a variety of abilities and disabilities. At its optimum, Universal Design is a broad-spectrum solution that strives to help everyone, not just people with disabilities.

Universal Design emerged from the concepts “barrier-free,” “accessible design,” and “assistive technology.” Examples of universally designed environments include automatic doors, buildings with ramps, and curb cuts.

Source: Panella, Nancy Mary (compiled by), Library Services to People with Special Needs Section – Glossary of Terms and Definitions, International Federation of Library Associations and Institutions, 2009.

<http://www.ifla.org/files/hq/publications/professional-report/117.pdf>

Vulnerable Groups

Groups that experience a higher risk of poverty and social exclusion than the general population. Ethnic minorities, migrants, disabled people, the homeless, those struggling with substance abuse, isolated elderly people and children all often face difficulties that can lead to further social exclusion, such as low levels of education and unemployment or underemployment.

Source: Social Protection, Social Inclusion Glossary: Key terms explained, European Commission,

http://ec.europa.eu/employment_social/spsi/docs/social_inclusion/glossary_en.pdf

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Younger Senior Citizens

Younger senior citizens' actual physical and mental conditions put them closer to the middle-aged than to the older senior citizens group. The dramatic demographic change, with an increase of 10 or 20 years in life expectancy, achieved in the last few decades, has largely outpaced cultural and societal conventions about ageing and notions about who are the aged. People who would be considered chronologically older according to a standard description are actually biologically and psychologically middle-aged. Consequently, younger senior citizens face a twofold challenge. First, they have to deal with a change in their social status (e.g., as a retiree, grandfather or whatever) which is not consistent with their actual physical and mental conditions. Second, they have to face age related exclusion, i.e., they have to prevent their being socially marginalised due to their age.

Source: "Ethics of e-Inclusion of Older People," SENIOR Discussion Paper No. 2008/01, April 2008, <http://www.cssc.eu/public/Ethics%20of%20e-Inclusion%20of%20older%20people%20-%20Bled%20%20Paper.pdf>

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