PACITA
Collaborative project on mobilisation and mutual learning actions in European Parliamentary Technology Assessment

Grant Agreement no. 266649
Activity acronym: PACITA
Activity full name:
Parliaments and Civil Society in Technology Assessment

Deliverable D6.3
Deliverable Title: "Policy Status Overview"

Start date of Activity: 1 April 2011 Duration: 4 years

Authors: Dr Ciara Fitzgerald

Organisation name of lead beneficiary for this deliverable: University College Cork

PACITA Partners

Teknologirådet – Danish Board of Technology (DBT)
Toldbodgade 12, DK-1253 Copenhagen, Denmark,
Contact: Anders Jacobi
aj@tekno.dk
www.tekno.dk

Karlsruhe Institute of Technology (KIT)
Kaiserstr. 12, 76131 Karlsruhe, Germany
Contact: Leonhard Hennen
leonhard.hennen@kit.edu
www.kit.edu

Rathenau Insituut (KNAW-RI)
Postbus 95366, 2509 CJ Den Haag, the Netherlands
Contact: Geert Munnichs
pacita@rathenau.nl/g.munnichs@rathenau.nl
www.rathenau.nl

Teknologiraadet – Norwegian Board of Technology (NBT)
Kongens gate 14, 0153 Oslo, Norway
Contact: Marianne Barland
marianne.barland@teknologiradet.no
www.teknologiraadet.no

The Institute of Technology Assessment (OEAW/ITA)
Address: Strohgasse 45/5, A-1030 Vienna
Contact: Pacita-ITA team
pacita.ita@oeaw.ac.at
www.oeaw.ac.at

Applied Research and Communications Fund (ARC Fund)
5 Alexander Zhendov str., 1113 Sofia, Bulgaria
Contact: Zoya Damianova
zoya.damianova@online.bg
www.arcfund.net

Instituto de Tecnologia Química e Biológica- Institute of Technology of biology and chemistry (ITQB)
Avenida da Republica, Estacao Agronomica Nacional,
Oeiras, 2784-505, Portugal
Contact: Mara Almeida
marasilvalmeida@gmail.com
www.itqb.unl.pt/

The Catalan Foundation for Research and Innovation (FCRI)
Pg. Lluís Companys, 23, ES-08010 Barcelona, Spain
Contact: Belén López
belen.lopez@fundaciorecerca.cat
www.fundaciorecerca.cat

Swiss Centre for Technology Assessment (TA-SWISS)
Brunngasse 36, CH-3011 Berne, Switzerland
Contact: Danielle Bütschi
danielle.buetschi@ta-swiss.ch
www.ta-swiss.ch

Association Knowledge Economy Forum (KEF)
Galvydzio 5/96, LT-08236, Vilnius, Lithuania
Contact: Edgaras Leichteris
edgaras@zef.lt
www.zef.lt

Technology Centre ASCR
Ve Struhach 27, 160 00 Prague 6
Contact: Lenka Hebakova
hebakova@tc.cz
www.tc.cz

Scientific and Public Involvement in Risk Allocations Laboratory (SPIRAL)
Boulevard du Rectorat 7/29, B31, 4000 Liège, Belgium
Contact: Pierre Delvenne
pierre.delvenne@ulg.ac.be
www.spiral.ulg.ac.be/

University College Cork (UCC)
Western Road, Cork, Ireland
Contact: Ciara Fitzgerald
PACITA@ucc.ie
www.ucc.ie

Secretariat of the Hungarian Academy of Sciences (HAS-SEC)
Nádor utca 7, H-1051 Budapest, Hungary
Contact: Katalin Fodor
fodor.katalin@titkarsag.mta.hu
www.mta.hu

TABLE OF CONTENTS

1 EXECUTIVE SUMMARY

This study provides a wide-ranging analysis of European policy relating to telecare and tele-health. The purpose of the document is to present an overview of policy measures related to telecare and home-based tele-health in the European countries/regions represented in the PACITA consortium. The study will be presented at the Stakeholder workshop, the national Scenario Workshops and the Policy Conference in Brussels.

European countries are all facing an ageing population and the challenges and opportunities this brings. This study explored the policy objectives of 13 European countries; Austria, Belgium, Bulgaria, Czech Republic, Denmark, Germany, Hungary, Ireland, Lithuania, Norway The Netherlands, Portugal, Spain and Switzerland. Ageing societies in western countries lead to more people with chronic health conditions and in need of care. Recent developments in technology have led to more devices supporting elderly people. They provide health care and enable elderly people to maintain their autonomy and allow them to live independently for a longer period of time. These technologies are subsumed under the term telecare. Trials have shown that hospital admissions and mortality can be reduced by such devices. Telecare may therefore unburden the health care system and serve at the patients' best interest in allowing them to live for a longer period of time independently and increase quality of life.

The main goal of this study is to give an overview of existing policy measures related to telecare and home-based telemedicine in the European countries and regions. It will include brief information on demographic trends, policy levels, and the relative mix of private, public and family care, as well as specific policies relating to telecare and tele-health, ranging from competence building and support programmes to infrastructures, incentives and rights. The study results will be used for a Stakeholder workshop as well as ten National Scenario workshops within the PACITA (Parliaments and Civil Society in Technology Assessment) Project. The project has the goal to provide insight and experience in technology assessments for stakeholders from European countries that currently don't have parliamentary technology assessment institutions. A template was created and distributed to each partner to capture consistent data on each country. The categories asked for were as follows; Definitions, National Demographic Trends, National policies, Policy Enablers, Policy Enactors, Actor Involvement Incentives, Service Providers, and finally Risk Analysis. Extensive desk research was conducted by each partner. To complement this, policy experts were contacted for additional information that was not easily accessible via secondary sources. The richness of information differed from each country, however this is not problematic as it reflects the level of policy sophistication in the area of telecare and tele-health. Therefore there are some apparent nuances in the approaches but this adds to the complexity of the findings.

General Findings

All countries are facing the challenge of an ageing population. However the response at policy level is varied. The findings provide a basis for commentary and serve to promote awareness of the policy status in telecare in Europe, as represented by the partner countries.

Definitions: There are common interpretations of telecare and telemedicine. However they can be used interchangeably in some countries. There are a number of interrelated concepts such as Ambient Assisted Living, eHealth, Assistive Technology, ICT in Health, Welfare Technology and Telehealth.

National Demographic Trends: The common trends are as follows; Increase in life expectancy, increase in dementia and other age related illnesses, increase in the number of people with chronic diseases, rising cost of care and increased demand for independent living solutions, larger part of society will be represented by seniors (group of 70+) and finally, increased desire for living at home.

National policies: 1993 was the earliest policy initiative in Austria whereby a tax funded long term care system which is independent from the income was introduced. All countries have policies in place, to varying levels of comprehensiveness. Areas of interest include Framework for security, Strategies for opportunity for Innovation, Reactive to fulfilments of regulation and Setting out intentions.

Policy Enablers: Large number of government departments involved including, Environment and public health, Research and Education, Social Affairs and Health. It is recognised as a complex policy making in this area. There is also an additional dimension of regional vs national policy enhances complexity, for example in the case of Belgium. In most countries there is evidence of fragmented, uncoordinated decision making and implementation in the telecare domain with no central responsibility for policy making.

Policy Enactors: There is a mix of non profit, voluntary, and non governmental agencies. Their roles are varied and include raising awareness, Professional groups, Illness support groups e.g. Parkinson society and dissemination of research. #Any similarities / differences?

Actor Involvement Incentives: There is significant variability in incentives offered. In some countries there is no recognised decided incentive however there is an umbrella of social services grants for elderly. Others offer a government payment schemes for telecare technologies, as present in Ireland and Spain. Others offer model villages as found in Germany. Others offer research funding to further explore this space. In summary, incentives are in embryonic stage of development, and are an area to be further maximized.

Service Providers: Private firms are dominant here. There are both service and product offerings. There are a growing number of startups in this field and it is particularly common area found among spinouts from universities.

Risk Analysis: A multitude of types of risks were identified including Privacy Risk, Social risk, Technology Risk, Legal Risk and Financial Risks. The most common privacy risks were concerned with legal rights and ethical considerations not being fully

addressed. The Social Risk of isolation was considered and the question of forced or voluntary participation was raised. The Technology Risk of how to secure data storage and transmission of sensitive health data were identified. Also the polarized dilemma of technology driven innovation versus user need innovation was questions and the ramifications of this debate. Also Legal Risks were articulated; specifically the medical responsibility was questioned in the technology versus practitioner onus of responsibility debate in the time of malpractice. In the case of risk of malfunction of technical devices, the question of liability in such cases was considered. The legal risk of the lack of legislation and regulation in this space was also recognised.

Contribution

The report will be of interest to TA practitioners, policy makers, and society in general as we present an overview of policy measures related to telecare and home based telemedicine in the European countries/regions represented in the PACITA consortium. The analysis based on cross case comparison of individual country data collection showcases common findings and some nuances which will stimulate stakeholder comments and discussion at the policy conference and among the general PACITA audience.

Acknowledgments

- We would like to thank the following;
- All of the PACITA partners who took considerable time and effort to gather and compile data.
- Stakeholders, whom attended the stakeholder workshop in Bern October 2013 for their valuable comments.
- The experts who contributed to this study

2 INTRODUCTION

This section outlines definitions of telecare and home-based telemedicine, as expressed in national policy documents. The objective is to explore if there is synergy in the definitions of the core concepts of telecare among key policy stakeholders. The section below outlines each of the definitions found in each individual partner countries.

Key Findings:

- There is a multitude of definitions used in a policy context.
- There are not only nuances amongst countries but within countries, for example terminology varies from those used in official government documents and by those by national stakeholders involved in the scheme.
- The regulatory framework varies for telecare and telemedicine products. Therefore telecare products are comparable with ambient assisted living (AAL) products. Whereas, telemedicine products have to undergo much stricter quality assessments and they underlie a stringent regulatory framework.
- In many cases the terms teleheathcare, telehealth, telemedicine and telecare are treated as interchangeable generic terms to describe the use of telecommunications to deliver healthcare services at a distance.

AUSTRIA

Telemedicine services are defined as the therapy (incl. diagnosis) of a patient without the patient`s presence at the location of the service provision (medicine at a distance). This service is achieved by the usage of electronic support systems (telecommunication and informatics). These support systems are intended to supplement the treatment of the patient. The major aim of telemedicine services is that the expertise comes to the patient and not the opposite way around. Furthermore this allows it that the access to medical services is independent from the location (domicile) of the patient.

telemedicine includes following areas:

- teleradiology, telepathology and other tele-diagnostic services
- teleconsulting, telesurgery
- tele-Home Monitoring
- teletriage

Possibilities for a quicker therapy due to a better preparation of the doctor through an ahead receive of relevant diagnostic findings.[1]

AAL (Ambient Assisted Living) refers to concepts, products, services, technologies and systems, which use ICT´s to assist older adults and persons with special needs in their daily life. The overall aim of AAL is to raise the life quality and autonomy of the target group. This is achieved by means of ICT through the provision of a sensitive and adaptive living environment. Their usage should be intuitive and the AAL system should adept itself to the user and not the other way around. [2]

BELGIUM

Stabilized definitions of the concepts of telecare and home-based telemedicine were not identified in regional policy documents. Nevertheless, the 2013-2018 e-Health action plan of the e-Health platform set up in 2005 on a national scale requires the Walloon government to undertake a national terminology policy. Each sub-state entity, including Wallonia, is therefore asked to define its e-health strategy. The main goal is to create a coherent nomenclature and to increase the semantic interoperability in the context of electronic communication between the federal level, the regional level and the community level. The Walloon strategy is presently being written but has not been yet accepted by the government. We can hence expect to see defined terminology and strategy for the Walloon Region in a close future. However, it is not exact to say that existing definitions of telecare and telemedicine have not been provided in Wallonia.

Whereas the Walloon public authorities are presently working on the elaboration on operationalized definitions, they are influenced by other input provided by stakeholders. In this respect, it is worth mentioning a Belgian stakeholder called AGORIA, the federation of the technological industries, which has already defined these concepts in a recent document.

Telehealth is defined as the services and systems connecting both patients and health care providers. It provides assistance in the diagnosis, the monitoring, the management, and in strengthening the role of a patient suffering from a chronic disease.

[1] *Based upon the definition of working group 7 of the eHI (eHealth Initiative) in the "Draft for the Austrian e-Health strategy* http://bmg.gv.at/cms/home/attachments/8/5/3/CH1043/CMS1156950437801/entwurf_fuer_eine_oesterreichische_ehealth_strategie.pdf

[2] Position paper on AAL (Ambient Assisted Living) of the eHI (eHealth Initiative) 2012/2013http://ehi.adv.at/fileadmin/user_upload/adv_author/pdfs/Positionspapiere2013/2013-04-03_Positionspapier_eHI-AG_AAL_v1.0.pdf

Telemedicine enables remote health care services through ICT (information and communication technologies). It requires the secure exchange of medical or social data via texts, sounds, images, videos or any other necessary means for an optimal care of a patient. Telecare consists of the systems and the services implemented within the framework of social services. It is mainly used to monitor on a daily basis individuals depending on external help.[3]

BULGARIA

Telemedicine refers to medicine, telecommunications, information technologies and education for the purposes of diagnostics, treatment, consultation, and training. It permits the receipt of qualified medical care at any place and at any time, and is essentially medicine practiced remotely.[4] E-health refers to a fast evolving domain whereby medical informatics, public healthcare, healthcare service and information delivery converge based on the utilization of contemporary IT.[5]

CZECH REPUBLIC

eHealth is defined as the application of information and communication technologies across the whole range of processes and functionalities, affecting quality and efficiency and accessibility of health care. eHealth includes tools and solutions, including products, systems and services that are beyond the standard internet applications. eHealth is essentially a tool for health management, medical devices, and health care experts of different kind as well as for public and personalized health information systems for patients and citizens and health insurance payers.[6]
Telemedicine is a pioneering activity of computerization of health care, which has been on-going for many years. It is based on the principle of sharing medical knowledge for diagnostic, therapeutic and educational purposes. Practically, it is based on on-line and off-line network transport of medical data including tele-consultation and tele-navigation based videoconference transmissions point-to-point or point-to-multipoint.[7]
Assistive Technology in Healthcare targets ageing population and impaired persons, which are profiting from the recent technology enabling them a better and safer life in home environment, fostering rehabilitation, monitoring after operation treatment. Possibility of re-inclusion back into professional life so as improvement of home and social care tends directly towards increased economic efficiency.[8]

DENMARK

"Telemedicine means that a health-person with the use of video, pictures, sound and measure-readings involves a specialist who is not situated where the patient is, in diagnostics and treatment". [9] Another definition is "clinical health services provided remotely by using information and communication technology".[10] A final definition used is 'Digital supported healthcare independent of time, place and space, delivered from distance and with potential of creating significant health profit or value.[11]

GERMANY

There is no official definition of telecare in German policy documents. With regard to chronic diseases the term "telemedicine" is used. Distant care of elderly people is rather discussed in the context of the (technically driven) concept of "ambient assisted living": assistance systems based on microsystems and communication technology which support the elderly increasingly in their everyday life through intelligent systems and services to allow an independent life at home and communication with the social environment.[12] Definition telemedicine: Telemedicine enables diagnostic, consultation and emergency medical services using audiovisual communication technologies despite physical separation. In the future, telemedicine will be an important part of medical care, particularly for rural areas.[13]

HUNGARY

Telemedicine is an application of telecommunications and information technologies in order to develop healthcare services, when significant distances must be bridged between participants. (ICT & Ageing) Telecare is regarded as a remote monitoring system

[3] AGORIA
[4] Bulgarian Academy of Sciences, Institute for Space Research and Technologies
[5] National Strategy for the Integration of e-health in Bulgaria (2007)
[6] Legislative intentions of the eHealth Projects (Version 1.7) , the Ministry of Health of the Czech Republic, 2008
[7] Legislative intentions of the eHealth Projects (Version 1.7) , the Ministry of Health of the Czech Republic, 2008
[8] MEDTEL 2013 - International Conference
[9] Danish Health and Medicines Authority, 2013 (National Board of Health)
[10] Danish Health and Medicines Authority, 2010 (National Board of Health)
[11] The Danish Society for Clinical Telemedicine, 2011
[12] AAL-Definition: Federal Ministry of Education and Research (without year: Assistance systems the serving the elderly) http://www.aal-deutschland.de/deutschland/bekanntmachung-altersgerechte-assistenzsysteme
[13] Federal Ministry of Health (http://www.bmg.bund.de/glossarbegriffe/t-u/telemedizin.html)

of health, based on ICT devices. Social alarms are embedded in the social care system for the 65+ population (eVita National Platform). Telemedicine is an application of telecommunications and information technologies in order to develop healthcare services, when significant distances must be bridged between participants. (ICT & Ageing).

IRELAND

There is no official definition in Irish policy documents. From review of policy documentation, the evidence is that the recognition of telemedicine and telecare is inconsistent. However Cardi defines Telecare as; the Equipment and detectors providing continuous, automatic and remote monitoring of care needs (including emergencies and lifestyle changes). Using ICT to trigger human responses or shut down equipment to prevent hazards. Devices alert to a call centre – who contact service user or nominated carers.[14] Telemedicine refers to the "use of modern technology to facilitate healthcare".[15]

LITHUANIA

Telecare is not currently defined in any policy documents. "Care" in general is defined in the Law on Health System as part of personalized care system which includes educational and prevention measures, as well as physical, psychological and social care of healthy and ill people. "Care services" are provided in healthcare institutions, private companies, social care institutions or at home. The Law also established the concept of E-Health system which includes all measures for the provision of health services by means of ICT.[16] "Telemedicine" was first broadly defined in Governmental resolution on the regulation of infrastructure for cooperation and E-health services as "provision of distant health services by aid of information and telecommunication technologies".[17] Current order of the Minister of Health on the Provision of telemedicine services narrowed down the definition to the "transfer of data for the research/analysis from one health care institution to another, evaluation and description of data and transfer back of results to the health care institution by digital means (internet or other digital form)".[18]

NORWAY

Telemedicine is the examination, monitoring, treatment and management of patients and educating patients and staff through systems that provide immediate access to expert advice and patient regardless of where patients or relevant information is located geographically.[19] Welfare technology is primarily meant as technological assistance that contributes to increased safety, security, social participation, mobility and physical and cultural activity. Welfare Technology aim to strengthen the individual's ability to fend for themselves in everyday life, despite illness and social, mental or physical disabilities. Welfare technology can also act as a support to relatives and otherwise help improve the availability of resources and quality of services. Solutions can in many cases prevent the need for services or inpatient the institution.[20] The Norwegian National Welfare Technology program distinguishes between two types of welfare technologies; *Care technology* is technology that aims to create the desired mastering of life and health and peace of mind to stay longer at home in existing housing. *Personal health technology* is technology that through the different levels of monitoring of vital functions enhances self-management, security and quality of life related to their own illness. Personal health technology is particularly relevant for people with chronic disease.[21]

THE NETHERLANDS

eHealth is defined as: The usage of new information and communication technologies and especially internet technology in order to support or enhance health and healthcare. This definition is used by leading institutions like the Dutch Healthcare Authority and Health Care Insurance Board (CVZ) and therefore also by the Ministry of Health, Welfare and Sports.[22] eHealth is defined as: Delivering care from a distance with the help of information and communication technologies, which is aimed at the care process in such a way that quality of life is enhanced.[23] Telecare (Zorg op afstand) means giving care at a distance by using information and communication technologies.[24] The concept of telemedicine does not appear in national policy

[14] www.cardi.ie

[15] http://www.imn.ie/index.php?option=com_content&view=article&id=3717:telemedicine-in-ireland&catid=57:clinical-news&Itemid=3

16 Lithuanian Law on Health System (No. I-552, 1992)

17 Governmental resolution No. 1057, 2011

18 Order of the Minister of Health No. V-116, 2014

[19] Defined by Norwegian Center for Integrated Care and Telemedicine in green paper 2011: 11, (section 7.1.3)

[20] White paper (2013:29), page 109

[21] Presentation by Program Manager Lasse Frantzen, Norwegian Directorate of Health; Caring for tomorrow - Care plan 2020. national program for development and implementation of welfare technology in the care services, February 2014.

[22] Council for Public Health and Health Care 2002

[23] The Federation of Patients and Consumer Organisations in the Netherlands (NPCF) 2008

[24] The Netherlands Court of Audit 2009

documents.
PORTUGAL
The use of telemedicine tool (teleconsultation and telemonitoring) allows the observation, diagnosis, treatment and monitoring of the user the closest as possible to the area of residence, work or even at home. [25]
SPAIN
Home-based telecare is a resource which allows its users to stay in their usual life environment and to maintain the contact with their social and family environment, avoiding in this way the uprooting and assuring the immediate assistance in personal, social and medical crisis in order to provide security and better quality of life.[26] Telecare is the remote and personalised assistance to people living in their own houses requiring some kind of help or monitoring which can be facilitated through the CIT.[27]
SWITZERLAND
"Telemedicine is a part of eHealth. Its main focus is the interaction of patients and physicians (teleconsultation) and between physicians (telekonsil) at a distance in the context of medical diagnosis and treatment. The specific feature of telemedicine consists in bridging distances by technical means of communication.",[28] [29]

[25] Ministry of Health Portugal
[26] Ministry of Health, Social Services and Equality, Spanish Government
[27] Health Department, Government of Catalonia
[28] the Swiss Federal Office of Public Health (FOPH) issued in 2007 the "Swiss eHealth strategy", which comprises this definition of telemedicine
[29] Strategie "eHealth" Schweiz.
Bundesamt für Gesundheit, Eidgenössisches Departement des Innern; Bern, 27. Juni 2007

3 NATIONAL DEMOGRAPHIC TRENDS

This section describes the trends in terms of empirical studies and explores how the trend will impact telecare and home-based telemedicine policy. Illustrations relating to this section can be found in Appendix B.

Key Findings:

The common trends amongst the countries under study were as follows;

- Increase in life expectancy.
- Increase in dementia and other age related chronic diseases.
- Rising cost of care and increased demand for independent living solutions.
- Larger part of society will be represented by seniors (Group of 70+).
- Increased desire for living at home.

In **AUSTRIA** the demographic development in Austria underlies fundamental structural changes. The group of older adults is predicted to rise at a higher rate relatively to the other groups. The main reason for this lies in the current population structure. The relatively strong birth cohorts of the 1960´s are still in employment. In 2030 these cohorts have undergone a transition to the retired population (24%). The groups of older adults at the age 80 and above are expected to grow most. In 2030, 635.000 older adults at the age of 80 and higher are estimated to live in Austria. That is 57% more than in 2010. Besides, the average life expectancy has raised continually from 72,2 years in 1990 to predicted 82,2 years for men and from 78,9 years in 1990 to predicted 86,7 years for women in 2030 (see Appendix B Table B.1). The prognoses for the demographic development in Austria, reveal a shift in the age distribution for the upcoming 20 years. One of the reasons for this is the higher life expectancy in general. Furthermore the relatively strong birth cohorts of the 1960´s are still in employment. In 2030 these cohorts have undergone a transition to the retired population, resulting in 24% of the Austrian population being at the age 64 and higher. This shift has led to the crucial question of how best to support older adults at home. Therefore the national research program called "benefit" (part of the EU Ambient Assisted Living Joint Programme AAL JP[30]), launched by the Federal Ministry for transport, innovation and technology (BMVIT), has been initiated in 2007. The calls under the "benefit" program focus on "ICT-based Solutions for the Advancement of Active Ageing" and include social inclusion, comfort and security aspects as well as activities within and outside the home environment. Furthermore interdisciplinary platforms like AAL-Austria[31] or ÖPIA[32] (Austrian platform for interdisciplinary questions in ageing) were established, in order to foster visibility of AAL themes in the public discussion (AAL - Austria) and to offer an interdisciplinary communication platform between science, public and politics (ÖPIA).

In **BELGIUM**, prospective studies concerning the Belgian population are seemingly speaking of an increase in the number of inhabitants from 11 035 948 people in 2012 to 12 748 686 people in 2060 rise of 16%). Moreover, it is nowadays expected that the Walloon population will turn from 3,55 million habitants in 2012 to 3,88 million in 2030 and to 4,19 million in 2060. Table B.2 in Appendix B reveals these trends. In 2007 the Walloon Region was composed of 567 977 people under 65 years old (i.e. 16,5 % of the population). This average is close to the global Belgian average (17%) and below the Flemish average (18%). The proportion of women under 65 years old is higher (19.3%) than the men's one (13,6 probably progress from 17% in 2010 to 21% by 2025 and to 26 % by 2050. This can be explained by birth stagnation, an increase in the life expectancy, as well as a decrease of the international immigration. Table 3 illustrates the trend. The current life expectancy lengthening outwardly appears to be a fundamental health improvement and the demographic development in Wallonia underlies fundamental structural changes. The population ageing has indeed emerged as major societal challenge policy makers will have to face in the twenty first century. This trend contributes to the ruling idea that society needs to adapt to this fast and long-lasting rise and is required to define how it will best support older people in their every day life activities at home or in a health institution. In order to respond to their needs, the government has for example adopted a political note in favor of the older people on the 29th of April 2010.%). Table B.3 in Appendix B illustrates our statement. Regarding life expectancy in the Walloon Region, in 2001 a man of 65 years old had an average life expectancy of 15,5

30 http://www.ffg.at/en/benefit

31 http://www.aal.at/

32 http://www.oepia.at/

years while the life expectancy for women was of 19,59 years.

In **BULGARIA**, life expectancy at birth in Bulgaria has been steadily rising in the past decades. While in the mid-20th century it was just above 62 years (both sexes combined), in 2010 the life expectancy at birth in Bulgaria reached 73.4 years. The projections of the UN, Department of Economic and Social Affairs, show that in 2030 the life expectancy in the country, assuming medium fertility, will rise to above 75 years; in 2050, it is expected to be more than 78 years. Compared to Western Europe, life expectancy at birth is still significantly lower in Bulgaria. Until 2050, the expected rate of increase of longevity in Bulgaria is relatively the same as in the majority of the other EU countries. The other indicator which determines the rate of ageing of the population in Bulgaria is the rate of fertility in the country. The fertility rate, or, the average number of children a woman would give birth to over her lifetime, in 1950 in Bulgaria was 2.53. In 1980, it was 2.02 and until 2010 it declined to 1.43 children per woman. The trend of ageing of the population in Bulgaria is demonstrated also by the rise of the median age in the country. In 1980, the median age in Bulgaria was 34.2 years. Until 2010, it rose to 42.4 years. The projections of the UN Department of Economic and Social Affairs show that the median age in 2030 will be around 46 years and in 2050 – 48 years. Dividing the population into 3 major age groups (0-14, 15-64 and 65), the country's ageing index can be calculated. This is the ratio of the number of elderly persons of an age when they are generally economically inactive (aged 65 and over) to the number of young persons (from 0 to 14). In the mid-20th century, the share of persons aged 0-14 was almost four times higher than the share of the persons of age above 65 years. At the end of the 1990s for the first time in the history of Bulgaria the persons aged above 65 years outnumbered children below 15 years of age. In 2010, the number of older people in the country was already almost 30% higher than the number of children below 15. In 2050, the number of older people (65+) is expected to be twice the number of children (0-14).[33] The share of the elderly persons (above 65) of the total population in Bulgaria in 2010 was slightly over 18%. Thus, approximately 1 out of 5 persons in Bulgaria in 2010 was over 65 years of age. In 1980, this ratio was just above 11%. The projections for the future suggest that in 2030 the ratio will be slightly less than 21% and in 2050 it is expected to rise to almost 26%. In a comparative perspective Bulgaria ranks as one of the most rapidly ageing countries worldwide. In 2009, the World Bank (REF) ranked Bulgaria fifth in the world according to the share of population aged 60 or over. The increasing number of elderly persons as percentage of the total population implies that the country's healthcare system will have to deal with increasing number of cases of chronic diseases, for example, diabetes, arthritis, congestive heart failure and dementia as well as loss of function and independence. Thus, the demand for long-term care services will grow significantly. As suggested by researchers, this might lead to increasing costs of the country's healthcare system. Redesigning service delivery with the help of new technologies will be crucial for coping with the increasing number of the elderly persons in Bulgaria. Telecare has the potential to reduce the costs for monitoring and care provided to older people and, thus, to mitigate the rising costs of the health care systems of the affected countries. Bulgaria is one of the countries with greatest difference in the proportion of elderly persons living in rural areas compared to those living in urban areas. As indicated in the World Population Ageing Report, published in 2009[34] the share of elderly people (above 65) in the rural areas in Bulgaria is 15 to 18 percentage points higher than in the urban areas. In 2005, around ¼ of the population living in rural areas in Bulgaria was above 60 years of age. The great shortage of personnel and healthcare facilities in remote rural areas impede the proper monitoring, diagnostics and treating elderly persons living in these areas. Developing and implementing telecare services in remote areas can significantly improve the accessibility and quality of the healthcare services provided to the rural population. Another demographic indicator that affects the availability of services provided to elderly persons is the participation of women in the labour market. Eurostat data suggests that the employment rate of women aged 20-64 in Bulgaria rose with 10 percentage points between 2000 and 2012 (from 50.7 in 2000 to 60.2 in 2012). The number of emigrants from Bulgaria has been and is expected to remain high in the future according to data on net migration of the UN Department of Employment and Social affairs. Currently, the net migration rate is around -1.4 persons. It is, however, expected to remain negative and increase to -2 persons to 2050. Increased participation of women in the labour market as well as high emigration from the country implies decreasing availability of potential carers within

[33] (Data source: United Nations, Department of Economic and Social Affairs).

[34] (UN, Department of Economic and Social Affairs)

families. Thus, the demand for services provided by social workers and medical personnel will go up as more and more elderly persons are left on their own in their homes. Telecare services will be highly beneficial to deal with this trend.

In **CZECH REPUBLIC**, in general, people in the Czech Republic are living longer than previous generations. In 1960s, average life expectancy for men was 67.5 years and for women 73.3 years. Today, average life expectancy for men in the Czech Republic is 75.0 years and for women 81.1 years[35].The crucial question of how best to support frailty and fall protection of the senior citizens and their careers at home. Older people households are becoming more important to the national economy. One-third of all private households are pensioner households.[36] Telecare and telemedicine could greatly influence the overall economy of the Czech Republic. Working from home is becoming more and more popular among employees[37]. Telecare and telemedicine could support safer conditions for still employed senior citizens. Ratio of retirement homes to number of senior citizens is not in favour of this type of housing for the growing number of senior citizens[38]. Telecare and telemedicine would be of crucial importance to secure adequate conditions for senior citizens.

In **DENMARK**, the overall demographic tendency in Denmark is that people live longer, meaning that a larger part of the Danish society in the future will be represented by elders. The group of 70+ will increase 66 % from 2015 to 2040 and at the same time will the group of the 0-69 year old decrease with about 1 % in the same period. There will be a total increase in the population of 8 % until 2040. The result of this trend means that less people of working age will have to take care of more elderly people in the future. Furthermore, less people in the 0-69 year group will mean less people to pay for the health sector via taxes (elderly care, hospitals, etc.). The second important trend is that more people – in all age groups – gets diseases related to their lifestyle e.g. obesity or COL, which leads towards more chronic ill among the entire population. The increasing number of lifestyle related diseases and the rising number of elderly people mean a rise in the number of people with chronic diseases. These trends will create a demand for a higher productivity in the health system if the quality of service is to stay at the same level as now. The question is how to best tackle this situation. Telemedicine is expected to provide solutions that can reduce the costs and at the same time use the resources in regions and municipalities better and more effectively.[39]

In **GERMANY**, in the next years and decades the population structure will be changed strongly by the demographic change. Until the year 2050 the population will develop into two directions that strengthen each other correlatively: On the one hand, a drastic decrease of the population is estimated, on the other hand, the share of old people will significantly increase. Furthermore, the life expectancy will continue to rise about seven to eleven years within the next 50 years. In 2009, Germany had 82 million inhabitants including 17 m. (21%) 65 years old or older. Until 2030, inhabitants older than 65 years will increase to 22 m. (29%).[40] Technological innovations should be used to cope with the challenges and use the opportunities of an aging society and to increase the quality of life of elderly people. As the German High tech strategy states: "Living an independent life well into old age" Demographic change is reshaping our society. People are living longer and remaining active longer. They want to live independent lives well into old age. In view of the consequences of demographic change on our society, economy and social security systems, we need to revise our traditional views on ageing. We need innovations in order to meet future challenges and improve older people's quality of life.[41]

In **HUNGARY** proportion of those under 20 felt from 44.9 percent to 23,1 percent during the last century. Excess of young over the elderly has gradually disappeared. At present there are about as many elderly as children in terms of age groups 60+ and 0-19. By 2050, there are projected to be at least 80 percent more elderly than children. New phenomenon of shrinking labour force poses new challenges for the society. The share of those in working ages is expected to decrease below 50 percent, while their number will falls to a level back before World War I, only 4 million.[42] According to the estimations every fourth citizen in Hungary will be aged 60 years or more by 2021.[43] Hungary will

35 (World Health Organization 2011).
36 (Czech Statistical Office 2013)
37 (Institute of Sociology ASCR 2008)
38 (Ministry of Labour and Social Affairs 2008).
39 (National Strategy for Dissemination of Telemedicine, 2012)
40 (Bundestag 2012).
41 Federal Ministry of Education and Research 2010: 11
42 http://www.ier.hit-u.ac.jp/pie/stage1/Japanese/seminar/workshop040220/Hablicsek.pdf.
43 Source: Lászó Hablicsek és Péter Pál Tóth (2010): Tíz év múlva az idősek országa leszünk (=

become the country of elderly population in ten years.[44] Today, average life expectancy for men is 70,93 years and for women 78.23 years. Figures for 1990: 65.13 years for men and 73.71 years for women.[45] Population ageing poses long-run challenges to society. It has major implications in the economic area, in the social sphere, even in terms of political dimensions. Suffice it to mention the impact on economic growth, savings, investment and consumption, labour market, taxation, pensions, health care, living arrangements, housing etc. It should be emphasized that population ageing is expected to continue, even accelerate in the next decades, indicating massive growth of challenges.[46]

In **IRELAND,** it is predicted that the 2011 levels of 532,000 old people could reach 860,700 by 2026, and increase by a further 470,000 by 2046. Mortality rates are assumed to decrease which will result in gains in life expectancy at birth from 77.9 years in 2010 to 85.1 years in 2046 for males and 82.7 years in 2010 to 88.5 years in 2046 for females. From a demographic point of view, the age group 50 and in 2011 were 23.4 per cent of the labour force, but this is projected to slowly increase over the period to reach 30.3 per cent by 2026 through a combination of increased participation and demographic shifts. The older population (i.e. those aged 65 years and over) is projected to increase significantly from its 2011 level of 532,000 to over 1.4 million by 2046. The very old population (i.e. those aged 80 years of age and over) is set to rise even more dramatically, increasing from 128,000 in 2011 to between 484,000 and 470,000 in 2046. The young population (976,600) was considerably higher than the old population (531,600) in 2011 but this will reverse by 2031 whereby it is projected that there will be older persons than younger persons under all scenarios by 2036. The excess will widen further by 2046 at which stage it is projected that there will be between 112,000 and 561,000.[47]

What will be the impact on society of these demographic changes? The care sector in Ireland is considered a "welfare mix" involving family, public, voluntary (community) and private provision, and financing – the majority of provision comes from the informal sector (family, friends, and voluntary groups). The majority of funding comes from public sources topped-up by private contributions. Long-term community-care provision in Ireland has been described as weak, fragmented, and uncoordinated, primarily resulting from funding bias towards long-stay care. There is little evidence to suggest that families will stop providing care in the future as the onus of care of older people will continue to be their families. However, demographic changes, changing family structures, and labour-force participation raise socio-economic concerns in relation to the sustainability of these informal long-term care support systems. This shift has led to the crucial question of how best to support older people and their carers at home, given the finite resources available to look after them[48].

In **LITHUANIA**, population ageing is a trend which started several decades ago and still continues in Lithuania at very fast pace. Illustration of this trend in Lithuania is the change in median age of the total population which rose continuously from 32,9 years in 1992 (EU-27 median age: 35,7 years) to 41,6 years in 2012 (EU-27 median age: 41,5 years). This shift still does not have enough attention at the policy level especially when it concerns elderly people. Policy measures are more aimed at young people to stop brain drain at a national level. Elderly people problems are addressed through the pension reform and financing aid measures. There are only plans of introducing innovation in the field. The total fertility rate in Lithuania has declined in recent decades. The total fertility rate was 2,40 of live births per woman in 1970 and was falling down continuously to 1,24 of live births per woman in 2002. A slight recovery was subsequently observed, with the average increasing to 1.76 live births per woman up to in 2011. As the financial resources are limited there is an ongoing debate where to put Governmental support money. During the governance of Conservative/Liberal Government (2009-2012) the initiatives were aimed at support of young families and there were a huge cut-offs in pensions for elderly people. The Social democratic nature of the current Government faces big challenges in balancing between those priorities and telemedicine has the potential in solving those social challenges.

44 http://nol.hu/lap/mo/20100227

45 Source: Central Statistical Office (2011): Statistical Yearbook. Budapest, KSH. http://www.ksh.hu/docs/hun/xstadat/xstadat_eves/i_wdsd008.html

46 Source: László Hablicsek (2004): Demographics of Population Ageing in Hungary. http://www.ier.hit-u.ac.jp/pie/stage1/Japanese/seminar/workshop040220/Hablicsek.pdf

47http://www.cso.ie/en/media/csoie/releasespublications/documents/population/2013/poplabfor2016_2046.pdf

[48] Kieran Walsh and Aoife Callan (2013) Perceptions, Preferences, and Acceptance of Information and Communication Technologies in Older-Adult Community Care Settings in Ireland: A Case-Study and Ranked-Care Program AnalysisAgeing International 36(1):102-122. DOI:10.1007/s12126-010-9075-y

Emigration: The overall fall down of population which in 2011 was 3052.6 thousand person and in 2012 was already 3007,8 thousand. The biggest fall down was because net migration which was 12,6 % in 2011 as mostly young people are leaving the country. As more and more young people are leaving the country, the main social challenge for the economy is how to stay competitive with the wider use of workforce consisting of elderly people. In 2011 and 2012 the labour laws become more flexible and allowed telework initiatives, which currently are explored by business companies. Wider use of telemedicine might allow to lower effect of net migration.

Mortality: People older than 60 years accounted for over three-quarters of deaths in 2010. The main causes of death included: circulatory system diseases (60% of all causes of death), malignant neoplasms (20%), external causes of death (approx. 10%) and digestive system diseases (6%). Based on the morbidity and mortality trends in Lithuania, the need for doctors is likely to increase for the treatment of circulatory system diseases, oncological diseases, gastrointestinal diseases, tuberculosis, mental and behavioural disorders, diabetes, pneumonia and asthma. Monitoring and diagnosis of some of the mentioned diseases through the use of telecare/telemedicine measures (like circulatory system diseases, diabetes, some oncological diseases) demonstrate good results in other countries and provides good opportunities to transfer good practice to Lithuania.

Urbanization: The Lithuanian health care system is characterised by a large hospital infrastructure, inadequate primary health care level (outpatient health care services, family doctor's services) and uneven regional distribution of health care facilities and specialists. Majority of doctors work in urban areas, majority of specialized treatment establishments are located in cities. The distribution of doctors between cities and districts is largely in line with the demographic structure, but the distribution of nurses show the bigger need for nurses in urbanized areas. There is a clear potential for telecare services in urbanized areas and there might be also a need for telemedicine services from professional medical centres with large infrastructure in the big cities to the regions with lower medical competence.

In **NORWAY**, there is a rich community with good public welfare. But looking ahead, there will be significant challenges. The early retirement age and the increased life expectancy will challenge the sustainability of the welfare plans.[49] In general, life expectancy is increasing in Norway. The number of people age 67 and over will more than double from 2000 to 2050. The number of people age 80 and over is expected to increase from 190 000 in 2000 to almost 350 000 in 2030 and 570 000 in 2050. In the next few years the number of people between 67-79 years and the age group 90 years and over will increase rapidly in the population. The growth in the age group 80-89 years, however, is not expected to increase until the next decade.[50] Projection indicates that the number of person-years needed in the care services sector may increase by almost 50 per cent or about 60 000 person-years up to 2030 and be more than doubled up to 2050. Finding people and the money to employ more resources in the public sector is considered unrealistic, so in the future fewer staff must provide services for more clients. The use of modern technology will play a major role.

This double demographic challenge means that there is expected to be a labour shortage in the public sector when it comes to providing services for the growing number of people who need help. The situation will be made worse by a disproportionately large number of public sector workers retiring in the next few years compared with the private sector. Increased number of elderly people increases the share of the population with age-related diseases (COPD, heart failure, cancer, dementia etc.). The number of younger seniors grows. Most seniors are healthy, but the majority of ill people are seniors. The incidence of illness and injury increases with age, and a significant proportion of elderly people have more diseases and injuries with varying degrees of disability.[51] It is important to exploit the next ten years of relative stability in the populations age structure to gradually expand the supply of health care services and prepare for the upcoming growth in demand. Telecare, welfare technology and telemedicine may be a solution for whom can live at home to ensure independent living. Further it can reduce the need for public care and reduce the pressure on the public offer. Telecare, welfare technology, telemedicine and ehealth would be of crucial importance to increase perceived safety so that people can stay at home longer and stimulate social and physical activity The number of people diagnosed with dementia in year 2050 will be 160 000, if the development continues.[52] Today 70 000 people have been diagnosed with dementia in Norway. Approximately 10 000 new persons are

[49] white paper 2013:12
[50] white paper 2013:12
[51] . (White paper 2012:29)
[52] (Norwegian institute of public health 2013)

diagnosed each year. As the number of elderly in the population increases, so does the incidence of dementia. The number of people with dementia is expected to double within the next 25-30 years.[53] Figures B.1, B.2, B.3 and B.4, in Appendix B present visual representation of the above analysis.

In **THE NETHERLANDS**, all of the reviewed reports and policy documents support that the trend of population ageing is continuing. The birth rate in the Netherlands for example declined to the level of the early 1980s and life expectancy increased (2005-2011) with two years for men to 78,3 and one year for women to 82,3 years. The life expectance will probably increase with another six years up till 2050.[54] There seem to be various underlying causes for this trend, not all known. The falling mortality rate of cardiovascular diseases though is for certain an important factor in the increasing life expectancy. This contributes to the ruling idea in current policy that an population that is getting older and living longer with chronic diseases will need more care, preferably at home, which is where telecare and telemedicine can be of great benefit. Ageing population thus is mainly a justification for telecare and telemedicine policy. Other non-demographic but nonetheless relevant trends are rising cost of care; and the increased demand for independent living solutions.[55] These trends also serve as justification for introduction of eHealth

In **PORTUGAL**, in line with the rest of the developed countries, people in Portugal are living longer than previous generations, being the average life expectancy for men 76.7 years (2010-2012) and for women 82.6 years (2010-2012). At the same time the Synthetic Fertility Index (ISF) has been in decline in the last years, being in 2012 of 1,28. The relationship between the number of elder and young people has resulted, in 2010, in an aging rate of 118 elder people for every 100 young people (112 in 2006). The dependency ratio is a relevant indicator for the area of continuous care for the elderly and Portugal had, in 2009, one of the highest dependency rates in the EU, with a value of 26.3.[56] This tendency shows the necessity of guaranteeing the quality of life of elder people and technology will contribute to it by satisfying equally the challenge of usability, accessibility, ethics, availability, affordability and privacy they require

In **SPAIN**, in line with the rest of the developed countries, people in Spain are living longer than previous generations, being the average life expectancy in 2011 for men 82.1 years and for women 85 years, one of the highest in the world.[57] At the same time the fertility rate has been in decline in the last years, being in 2012 of 1,32. As a consequence, the percentage of people older than 64 reached 17.38 in 2012. This figure is expected to be doubled from now till 2050.[58] This tendency shows the necessity of guaranteeing the quality of life of elder people and technology will contribute to it by satisfying equally the challenge of usability, accessibility, ethics, availability, affordability and privacy they require.

In **SWITZERLAND**, life expectancy at birth in Switzerland is currently one of the highest in the world, resulting from a significant rise during the 20th century. It has almost doubled since 1900: From 46.2 to 80.3 (2011) for men and from 48.9 to 84.7 (2011) for women. Nevertheless a gradual slowing-down of this trend can be observed. The difference between the two sexes has been decreasing since the nineties and in 2011 was 4.4 years. This development may have consequences for health care for frail older people and their caregivers at home. But a longer lifespan does not necessarily cause a longer phase of disease or frailty. At the moment, the "gained life years" are in most cases years with good health. Health problems and the need of (institutional) care are postponed to a later age. But this may change with an even further increasing life expectancy.

[53] (The Norwegian Directorate of Health 2012)
[54] (Statistics Netherlands, 2013, National Institute for Public Health and the Environment, 2010)
[55] (Statistics Netherlands, 2012)
[56] (source: INE, PORDATA; CES Report, 2012)
[57] (Source: United Nations).
[58] Sources: Instituto Nacional de Estadística (National Statistics Institute) http://www.ine.es/inebmenu/mnu_dinamicapob.htm#3 and http://www.ine.es/prensa/np784.pdf and United Nations http://unstats.un.org/unsd/demographic/products/socind/

4 NATIONAL POLICIES

This section outlines the national policies put in place to encourage the adoption of telecare and home-based telemedicine practices.

Key Findings:

- At policy level, the awareness of the strategic potential of telecare to address aging population is largely intermittent among countries
- Our analysis of policy documents reveals that telecare is beginning to get recognition at a policy level in some countries; however there are large nuances in the way it is interpreted and the level of urgency in policies to address and implement telecare policies. In some countries there appears to be a movement towards a national telecare policy, for example in Austria and Norway. However others are less advanced in their discussions and creation of policy.
- Our analysis argues for the need of mature policy prescription and implementation is now required. We argue in spite of telecare being prevalent in a number of policy documents in the various countries, the time is ripe for mature policy prescription. Policy in this space needs to move beyond initial discussions and seek to regulate the use of telecare to address the aging society.
- The challenge for the health services in an age of unprecedented technological changes is to establish a culture that reinforces innovative leadership and strengthens service champions. In the majority of countries tele-care is largely unplanned and it is argued that a national strategy would improve access to healthcare. We can speculate that much telemedicine activity goes unnoticed.
- From our analysis of the policy documents, there is recognition of the challenge for the health services in an age of unprecedented technological change are to establish a culture that reinforces innovative leadership. Specifically, there is an appreciation that this area is blue skies and is ripe for technological innovations. European funding, such as Horizon2020 are positioned to support research on telecare innovations which will in turn provide rich material to advise policy makers.
- To complement national policies, activity at a European level, including the adoption of the "i2010: European Information Society 2010" initiative, place ICT at the center of strategies for active, healthy aging. The European Commission (2007) highlighted the potential of technologies for increasing the opportunities of self-care, service innovation, and efficient delivery of health and social-care services across the EU. The recognition of the potential of ICT to support independent living and community care is reflected in an investment commitment of €1 billion over the last five years to develop the ICT care market in Europe.[59]
- Although the advancements in telecare and telemedicine are hugely promising, the practice of telemedicine appears to be quite irregular.
- A full list of policies in each country can be found in Appendix A at the end of the report.

[59] European Commission 2007

5 ACTORS

This section outlines the key actors, incorporating both policy enablers and policy enactors.

5.1 Policy Enablers

This section outlines all the different agencies involved in the generation of policy at a national level. The actors include but are not restricted to government departments, other statutory agencies and the voluntary and private sectors. The type of agency is of interest here to determine the relationship of private and public agencies shaping policy generation. Also, the impact of the agencies contribution helps to determine the power of influence of the particular agency.

Key Findings:

- Large number of government departments involved including, Environment and public health, Research and Education, Social Affairs and Health.
- It is recognised as a complex policy making in this area.
- There is also an additional dimension of regional vs national policy enhances complexity, for example in the case of Belgium.
- In most countries there is evidence of fragmented, uncoordinated decision making and implementation in the telecare domain with no central responsibility for policy making.
- Appendix C showcases the list of agencies

5.2 Policy Enactors

This section outlines the type of target groups who are recognized as the enactors of the policy. For example, organizations and communities that represent the interests of people who use health and social care services are deemed to be policy enactors. Furthermore, clients, family carers and care providers are part of the care system enacting policy. Finally, policy enactors refer to members of the public and communities who are potential users of health services and interventions.

Key Findings:

- There is a mix of nonprofit, voluntary, and non-governmental agencies.
- Their roles are varied and include raising awareness and dissemination of research.
- There is a mixture of Professional groups and Illness support groups
- Appendix D showcases the list of agencies

5.3 Actor Involvement Incentives

This section outlines the national incentives put in place to encourage the adoption of telecare and home-based telemedicine practices.

Key Findings

- There is significant variability in incentives offered.
- In some countries there is no recognised decided incentive however there is an umbrella of social services grants for elderly.
- Others offer a government payment schemes for telecare technologies, as present in Ireland and Spain.
- Others offer model villages as found in Germany.
- Others offer research funding to further explore this space.
- In summary, incentives are in embryonic stage of development, and are an area to be further maximized.

In **AUSTRIA,** there is support for a database for aiding devices for disabled persons and older adults[60]. This database covers the description, the price and the standards (ISO-Codes) for each device. Overall 6500 devices are subscribed in this database. However we could not identify decided incentives for the adoption of telecare and home-based telemedicine in Austria. The funding scheme and the provision for assistive Technologies (including telecare and home-based telemedicine) are complex and seem to be intransparent for users. One reason for this is the decentralized social health care system, meaning that each of the nine federal states has its own federal social and health departments. Thus resulting in an inhomogeneous national policy conversion[61]. Furthermore, the qualification for funding by the national insurance system (i.e. nine federal state departments) is generally based on individual case-by-case assessment. Meaning that besides the individual medical need, the funding depends on income and the receipt of social welfare payments.

Furthermore the federal social services department, offers additional aid funds for handicapped people and older adults. The preliminaries are the same as the funding by the national insurance systems (i.e. medical need, income, receipt of social welfare).

For the funding on services and solutions concerning the flat or house the nine federal states have special financing schemes for public housing ("Wohnbauförderung"). The amount of funding depends on the federal state, as this is a competence of the federal states. The funding is intended for financing barrier free modifications in the household and to enable independent living. As with the other two funding possibilities, the funding depends on income and medical need.

To sum up the funding for telecare and home-based telemedicine in Austria is still in it´s infancy. In case of a possible funding each case is assessed individually. In Austria alarm services (e.g. as wristband) are by far the most widely spread telecare solutions. Several non profit organizations (Caritas, Hilfswerk Austria etc.) provide such alarm services and it is also possible to apply for financial support for such devices.

In **BELGIUM,** we could not identify regional incentives decided by the Walloon government in order to encourage the adoption of telecare and home based telemedicine practices. This can be explained because of the lack of real regional political decision and the experimental phase in which the Walloon remains in this respect.

In the Walloon Region alarm services are the most (if not the only) telecare solution spread in the territory. This service is provided by non-profit organizations or by private firms through a subcontracting process decided by the mutual companies. Elderly people can apply for financial support for the use of the devices.

In **BULGARIA,** there were the beginnings of incentives found. For example**, E**U-funded programmes (including 7FP, CIP, INTERREG, SEE) which began in 2007. These programmes represent the strongest incentive, not just for financial reasons, but also due to the partnership requirements, which often result in the transfer of technology knowledge and best practices. It further stimulates R&D, adding to the development of health-related technology and knowledge eco-systems. These are attractive mostly to universities, NGOs and the Academy of Sciences, and only to a lesser degree to private businesses. Most of the focus was on innovation in healthcare technologies. SMEs are the typical beneficiary, but in the absence of strategic policy priorities, technology

[60] http://www.hilfsmittelinfo.gv.at/script/load.asp?page=000/00000001.htm

[61] http://is.jrc.ec.europa.eu/pages/EAP/documents/WP2ILS.pdf page 43

transfer, market development and expansion, and subsequent integration of working models remains elusive.

In the **CZECH REPUBLIC,** a public tender of the Ministry of Health of the Czech Republic: was launched in Efficient and operational e-health in October 2012. Here a few electronic system, which allows physicians, health insurance companies and patients to share information about treatment (estimated cost of 20M EUR) was offered.

In **DENMARK**, in January 2010, the Danish Public Welfare Technology Fund (Fonden for velfærdsteknologi) is co-financing projects under the National Strategy for Dissemination of Telemedicine, 2012 providing new knowledge about 1) home-monitoring of people with chronic diseases and establishment of a national infrastructure and 2) home-monitoring of COL-patients in the region of Northern Jutland. 3400 people will be included in the two projects from 2012-2014.

In **GERMANY**, a Citizen Dialogue on Demographic change was conducted from September 2012 – February 2013. In this Dialogue, citizens could debate about the demographic change happening in Germany. Part of that discussion concerned the problems of care in an older society and declining population in certain areas. The Dialogue consisted in 6 regional conferences, each with about 80 participants. Additionally, a Citizen Dialogue on High-tech medicine was conducted on August – October 2011. In this Dialogue citizens dealt with questions of the growing implementation of telemedicine in health care and its possible advantages and concerns, e.g. data privacy. The Dialogue consisted in 6 regional Conferences, each with about a 100 participants.

An future interesting incentive is the ZukunftsDorf Legden (Future Village Legden), project of the „Regionale 2016" whereby a development of a village is underway that caters especially to the needs of the elderly, e.g. mobility, special housing, infrastructure. Telecare plays an important role too, as citizens can use a "CarePad", an easy-to-deal-with tablet-pc that monitors their health and enables them to order services and products for their daily life.[62]

Furthermore, a Model Region Telemedicine in Ostwestfalen-Lippe is underway since 2012. The developing of a model region for telemedicine is a project of the above mentioned ZTG and is funded by the ministry of health Nordrhein-Westfalen. Different actors like hospitals, experts and health care agencies work together to develop, try and establish telemedicine in this area[63]. In addition, in Telemedical projects in the "Ostalbkreis"-region, 2009 – 2011, in the region 'Ostalbkreis' 3 projects targeting telemedical methods have taken place. The targeted methods consisted in: teleconsulting in regard to chronic wounds, teleassessment regarding risks of falling and tele-ECG for patients with cardiac arrhythmia.[64]
Also, since 2006, the Technological University Kaiserslautern started the Ambient Assisted Living-Project in 2006. For research purposes 20 apartments in the inner city of Kaiserslautern were equipped with AAL-technologies, along with some other apartments and assistant living centres in other regions. The project ended officially in 2009, but is still continued[65].

Finally, a research network called the Lower Saxony Research Network Design of Environments for Ageing, ongoing since 2008, has become established consciously interdisciplinary and multidisciplinary. Scientists from geriatrics, gerontology, information technology, engineering technology, medical science, nursing science and rehabilitation educational theory are working together nationally and university-covering. GAL is structured in a way, that in parallel to an empiric survey of requirements and resources, basic technical work can be done with the help of exemplary scenarios.[66]

In **HUNGARY,** we could not identify incentives decided by the Hungarian government in order to

62

http://www.regionale2016.de/fileadmin/daten/mandanten/reg/service/KF_ZukunftsDORF_02.pdf
http://www.regionale2016.de/de/regionale-2016.html

63

http://www.egesundheit.nrw.de/content/zentrum_fuer_telemedizin/modellregion_owl/index_ger.html

64 http://www.baden-wuerttemberg.de/de/service/presse/pressemitteilung/pid/telemedizin-ist-wichtiger-baustein-fuer-gesundheitsversorgung-im-laendlichen-raum/
http://www.lel-bw.de/pb/site/lel/get/documents/MLR.LEL/PB5Documents/recht/pdf/0/090406%20Gesundheitsversorgung%20Pavel%20Telemedizin%20Ostalbkreis%203%20Projekte.pdf
AAL-Wohnen mit Zukunft - Kaiserslautern

65 http://www.assistedliving.de/aal_kl.html
66 http://www.altersgerechte-lebenswelten.de/

encourage the adoption of telecare and home based telemedicine practices

In **IRELAND,** a Seniors Alert Scheme, which provides grants for over 65′s to buy personal monitored alarms, was put in place by the government to encourage the adoption of telecare among senior citizens. An investment was made by the government in 2013 of 2.45 million. In addition, despite the support for socially monitored alarms under the Scheme of Community Support for Older People funded by the Department of Community, Rural and Gaeltacht Affairs, the availability and take-up of social alarms in Ireland is very low compared to a number of other European countries, and social alarms are not yet adequately integrated into health and social care.[67]

In **LITHUANIA,** many projects are underway to research ways to optimize ICT and ageing society from 2004-2013. Such projects include the following; Supporting innovative learning approaches through mobile integration in the workplace Oncology Nursing, A Guardian Angel for the Extended Home Environment, ENABLE project (Enabling technologies for persons with dementia, PrimCareIT project, ICT for Health - Strengthening social capacities for the utilisation of eHealth technologies in the framework of ageing population (ICT for Health) (INTERREG IVB). However there is no known policy incentive in place to encourage the active use of telecare by the senior citizens in Lithuanian society.

In **NORWAY,** the municipalities must participate in the development and testing of welfare technology solutions in a three-way cooperation with the private sector and research, development and innovation circles. Top priority should be given to the development of the *care-kits*[68]. A care-kit is an expanded form of the safety alarm which may also include a self-triggering alarm, fall sensors, smoke detectors, electronic door openers, mobile phones, tracking solutions (GPS), etc. To boost the development and implementation of care-kits in Norway, the Norwegian Directorate of Health[69] launched the *Welfare Technological Innovation Programme*. The program aims at stimulating municipalities to try out technical solutions and do service innovation at the one hand and to coordinate and stimulate exchange of best-practices on the other hand. The goal is that 80%, i.e. 300 municipalities will implement welfare technology within 2020. The program also contributes with research, knowledge building and -sharing as well as the development of good models for the introduction of welfare technology. In parallel the program works with defining standards and solving legal issues that arises during the pilots. The budget for 2014 is 34 million Norwegian Kroner, and in the beginning of 2014 10 projects and 32 municipalities were accepted as pilots. The aim is that the program also will help successful pilots to be rapidly scaled to more municipalities.

"Safety care package" is a public research project. The aim is to help establish a robust care-kit model that can be used by all local authorities. Sintef is heading the project in collaboration with Norwegian municipalities.[70]
HelseOmsorg21 «HelseOmsorg21» is a national strategy process. The aim is to develop a 21st century R&D strategy for the health and care sectors in Norway. The strategy committee will invite all relevant actors to give input – including the R&D sector, businesses and public services.

In 2010 Norway established a new funding mechanism for regional research in addition to the national research funding system. A fund of EUR 0.8 billion was set aside for this purpose. An annual interest of about EUR 28.1 million is divided between seven research regions, each with its own independent research board. A large part of the funds have prioritized "Interactions in elderly care" and "Health and care".

In 2014 a Research effort: The initiative "More active and healthy years" aims to strengthen the efforts to reach two of. The research Paper's strategic goals: 'Improving health and health care' and 'welfare and research-based professional practice'. Budget will depend on national budget in October 2013.

Innovation Norway[71] is an instrument for innovation and development of Norwegian enterprises and industry. It is financed by the Norwegian

[67] Kieran Walsh and Aoife Callan (2013) Perceptions, Preferences, and Acceptance of Information and Communication Technologies in Older-Adult Community Care Settings in Ireland: A Case-Study and Ranked-Care Program AnalysisAgeing International 36(1):102-122. DOI:10.1007/s12126-010-9075-y

[68] In Norwegian official government documents this is called a "safety package", Meld. St. 29 (2012–2013) Report to the Storting (White Paper): "Future Care", page 28.

[69] an executive agency and competent authority subordinate to the Norwegian Ministry of Health and Care Services

[70] http://www.sintef.no/Projectweb/Velferdsteknologi/Trygghetspakken/

[71] http://www.innovasjonnorge.no/

Government. The Health initiative is one of Innovation Norway's six priority areas. It covers a broad range of product areas like new medicines, medical technology and health-related ICT. and has a budget of Strengthen the business sector with 450 million NOK annually for 3 years to "trigger innovative services and products."
One such programme, the Arena programme offers both specialist and financial support for long term development of regional business clusters. Some clusters focus on medical and health-care solutions:

Oslo Medtech is a Norwegian Medtech cluster of companies, hospitals, finance-, knowledge and research institutions focusing on medical technology. Oslo Medtech generates innovation and facilitates development of medtech products and services[72]

MedITNor is a clusters within medical technology based in Central Norway. It cooperates closely with Oslo Medtech.[73]

Arena health Innovation is a multidisciplinary organization for supplier collaboration for the development of technological service delivery to the health care sector.[74]

Innomed[75] is a national competence network for need driven innovation in the health care sector. It is funded by the Directorate of Health and Innovation Norway.

Abelia – "Arena New Care"[76] The aim of the Arena New Care is to create permanent improvements that make it good to grow old in Norway. The road to this goal, is going through a commitment to new smart technologies and services, through new constellations between the public and private sectors for the benefit of both businesses, using state and local authorities.

In **THE NETHERLANDS,** whenever a care organization uses eHealth it can declare an extra four hours at the same rate, as described in Policy Note CA-300-584 of the Dutch Healthcare Authority (NZa). This scheme was launched in 2014 by ZonMW, the Netherlands organization for Health Research and Development, funds projects aiming to resolve eHealth implementation issues. Furthermore, public-private partnerships are encouraged and can apply for funding, a total budget of €100.000 is available. Dutch provinces and councils can provide subsidies for care organizations and service providers as did the province of Utrecht (2012) for home automation.
Finally, from 2006-2012 Future at Home (Toekomst Thuis) financed 16 home automation projects.

In **PORTUGAL,** the national telecom company Portugal Telecom is providing telecare equipment in a partnership with União das Misericórdias Portuguesas (UMP)[77]. There is a public framework in place to support the adoption of telecare systems[78] Furthermore, the Ministry of Health has a telemedicine service as well to encourage the adoption of telecare[79].

In **SPAIN,** the Ministry, through IMSERSO, financed the 65% of the cost of the implementation of the service of Telecare whereas the public local entities (municipalities and provinces) financed the remaining 35%.
It is a mixed model: public ownership, private management. Owing to the economical crisis, in 2013 this program was cancelled and now each Region and municipality handle it with their own budget and resources and with the users' co- finance in some cases. The initiative was called Programa de Teleasistencia instrumentalizado mediante el convenio-marco IMSERSO-FEMP80 (Home-based telecare program implemented through the Framework Agreement IMSERSO-FEMP) and was in palce from April 1993-December 2012. More than 87,000 people benefited in 2010 according to IMSERSO (Ministry of Health, Social Services and Equality).[81]

In **SWITZERLAND,** there are no known incentives in Switzerland explicitly related to telecare and home-based telemedicine practices.

[72] http://www.oslomedtech.no/
[73] http://www.meditnor.net/
[74] http://www.arenahelseinnovasjon.no/
[75] http://www.innomed.no/en/
[76] http://abelia.no/english/category255.html

77
http://www.telecom.pt/InternetResource/PTSite/PT/Canais/Media/press_releases/PT+oferece+1000+equipamentos+de+teleassist%C3%AAncia+a+idosos+em+situavao+de+isolamento.htm

78 http://spms.min-saude.pt/blog/2013/03/10/suporte-legal-desenvolvimento-telemedicina/
79 : http://spms.min-saude.pt/blog/2014/01/23/telemedicina-ja-permite-resposta-imediata-a-pedido-de-consulta/

80
http://www.imserso.es/InterPresent1/groups/imserso/documents/binario/lbea_c11.pdf
81
http://www.imserso.es/InterPresent1/groups/imserso/documents/binario/lbea_c11.pdf

6 INFRASTRUCTURE

This section outlines the support programmes available from services providers to implement telecare and home-based telemedicine policy, the types of technology available and the risk factors.

6.1 Service Providers

This section outlines the type and nature of support programs available to support the adoption of telecare and home-based telemedicine policy. Furthermore, the type of service provider will provide insight into the mix of private and public services on offer.

***Key Findings*:**

- Private firms are dominant here.
- There are both service and product offerings.
- There are a growing number of startups in this field and it is particularly common area found among spinouts from universities.

Country	Name of Service Provider	Objective	Type of Service Provider
Austria[82],[83]	Lifecall[1]	Provider of emergency call systems smoke detectors, IR activity sensors, key saves, smoke detectors etc. for the home use.	Private firm
	T-Systems Austria[2]	One of the biggest providers of IC-technologies. They are providing solutions in different branches including telecare and telemedicine solutions.	Private Firm
	myVitali AG[3]	System that collects, analysis and evaluates health data. Providing soft- and Hardware solutions	Private firm
	CogVis [4]GmbH	Provider of a fall detector called SturzVis that reports a fall or another emergency, through different sensors (absolute position transducer, fall mat or senior alarms)	Private firm
	exthex GmbH[5]	Provider of two solutions:	Private Firm
		A Set-Top-Box called exSmartHomeBox that enables access to health data and other citizen services (eHealth and eGovernment)	
		E.M.M.A. - Excellent Mobile Medical Application is a system, leveraging modern mobile platforms for health professionals. Including	

[82] The Austrian eHealth Initiative compiled a product list for AAL technologies in the year 201182. The platform AAL Austria is also currently working on a product catalogue for AAL solutions82, which should be published in 2014.

[83] [1] http://www.lifecall.at/
[2] http://www.t-systems.at/loesungen/healthcare/481368
[3] http://www.myvitali.com/
[4] http://www.cogvis.at/
[5] http://www.exthex.at/
[6] Press information and product video available[6].
[7] http://www.tunstall.de
[8] http://www.novahome.at/
[9] http://www.pharmacell.se/en/pharmacell-careousel/
[10] http://www.future-shape.com/
[11] http://www.beko.at/index.php?id=1048
[12] http://www.plejaden.net/
[13] http://www.emporia.at/home/
[14] http://www.telecaresystems.at/index.php?deutsch
[15] http://www.ait.ac.at/research-services/research-services-safety-security/ehealth-ambient-assisted-living-aal/ambient-assisted-living-aal/likeit-lifestyle-monitoring-fuer-einen-gesunden-lebensstil/
[16] http://e-care.fh-hagenberg.at/index.htm
[17] http://hobbit.acin.tuwien.ac.at/index.html
[18] http://www.lifetool.at/forschung-entwicklung/f-e-projekte/detailansicht-projekte/118-homedotold.html

		alarm system and Monitoring of health data.	
	Spantec-GmbH[6]	Provider of three special systems for AAL. i-Residence Sturz is a falling sensor, i-Residence Vital is system for the monitoring of health related data and i-Residence Bett is an intelligent bed system.	Private firm
	Tunstall[7]	International provider of several telecare and telehealth services.	Private firm
	AIT Austrian Institute of Technology GmbH;	HOMER (Novahome) is a Home Event Recognition System which provides a technological energy saving and AAL Framework for the household.	Private firm
	Eaton corporation;		Funded by the EC (EFRE) and the government of lower austria
	ELK Fertighaus &		
	Molco.at Hamdels GmbH[8]		
	PharmaCell[9]	A fully automatic medicine dispenser (careousel) which ensures that the right medicine is taken at the right time	Private Firm
	Future Shape GmbH[10]	Mats that recognize falls, sound an alarm and open doors.	Private Firm
	Beko Holding AG[11]	Homebutler is a Set-Top-Box that combines phone, Internet, television and emergency functions like a fire detector, emergency call function and a cooktop control function.	Private firm
	Plejaden the brain Company[12]	Memocare is a Tablet PC application that helps dealing with the impact of dementia.	Private Firm
	emporia Telecom Produktions- und Vertriebs GesmbH & CoKG[13]	Provider of mobile phones for elderly adults.	Private firm
	Telecare systems[14]	Provider and distributor of several technological systems for older adults, including personal alarms, special phones and general systems	Private Firm

		for the daily routine (e.g. remote controls, medicine dispensers etc.)	
	AIT Austrian Institute of Technology GmbH[15]	LiKeIT – a System for the Lifestylemonitoring and –support for elderly adults.	Private Firm Funded by the Austrian AAL program "benefit"
	University of applied science Upper Austria FH-Hagenbrunn[16]	eCare is a system for the exchange of health related data between hospitals, special care homes and mobile care systems.	University of applied science
	Technical University Vienna[17]	HOBBIT is a mutual care robot, which is intended to make older adults feel save at home and to assist them in everyday life	Technical University EUFP7 funded project
	LifeTool[18]	HOMEdotOLD is a funded research project (BMVIT and EU) with the aim to develop a television based interface which provides access to Skype®, a personalized calendar and also personalized banner headlines.	International cooperation project
Belgium[84]	Vitatel	Alarming and monitoring solutions provided by a Health Insurance company	Non-profit organisation
	CISS	Alarming and monitoring solutions provided by another Health Insurance company	Non-Profit Organisation
	Tele-secours	It offers an alarming and monitoring solutions	Non-Profit Organisation
	MEDIBRIDGE	It develops software solutions for healthcare providers and organizations. It provides the exchange of information and the secured consultation of medications, test results, patient data.	Private Firm
	Projet ROGER (Hospital ERASME and Fishing Cactus (Microsoft xbow Kinect)	This project, called ROGER for Realistic Observation in Game and Experiences in Rehabilitation looks at the therapeutic rehabilitation of brain injured individuals with cognitive problems, trouble of attention, of memory or of organization e.g. due to trauma, stroke or a disease such	Private Firm

[84] We analyzed that in the Walloon Region, ageing technologies are mostly in an experimental phase in which private firms are implementing pilot tests. Among the public actors, hospitals, municipalities, nursing homes are also punctually and locally using new technologies for telecare services. Those projects in telecare and telemedicine are isolated and do not benefit from public funding due to the early stage of the public policies. We have decided to describe the projects the most frequently cited during our interviews, letting us expecting that they could become more important service providers in the future if a clear policy is decided by policy makers and if a regional coordination is undertook by public authorities. Monitoring and alarming solutions are the most spread technologies over the territory due to the existing support (and reimbursement) of the health insurance companies.

		as Alzheimer's .	
	Pilot study on the the interest of home monitoring for chronic obstructive pulmonary patient in CHU Liège and Pilot Project for home healthcare for dement patient in Bouge	Two monitoring pilot projects for chronic diseases recognized by the INAMI in its Program called: «Priorité aux malades chroniques».	Public (INAMI)
	AMAC	is an automatic monitoring of the daily life activities using indirect sensors. Its goal is to maintain home in the best conditions of health and safety for isolated elderly people with diseases or specific risks related to age or illness.	Private Firms
	OLDES - Older People e-Services at Home	The project aims to improve the quality of life of older people through the provision of adapted versions of modern communication technologies such as VOIP (voice over Internet) technologies and introducing even within their homes technology means to monitor their health and behavior.	Private Firms
	e-Patch - Development of an electronic patch for geolocation and fall detection for people with mental deterioration	The e -Patch is the study and development of an electronic patch with a long-range wireless communication and capable of ensuring, among other functions geolocalization and fall detection wire. E -Patch is designed to improve the monitoring and management of people with mental deterioration.	Private Firms
Bulgaria[85]	Oreol	Offers GPS localization devices to elderly and children, along with an emergency call-centre, which can track the person or send medical personnel to their position.	Private Firm
	University Hospital "Saint Ekaterina"	Installing equipment for transmission of ECG data from a moving ambulance to the particular healthcare facility. The technology allows providing more adequate and timely treatment of patients prior to bringing them to the hospital.	Public body
	Security Solutions Institutes, PIM Prima AD 	Telemetry system for monitoring the heart activity of patients. The system is called TEMEO and delivers information on the heart activity of a patient anywhere within the coverage of the GSM operator.	Private firm
	Pia Mater	Enabling elderly persons with special needs to easily contact a social worker who, when needed, contacts the emergency medical care and	Private, Social entrepreneur

[85] The information above was obtained through their own websites or by phone call.

		informs the person's family. The contact between the elderly and the social worker is established using home-based medical alert device.	
	Ministry of Health, Bulgaria	The Ministry of Health announced plans for installing equipment for transmission of ECG data from a moving ambulance to a particular healthcare facility in all ambulance emergency response vehicles in the country.	Public institution
	First Specialized Hospital Obstetrics and Gynecology "Saint Sofia", University General Hospital "Saint Marina", Varna, Military Medical Academy	Conducting real-time interactive videoconference consultations during surgeries. The technology allows real time consultations with medical experts are not physically present at the surgery.	Public body
	Shtrak BG Ltd.	Producing "GPS bracelets" (personal alarm type of device). Using panic buttons the patients can immediately contact a designated emergency center. The GPS devise installed in the bracelet allows for immediate localisation of the patient.	Private firm
	Quintessence BG	Emergency Webinfokit for storing health data of each patient in a worldwide accessible web database. The data is accessible by any authorized experts with every connected to Internet computer.	Private firm
Czech Republic[86]	Institute of Health Information and Statistics of the Czech Republic	Interactive atlas of health inequalities	Government Agency
	Czech Technical University in Prague, Faculty of Electrical Engineering, Department of Telecommunications Engineering, Department of Cybernetics	Research on the assistive technology devices for disabled people and on the home based telemedicine – model apartment with sensors	University
	Czech Technical University in Prague, Faculty of Biomedical Engineering (Kladno)	Research on the medical simulation (traumatic brain injury, ambulation and balance disorders, etc.)	University
	Charles University in Prague, 1st Faculty of	On-line monitoring and economic aspects of eHealth	University

[86] The information above was obtained through their own websites or by phone call.

	Medicine, Medical Data Centre		
	Charles University in Prague, 2nd Faculty of Medicine, Motol Hospital	Research on the assistive technology devices for disabled people	University
	Brno University of Technology, Faculty of Information Technology	Research on the information technologies for telemedicine	University
	National Medical Library	On-line health care and medical data availability	Library
Denmark[87]	CSC	CSC helps healthcare providers operate more efficiently and improve patient safety. CSC solutions are designed to help providers improve healthcare delivery while maximizing the benefits of technology and effectively managing costs across the entire healthcare continuum.	Private firm
	CSC/eMEDlink	eMEDlink provides a platform for telecare and treatment in private homes.	
	CSC/Scandihealth	Scandihealth develop and deliver innovative solutions for the healthcare sector.	
	The North Denmark Region	Tele homecare solutions for patients with Chronic Obstructive Pulmonary Disease (COPD). Instead of being hospitalized	Public institution, one of five regions in Denmark
		Self-controlled anti coagulation treatment from home with ICT contact to the hospital doctors	
		Diabetes database to ensure coherent patient progress	
		Online patient book for men that has received surgical treatment for prostate cancer	
	The Capital Region of Denmark	Tele homecare solutions for patients with Chronic Obstructive Pulmonary Disease (COPD). Instead of being hospitalized	Public institution, one of five regions in Denmark
		Internet portal for chronically ill people	
		ICT support system to support cross-sectorial coordination of patient progress	
		Virtual hospital, generally testing different treatments independent of time, place and space	
		Electronic personal health journal to make patients more self-reliant	
		Remote treatment of chronically ill patients with special focus on heart diseases	
	The South Denmark	Diabetes database to ensure coherent patient progress	Public institution, one of five

[87] The information above was obtained through their own websites or by phone call.

	Region	Home-monitoring of heart disease patients	regions in Denmark
		Web-based system to support self-controlled anti coagulation treatment from home	
		Tele homecare solutions for patients with Chronic Obstructive Pulmonary Disease (COPD). Instead of being hospitalized	
		Telemedicine evaluation of sore related to diabetes. Using mobile phones to connect between patient, nurse and doctor	
		Outpatient ECG and reporting to central ICT portal	
		Preventive self-monitoring for elderly people	
		Telemedicine solution for psychiatric patients. ICT upload of information about symptoms etc. from patients and relatives	
	Region Zealand	Tele homecare solutions for patients with Chronic Obstructive Pulmonary Disease (COPD). Instead of being hospitalized	Public institution, one of five regions in Denmark
		Telemedicine evaluation of sore related to diabetes. Using mobile phones to connect between patient, nurse and doctor	
		Self-monitoring system for diabetes patients including ICT contact to the hospital doctors	
		Self-controlled anti coagulation treatment	
	Central Denmark Region	Ambuflex: Individual self-monitoring connected to web-based system	Public institution, one of five regions in Denmark
		Patient overview for patients with diabetes, COPD and Acute coronary syndrome	
		Tele homecare solutions for patients with Chronic Obstructive Pulmonary Disease (COPD). Instead of being hospitalized	
	IBM	ICT platform	Private company
	The National Board of Social Services	Through its two departments – the Department of Social Services and the Department known as VISO (Danish abbreviation for "National Videns- og specialrådgivningsorganiation" which translates into the National Organisation for Knowledge and Specialist Consultancy) – the Board aims to promote new development and initiatives in social services while also supporting and counseling local authorities in providing services to citizens, i.e. children, young people, socially marginalised groups, elderly and disabled.	Public institution
		The institution as local branches all over the country.	
Germany	GETEMED[88]	"GETEMED AG has been developing, manufacturing and selling medical products for cardiological diagnostics and ambulatory monitoring of vital signs in high-risk patients for over 25 years."	Private corporation

[88] Link: http://www.getemed.net/en/getemed/portrait/

	HMM[89]	We are an independent research and manufacturing company located in Heidelberg, Germany. Our main focus is the development, manufacture and sale of home healthcare products for stationary and ambulant use."	Private corporation
	Bosch Healthcare[90]	"Bosch Healthcare is composed of two business segments: Telehealth and Telecare. The combination of these two areas allows us to offer a broad portfolio of products, systems and services that support patients with chronic conditions and older persons in their own environment."	Private corporation
	Bodytel[91]	BodyTel is a German telemedicine company, which has developed a comprehensive monitoring and management system for chronic illnesses. The aim is to provide patients and persons authorized by patients (e.g., medical professionals or family members) with the most up to date and precise information possible about the patient. Decisions about changes to treatment can thus be made more quickly, secondary illnesses can be minimized, and quality of life can be improved."	Private corporation
Hungary[92]	Mentőtárs Életmentő Gyorsszolgálat	Provide telecare solutions that support independent living in Hungary. The majority of users are elderly (more than 65 years old) and children, mostly young girls.	private firm
	Nurse Háziápolási Szolgálat - remote monitoring system	Accompanying home nursing service, the remote monitoring system is primarily aimed at monitoring ill and elderly people. It collects activity information about clients using a wrist-watch like unit, which also has a panic button. Based on the collected activity information and the status of the panic button - if significant activity change is detected or the panic button is pressed - alarm signals are transferred to the central monitoring site through the installed home telecommunication unit of the system. The operator in the centre can initiate voice connection with the client through the system to gather information about his/her real status. Persons authorized by the client - e.g. relatives, doctors, friends - are also informed of the alarm event, which enables them to provide help to the monitored, if it is needed.	private firm
	Mónika-M Otthonápolási és Hospice Szolgálat	A monitoring system and service supported by a home emergency alert device that continuously monitors and ensures rapid emergency assistance to elderly and chronically ill people struggling with health and / or social problems but who are self-reliant and do not require constant medical supervision. The service can make them feel safe in their everyday lives.	private firm

[89] Link: http://www.hmm.info/en/hmm.html

[90] Link: http://www.bosch-healthcare.de/en/de/about_us_2/about_us_3/about.html

[91] Link: https://secure.bodytel.com/en/company.html

[92] The information above was obtained through their own websites or by phone call.

	Medistance	With the aid of the Medistance service you can continuously monitor your relatives' blood pressure and blood-glucose data from any point of the country*. Following the measurements the blood pressure and blood-glucose values get into a web medical log via a mobile connection where the relatives or the healthcare professionals can monitor the measured values without personal presence. The system offers continuous control for elderly people being nursed at home, heart patients, clients suffering from blood-glucose problems or blood pressure problems, women with high-risk pregnancy, people who underwent stroke or heart surgery, people under post-treatment after an accident or grave illness and health-conscious users participating actively in prevention.	private firm
	Mohanet - Mobile care	AAL program in Hungary (private initiative). Vario MedCare is a mobile care personal monitoring/inspectoral device which provides security and supervision (emergency) while giving assistance in every-day tasks and daily routine. Using the device can significantly help remote monitoring of home therapy treatment (administration of metering, medication, fluid intake, etc.), which cuts down the time spent in hospital undergoing rehabilitation.	private firm
	Mohanet - Telemed book	Mobile care Ecosystem (system). Telemedicine solution which supports and inspires the medical/health screening of health conscious people. The screenings are available at the screening points (Chemist's, Optical saloon, Family doctor, Sports doctor, etc.) The signals are transferred by the multiuser (identification: with RFiD, PayPass, NFC card) data transfer device/unit (Vario MedCare) using M2M technology to the Telemedbook health book portal. The people with whom the user shares data or the e-Consulting rooms (doctors) get a permanent access to the posted data and they can order limit values to it. In case of crossing limit values an automatic message is sent to the address of the person selected or the e-Consulting rooms (doctors).	private firm
	Multialarm	Care for the elderly via gsm system. Individual contracts and individual routines apply.	private firm
	Multialarm	Care for the elderly via gsm system. Contracts are made with local municipality health care providers.	private firm
	Hungarian Maltese Charity Service	The organization aims to provide home care services to pensioners with severe social or medical conditions. Day care is provided by social workers, who regularly visit elderly people and assist them to make their lives easier (shopping, medical escort, feeding, etc...) 50 personal alarm devices are used with the most needy, low-income pensioners living without family and help. They provide 24-hour assistance. The alarm button ensures that required assistance is provided on-site as fast as	donation supported charity organization

		possible.	
Ireland	SensorMind[93]	"Sensormind is at the forefront of the emerging ambient assisted living/telecare market and builds solutions to empower older/vulnerable people to remain independent at home. Sensormind's flagship service 'Sensormind Independent Living' detects changes in an older person's behaviour patterns and raises an alert automatically, without the need for the person to take any action. The system is complementary to existing care services and offers an extra level of support for vulnerable persons. Sensormind customers derive safety, peace of mind, control and independence, while saving cost on acute and residential care facilities.."	Private corporation
	Smart Telecare[94]	Smart Telecare Ireland is a Cork based company providing a telecare & telehealth service designed to support the elderly and those with long term medical conditions to live independently. Their solutions are designed to improve quality of life, giving the user the confidence & ability to remain in their own home safe in the knowledge that help is always available when and if it is needed. Their products include the traditional Emergency Pendant or Carephone and are also sold under the Senior Alert Scheme. (SAS)	Private corporation
	Cara Wellness[95]	At CARA Wellness the technology helps users gather information about their health from several sources so that they can keep an eye on their wellbeing and share this with their carers. They do this through the use of medical technology, such as blood pressure cuffs, weight scales and sensors built into homes to identify unusual or abnormal patterns of behaviour and health readings. Their technologies allow individuals and those invested in their care to manage their chronic condition. Users are diverse and managed conditions include heart problems, diabetes and dementia. The CARA Wellness solution helps users act and react quickly when something out of the ordinary occurs.	Private corporation
		CARA Wellness is a complete solution. They install the technology in your home and teach you the basics to get you started. Their support staff are at the end of the phone 24/7/365 to deal with issues as they arise. They are there to help with clinical, technical and social problems that strain wellness and health on a day-to-day basis Link:	

[93] Link: http://sensormind.com/
[94] Link: http://www.smart-telecare.com/
[95] http://www.carawellness.com/about/

Lithuania[96]	KARDIOSIGNALAS, UAB	"Mobile personal ECG monitor" HEART GUARD, where it developed the prototype of wireless device for ECG and motion signals recording (not a service yet)	Private Firm
	ELDES, UAB	The company provides security systems which can be controlled by various types of interfaces, from mobile devices to keypads, keyfobs. GSM technology enables to get security alerts via text message or call as well as monitor equipment distantly. Their award winning product EPIR2 can be used for telecare, but is position for the home security market.	Private Firm
	GEDION, UAB	Company, specializing in a car parking systems and parking sensors, GPS car tracking services, provides GPS based monitoring system for children and elderly people (S.O.S. button)	Private Firm
	Teleklinika, UAB	Private teleconsulting company (doctors consulting through internet)	Private Firm
	Softneta, UAB	Company specializes in the IT based healthcare solutions such like archiving of medical images in healthcare institutions.	Private Firm
	Omnitel, UAB	Leading mobile services provider in Lithuania, which in 2009 gave away 2000 mobile phones for people living in a separated farms (mostly edlerly people) as part of security initiative with Lithuanian Policy Department. From 2011 Omnitel started promoting GPS and mobile technologies which are used by private companies in their products.	Private Firm
	Lithuanian University Of Health	It is considered to be a start of telemedicine in Lithuania, when former Kaunas medical academy (now Lithuanian University Of Health) made a first videoconference with Stokholm St. Erik Eye Hospital. From that time they are actively involved in work and practical application of telemedicine solutions in the field of ophthalmology.	University
	Verkių klinika	Private initiative in teledermatology.	Private Firm
	MONAK2	Monak is a cluster of companies and organizations united for creating and realising Modern House vision (including dimension of special needs for elderly or disabled people).	Cluster
Norway	The Norwegian Directorate of Health (an executive agency and competent authority subordinate to the Norwegian Ministry of Health and Care	The standardization work on the welfare technology area is intended to facilitate integrated and supplier of independent welfare technology solutions across public and private sectors, so that users get a good, coordinated and predictable service.[97]	Public

[96] The information above was obtained through their own websites or by phone call.

[97] http://www.helsedirektoratet.no/publikasjoner/nasjonal-strategi-for-standardisering-innen-e-helse/Sider/default.aspx

	Services)		
	LyseSmart	Lyse Smart will develop products for controlling heat, light, alarm and other essential features of the home at the interface between energy and telecommunications.[98]	Private services
	Telenor Objects	Telenor Objects offers a machine-to-machine (M2M) services. The Shepherd platform provide sensor data to applications and users.	Private services
	Omsorg+	Omsorg + implements smart house technology in some new appartments in Oslo including a demo apartment.	Public – private collaboration
	Visma Profil/ Perfomit	An electronic patient journal system for nursing and care, used by approx. 45% of the Norwegian municipalities.[99]	Private
	Tieto Gerica[100]	An electronic patient journal system for nursing and care, used by approx. 45% of the Norwegian municipalities.[4]	Private
	Acos	An electronic patient journal system for nursing and care, used by approx. 10% of the Norwegian municipalities.[101]	Private
	Abilia	Abilia develops, manufactures and sells aids for persons with disabilities in the areas of Communication, Cognition and Environment Control & Alarm.	Private
	Hjelp24 Respons	Offer safety alarm products and -services for both private customers as well as for municipalities. Collaborate with public care services, ambulance services and doctors.	Private
	Tunstall	Offer safety alarm products and –services as above.	Private
The Netherlands[102]	Personal Assistant for Life (PAL4)	Provides personal alarms and webcam solutions to care organizations. The webcam is either used on a pc or on a tablet and comes with extra content. The care provider can develop the content to its own standards and products	Private Firm
	Viedome	Supports elderly to live at home as comfortable as possible. Viedome offers webcam contact with care professionals and a platform with information and contact with local organizations.	Private Firm
	Motiva	Philips Motiva is an interactive telecare platform with in an informative	Private Firm

98 http://www.lyse.no/selskaper/lyse-smart-article13960-13762.html

99 http://www.visma.no/programvare/for-offentlig-sektor/Pleie-og-Omsorg/Overview/

100 http://www.tieto.no/branscher/helse-og-velferd/kommunal-helse-og-omsorg-tieto/gerica-pleie-og-omsorgsystem

101 http://www.acos.no/artikkel.aspx?MId1=1061&AId=1472

102 General Note: There have been many smaller initiatives by different players in the health industry to launch eHealth product. However many of these initiatives fails to persist and develop sustainable products. Therefore, we have chosen here only to list the more successful ventures that have proven to be stable and durable. The introduction date shows the year the product was first introduced, the products have since undergone revisions and updates to add or improve services. Service providers are private firms but they are sometimes backed by healthcare organizations in their implementation trajectories, which in turn receive public funding for stimulating eHealth development.

		multimedia content. It's developed for chronic patients to manage their disease. Motiva is also available through a special program from Achmea health insurance.	
	Sananet	Health buddy system is an interactive monitoring device for patients with chronic diseases. Since 2009 Sananet also provides telecare through the SananetOnline Platform on computer, tv and mobile devices.	Private Firm
Portugal[103]	Red Cross (Cruz Vermelha Portuguesa)	Provide continuous assistance to those who are in a situation of dependency (due to age, illness, disability or isolation), as well as to fully autonomous people that wish to feel protected, by having an immediate response to any urgent / emergency, safety or solitude situation.	NGO
	tcare	Dedicated to provide remote services in Portugal and in countries where the official language is Portuguese.	Private firm
	Knowledge and Health S.A.		
Spain[104]	Cruz Roja (Spanish Red Cross)	Provide continuous assistance to people with disabilities, social isolation, old age or illness	NGO
	Servicios de Teleasistencia S.A.	Provide telecare to dependent people in several regions of Spain	Private firm
	Grupo NEAT	Organisation for the technological progress providing social services.	Private firm
	Televida Tunstall	Provide telecare to dependent people	Private firm
	ASISPA	Implementation of activities for promoting the personal autonomy and a better assistance to people.	Private and non profit association
	EULEN Servicios Sociosanitarios	Take care of people in situation of dependency or social risk by improving their quality of life and that of their family.	Private firm
	Personalia. Grupo Fundosa	Assist old or dependent people	Non profit organisation
	SAR-Quavitae	Offer a preventive, immediate and permanent service to old and dependent people to satisfy and mobilise the necessary resources to solve any need or situation of emergency.	Private firm
	Vesta Servicios de Teleasistencia	Provide immediate assistance to dependent people to improve their quality of life	Private firm
	TRONIC, SA	Adoption of technology for assisting old or dependent people to improve their quality of life.	Private firm
Switzerland[105]	Medgate	Medgate is one of the leading telemedical companies in Switzerland. It provides advice and treatment by telephone, the Internet and video for	Company
	www.medgate.ch		

[103] The information above was obtained through their own websites or by phone call.
[104] The information above was obtained through their own websites or by phone call.
[105] The information above was obtained through their own websites or by phone call.

		patients with urgent or general health queries. People with chronic illnesses benefit from telemedical care programs.	
	Medi24 www.medi24.ch	Medi24 is a Swiss pioneer in the field of telemedicine. It offers telephone assistance for medical advice or in the event of an emergency, and special care programmes for chronically ill and at-risk patients.	Company
	Schweizerisches Rotes Kreuz (Swiss Red Cross) www.redcross.ch	Provides emergency call solutions at home (system “Casa”) or mobile solutions (system “Mobil”).	Non-profit provider

6.2 Risk Analysis

This section outlines the mitigating risks expressed in national policy and other channels. In order to identify the type of risk analysis conducted at policy level, the likelihood variable will be of interest. Here ethical and legal issues were examined. The following types of risks are relevant in this section: Environmental, Human and Technological. Specifically, this section includes ethical considerations, safety risks, etc. The reason for including mitigating risks is to acknowledge any recognized efforts to reduce the extent of exposure to the risk by regulation or other means.

Key findings

- A multitude of types of risks were identified including Privacy Risk, Social risk, Technology Risk, Legal Risk and Financial Risks.
- The most common privacy risks were concerned with legal rights and ethical considerations not being fully addressed.
- The social Risk of isolation was considered and the question of forced or voluntary participation was raised.
- The Technology Risk of how to secure data storage and transmission of sensitive health data were identified.
- Also the polarized dilemma of technology driven innovation versus user need innovation was questions and the ramifications of this debate.
- Also Legal Risks were articulated; specifically the medical responsibility was questioned in the technology versus practitioner onus of responsibility debate in the time of malpractice. In the case of risk of malfunction / maloperation of technical devices, the question of liability in such cases needs to be considered.
- The legal risk of the lack of legislation and regulation in this space was also recognised.

In **AUSTRIA**: A Policy Risk was identified as follows; A contextual view on the issues of ageing society is needed, as it cannot be reduced solely to one ministerial responsibility. Otherwise the fragmented view may hinder a holistic problem solving. The Austrian interdisciplinary platform for Ageing may have the right competences to aid such an assignment. The policy risk is controversial as the political attitudes concerning telecare and telemedicine vary. Some political parties, ministerial agencies and organizations advocate the current developments concerning telecare and telemedicine whereas others are strictly against it. Privacy risk (legal and ethical risks): The privacy, legal rights and ethical aspects of telemedicine were not addressed adequately in the policies. This proves right on the ongoing discussions concerning the electronic health document (ELGA). Furthermore current developments in telecare are quite close to surveillance technologies: High risk
Social risk: High: The implementation of telemedicine and telecare systems may lead to social isolation. Social benefits of telecare and telemedicine have to be clearly separated from economic benefits (e.g. benefits for the health insurance system). Ageing is an individual process and this has to be considered for the use of telecare and telemedicine. The financial disparity of older adults has to be considered adequately to prevent a two-tier medicine.
Technology Risk; High Secure data storage and transmission of sensitive health data. Interoperability is of major importance in R&D of telecare and telemedicine products. The needs of potential users have to be considered in the product design. Current developments are strongly technology driven.

In **BELGUIM**: Legal and Political Risks: Medium: Belgium is a federal state and is today facing wide-ranging institutional reforms. Health is part of the competencies moving from the federal level to the regional level. Regional policy makers will therefore need to face this new political landscape, determine how they will deal with their new competencies and decide whether or not they will legislate and implement effective policies on telemedicine and telecare. The risk lies henceforth in the degree of collaboration between the competent regional governmental agencies and the remaining federal agencies. Ethical Risk: High Privacy and ethical risks are high because security and private life protection is an important topic within telecare and telemedicine. Privacy data could be exposed to unauthorized persons. Secure data storage and transmission of sensitive needs to be clearly defined and tested. Moreover, some people are afraid of these technologies that they see as surveillance technologies. Technology Risk: High: Reliability and validity of the technical devices is questioned. The devices must comply with the elderly people's ability and multiplicity of human-technology interactions. What happens if a breakdown occurs? What if the data are stolen or hacked? Is there a risk of misinterpretation by the technology or the staff? Social Risk: High: The implementation of telemedicine and telecare systems may lead to social

isolation. These technologies should not substitute for classical medical assistance. Environmental Risk: High What about the electromagnetic fields? Some stakeholders are afraid of a possible increase of those EM fields and of the possible risk on health.

In **BULGARIA:** Protection of personal data and personal health records and access to information., Consumer protection – protecting patients as customers of medicines and e-health services, Protection of intellectual property rights and industrial property rights., Operational compatibility of the information systems used in the healthcare sector., Access of the elderly to the new technologies, capacity to use them

In **CZECH REPUBLIC**; Not adequate financial coverage provided, Poorly designed system of identification of recipients and providers (communication standard), Necessary legislative changes not adopted, Cooperation with professional companies and other entities not ensured, Not properly trained human resources, Poorly designed technical solutions

In **DENMARK:** Privacy risks related to sensitive data stored and exchanged in different telecare systems, Patients with low ICT abilities not receiving proper care when telecare solutions are implemented. Less human contact for elderly people when personal care is replaced by telecare

In **GERMANY**: There were a multitude of risks identified. These included data protection & safety, the issue of medical responsibility. Specifically are the technology producers responsible or the medical professionals in the situation of patient safety. Furthermore, the endangered relationships of trust between doctor and patients through technology was questioned, together with the risk of the strong dependence on technology of the patients/ elderly people. The issue of forced or voluntary participation into systems of telecare needs to be considered. In addition the issue of the control of technology and knowledge about the technology might be challenging for elderly and ill people. The penultimate risk is the cost risk needs to be considered in the context of a "Two class medicine" structure. Finally, the loss of the "social side" of care is a concern to whereby social innovations need to be considered to complement the technical innovation.

In **IRELAND**; Reduction in government grants for personal security alarms resulting in less adoption of ICT in the home was analysed as a high risk jeopardizing the adoption of telecare products among senior citizens.

In **LITHUANIA** High Risks: Lack of Finance for alternatives to the hospital based care. Lack of innovation in health sector and public administration (doing things as always) Lack of initiative**.** Medium Risk: No critical mass of change agent to put issues on the political agenda**.** Low Risk: Lack of knowledge, lack of technological solutions

In **NORWAY:** Risks were identified as the following; Privacy, Cooperation with professional companies and private companies. Poorly designed technical solutions against the already existed system, and not properly trained human resources.

In **THE NETHERLANDS**: Privacy and security risks of data collection: Security is an important topic within telecare and telemedicine. Too much restriction on the exchange of patient data can restrict organizations in developing. On the other hand it's not an option that privacy sensitive data is exposed to unauthorized persons. It's is a continuing discussion within the various themes of telecare and telemedicine. Care will get colder when it is given by technological means (opinions noted on citizen panels in 'Ethical Frameworks for Telecare Technologies for older people at home (EFORTT)' There's no proper rating here, as it is what consumers describe. Research is necessary in order to define these fears more detailed and to monitor how people feel. Reliability and validity of technical devices- How reliable are the measurements given through sensors and other eHealth devices. Do these devices measure what they are supposed to measure? And are the measurements consistent over time, with different types of users in different settings of interaction. Tests in the lab cannot always account for the multiplicity of human-technology interactions in real life. Factors often cited as a justification or driver for the development and introduction of telecare, like cost of care, might not evolve as predicted Several trends could negatively affect the current business cases of eHealth projects. In a recent report by Statistics Netherlands (2012) a few important trends are described that show a variation from regular perspectives and that could reduce the necessity for eHealth. Care cost for example, rose over the last year, but significantly less than previous years.
In 2011 there was also a slight rise in the number of health care workers. These trends could also predict a different effect of population ageing, as long-term hospitalisation was to be resolved with telemedicine and telecare. Telemedicine and telecare also fit in the trend towards more outpatient clinic treatment, with

the additional care provided through telecare. However a changing strategy of hospitals on providing additional care could harm the eHealth business model

In **SPAIN and PORTUGAL;** Economic risk: Decrease of public funding by the Central Government. Security & privacy risk: Consent Risk, we need to ask the following questions, who wants a telecare service? Who is need of that? The family, the older person? This is usually a matter of negotiation. Coordination risk is significant as caring at home requires to adapt the provision of care to the specific need of each individual, care is fragmented. This may make coordination among the different care providers much more difficult and may be very disturbing for an older person, as he/she may have to deal with an increasing number of different actors. Besides, there are aspects of care less related with 'functional' needs that can be systematically disregarded. For example, solitude of seniors in society. Customization risk: technologies and services are designed to comply with safety and quality standards, this fact reduces the capacity of the users to customize the service according to their needs. This may lead to some of them to stop using them or using in a non-complying manner, which has consequences with regard to liability issues.

In S**WITZERLAND** Ethical / social risks were considered. For example, the loss of direct human interaction with physicians or caregivers as a result of technical solutions. Furthermore, the problem of frail patients or patients suffering from dementia not being able to give informed consent for the use of technical devices is a potential risk. The social risk of data misuse is of concern where telemedicine applications are based on data (telephone calls, videoconferences) which are related to the private environment of the patients. Finally technological / legal risks were identified in the case of risk of malfunction / maloperation of technical devices. The questions of liability in such cases needs to be considered.

7 CONTRIBUTION

The report will be of interest to TA practitioners, policy makers, and society in general as we present an overview of policy measures related to telecare and home based telemedicine in the European countries/regions represented in the PACITA consortium. The analysis based on cross case comparison of individual country data collection showcases common findings and some nuances which will stimulate stakeholder comments and discussion at the policy conference and among the general PACITA audience.

8 APPENDICES

8.1 Appendix A : List of Policies

AUSTRIA

Year	Policy	Description
1993	Federal Law on Constant Attendance Allowance ("Bundespflegegeldgesetz," BPGG)[106]	This policy governs a tax funded long term care system, which is independent from the income.
2004	Law on Health and Telematic-GTelG[107]	Provides the framework for the security of sensible health data and amends the privacy protection law (DSG2000)
2005	The brochure, "i2010 Austria", explains the general goals and the most important i2010 initiative measures to be implemented in the areas of economics, research and development, education, public administration and health in Austria.[108]	The platform digital Austria is the coordination and strategy committee of the Federal Government for eGovernment in Austria. eGovernment includes the totality of all electronic public administration services for the Austrian people. With it the access to and the contact with public authorities become easier.[109] The integration of all citizens, data protection management and customer orientation have the uppermost priority.
2005	Draft for the Austrian eHealth strategy[110]	This document is the national agenda for the EU driven "E-health action plan"[111] of 2004. The aim of this document is to contribute to the development of a long termed concept for the digital documentation, communication, storage and treatment for health-related and administrative data. The eHealth strategy has also relevance for further telecare and telemedicine related policies as it also outlines definitions for telemedicine. It was composed by the working group 1 of the eHealth Initiative (eHI). They have written also some position papers on AAL.
2008	The law on organization and financing of the health care system	An important policy document for the organization and financing of the health care system in Austria. The temporal coverage of this policy is from 01.01.2008-31.12.2013.[112] This policy document

[106] http://www.ris.bka.gv.at/GeltendeFassung.wxe?Abfrage=Bundesnormen&Gesetzesnummer=10008859
[107] http://bmg.gv.at/cms/home/attachments/6/9/9/CH1300/CMS1297946357043/gtelg2005.pdf
[108] http://www.bka.gv.at/DocView.axd?CobId=16635
[109] http://www.digitales.oesterreich.gv.at/DesktopDefault.aspx?alias=egov&init
[110] http://bmg.gv.at/cms/home/attachments/8/5/3/CH1043/CMS1156950437801/entwurf_fuer_eine_oesterreichische_ehealth_strategie.pdf
[111] European E-health action plan:
http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=COM:2004:0356:FIN:DE:PDF
[112] http://www.ris.bka.gv.at/Dokument.wxe?Abfrage=Bundesnormen&Dokumentnummer=NOR30006564

		envisages the further implementation of health related IC-technologies in order to reduce health care costs and raise efficiency.
2009	First position paper of the eHI on telemedicine[113]	The first position paper of the eHealth Initiative (eHI) provided following aspects: Telemedicine and EU Ambient Assisted Living Home monitoring Funding of telemedical services 10 recommendations on planning, evaluation, implementation and operation of telemedicine services in the Austrian health care system. Furthermore a document for the "Technical standards for telemedicine"[114] was composed. The eHI provided further position papers on telemedicine and Ambient Assisted Living for Austria in the years 2011115, 2012/2013116.
2010	The report "Austrians key to success"[117]	A report of the Federal Ministry for Transport, Innovation and Technology (BMVIT) which provides insights in current and in future funded projects. Demographic Change and ICT is seen as a challenge and chance.
2011	Austrian RTI Strategy: Becoming an Innovation Leader [118]	This document addresses the Grand Challenges: One of them is to ensure quality of life in the midst of demographic change. The aim is the development of systematic research approaches that combine specific societal needs with social and product-related innovations.
2012	Ageing and future – Governmental plan for elderly persons[119]	A national plan which was developed by the Federal Ministry of Labour, Social Affairs and Consumer Protection(BMASK) in cooperation with the national elderly people advisory council. The aim of this document is to provide a framework for politics for ensuring and enhancement of life quality for older adults. In contrary to the Joint program Initiative - AAL[120] induced program "benefit" which is strongly technology driven, the ageing and future – governmental plan for elderly persons has a broader scope. It covers all aspects of the social and working life of older adults.
2012	Health and Illness of older adults in Austria[121]	A report on the health and illness status of older adults in Austria. This report provides insights in the health status of older adults and is intended to serve as information for policy makers and all other relevant stakeholders
2012	10 framework-health-aims for Austria[122]	A framework which implements 10 aims for the regulation and development of the health care in Austria for the upcoming 20 years.
2013	ELGA – Electronic Health	The aim of this policy is the centralized storage of diagnostic

[113] http://ehi.adv.at/fileadmin/user_upload/adv_author/pdfs/AG_2009/eHI_Positionspapier-Telemedizin_2010_06_21.pdf
[114] http://ehi.adv.at/fileadmin/user_upload/adv_author/pdfs/AG_2009/eHI_Positionspapier_StandardsTelemedizin_2010_11_18.pdf
[115] http://ehi.adv.at/fileadmin/user_upload/adv_author/pdfs/Positionspapiere2011/Positionspapier_eHI_AK_AAL_20111019_1.0_final.pdf
[116] http://ehi.adv.at/fileadmin/user_upload/adv_author/pdfs/Positionspapiere2013/2013-04-03_Positionspapier_eHI-AG_AAL_v1.0.pdf
[117] http://www.bmvit.gv.at/innovation/publikationen/forschungspolitik/downloads/schluessel.pdf
[118] http://www.bmvit.gv.at/en/service/publications/downloads/austrian_rti_strategy.pdf
[119] http://www.bmask.gv.at/cms/site/attachments/4/7/6/CH2229/CMS1218014040042/bundesseniorenplan_kompl.pdf
[120] http://www.aal-europe.eu/wp-content/uploads/2012/11/The-Benefit-Progaremme.pdf
[121] http://bmg.gv.at/cms/home/attachments/6/2/1/CH1104/CMS1201520486131/seniorenbericht.pdf
[122] http://www.gesundheitsziele-oesterreich.at/

	document[123]	findings. Since 2006 ELGA is a national project consisting of the ELGA system partners including the nation, federal states and the social insurance providers. It is implemented in the governmental program and in the health agreement for the organization and financing of the health care system of 2008 (see above). ELGA is planned to start at the end 2013/begin of 2014 in form of an ELGA portal for patients. Till 2016 it will be compulsively implemented in hospitals, nursing homes, pharmacies and in doctor`s practices. This system was permanently and still is criticized for privacy and constitutional right violations[124.]

BELGUIM

Following our research we discovered that the Walloon Region is still at the beginning of the political process of fully-fledged policies dedicated to telecare and telemedicine, and more broadly that it was lacking an integrated policy framework for dealing with its ageing population. We cannot really assert that regional policies related to the telecare and home-based telemedicine are presently implemented at a regional level. It actually appears that this issue is not a priority for the government who has not defined its e-health strategy yet (but is expected to fulfill this soon). As a result of this non-interventional stance, local and private pilot projects have been developed (see point 5.1.). Consequently to this experimental phase, we could only identify two policies, which are deemed to be relevant to the future of telecare and telemedicine. Besides the regional level, the federal government still remains competent for some health issues until the effective competency transfer acted in the sixth state reform. One national policy was identified concerning e-health. According to the experts' interviews, the competency transfer will provide more health competencies to the Regions in terms of telecare and telemedicine and could eventually lead to real regional policies in telemedicine and telecare. The three experimental policies discussed above are described below:

Year	Policy	Description
2005	E-Health Plan (former Be-Health)	The e-health plan is an inter-ministerial agreement between the federal and regional Ministers of health and emanates from a wide consultation with the healthcare stakeholders. A e-health platform was created through the 21th of August 2008 law related to its creation and organization. It is a sectorial telematics platform whose purpose is to provide patients and providers of health care and social security a uniform and secured access to value-added services and information provided by the various stakeholders in public health and social security. It is therefore expected to become the single access point to resources available and a mean for modernizing health care through the coordinated development of computer and telecommunications sector development. The mission dedicated to the plan is: to promote a well-organized exchange of electronic information regarding the safety of information, the protection of the patient's privacy and medical confidentiality. At the moment, Regions only have a consulting competency but after the sixth state reform they will get an effective competency.
2011	The Walloon code of social action and health enforced since	The articles 390 to 393 of the code are speaking of telecare devices.

[123] http://bmg.gv.at/home/Schwerpunkte/E_Health/ELGA_Die_Elektronische_Gesundheitsakte/ELGA_Information_zur_Regierungsvorlage
[124] http://www.initiative-elga.at/ELGA/pressespiegel_ELGA.htm

	the 31st December 2011 (Le Code wallon de l'Action sociale et de la Santé)	The code deals with the financial support (subsidies) to elder people who can obtain a camera remote assistance. The grant is awarded to any person who is seventy years old or sixty years old if disabled of at least 66%, occupies its home alone, has a gross annual income below the amount fixed by the Government. The subsidy application is submitted to the Minister that the Social Action.
2013	BELRAI: Belgium Resident Assessment Instrument	BEL RAI is a tool currently in a testing phase. The Minister declared her commitment agreement to this instrument when she signed the 2013-2018 e-health action plan. RAI is a uniform method used to assess the capacity of residents to perform daily activities and to update any capacity deterioration. The tool makes an assessment, a diagnosis and a prognosis of each individual situation. This telemedicine technology can be used in order to quantify the pathology and the effectiveness of the healthcare. The pilot experience's ultimate goal is to improve the quality of life and health care of older people through this evaluation mode.

BULGARIA

In December 2010 the Government adopted a Strategy for the Restructuring of in-patient care in the Republic of Bulgaria[125]. However, neither e-health nor any other telecare integration strategy is included, suggesting of the very low priority of telecare in general within official Bulgarian policy planning. Considering there is no further action on the continuation of the Strategy for the Integration of eHealth in Bulgaria, doubts remain as to the prospects of telecare (national) policy development.

Year	Policy	Description
2007	Strategy for the Integration of eHealth in Bulgaria	Defines eHealth in terms of application possibilities in Bulgaria, and present the specific objectives with regards to the development of e-health within the national healthcare system. An action plan was adopted for the implementation of this strategy within 2007-2012 period. No reports of its success or other evaluation documents are (publicly) available at the moment.
2013	National Healthcare Strategy 2014-2020 (draft)	A key strategic objective is directed at people of 65 years of age and older – to create opportunities for active aging and to reduce hospitalization rates by 20% until 2020. For 2011 this rate was more than 45% for that ag Egroup. E-health development is stated as a priority. However, policy priorities are focused on in-patient care improvement and cost optimisations of in-patient care, as well as on overall control of the healthcare costs increase. Telemedicine is seen as a tool to integrate in emergency response care. No specific measures are provided with respect to telemedicinal activities. Featured is a specific policy targeted at health technologies, innovation and investments, with a strong role implied for health technology assessment.

[125] Original can be found at http://www.strategy.bg/FileHandler.ashx?fileId=1721 (Bulgarian language only).

CZECH REPUBLIC

Year	Policy	Description
2012	Biennial Collaborative Agreement between the Ministry of Health of the CR and the Regional Office for Europe of the World Health Organization for years 2012-2013	Priority 5: Health Information, Evidence, Research and Innovation. Enhanced analytical products for planning, monitoring and evaluation of health situation and inequalities in support of decision making and reform processes responding to the health needs were planned to be introduced.
2009	Research and development program of the Ministry of Health III. for the years 2010 – 2015.	The basic aim of the RDP III is to fulfil the obligations of the Act No. 211/2009 Sb. to implement the reform of research, development and innovation policies in the healthcare, and to increase efficiency of the use of public funds in the health research. There is a need for practically applicable results of the research for diagnosis, treatment and prevention of diseases, healthcare systems, development of informatics and nursing, and ultimately for securing international level of comparable research results.
2008	Legislative intentions of the eHealth projects (Version 1.7) , the Ministry of Health of the Czech Republic, 2008.	Tool for the creation, on-going updates and gradual implementation of the concept of development of eHealth in the Czech Republic. Key areas are national policies and programs, electronic health record, efficient, safe and reliable health information and communications network, electronic identification of patients and medical staff, health care payment system, e-learning and inter-connection information for acquiring new knowledge to improve the health status of the population.

DENMARK

Year	Policy	Description
2012	National Strategy for Dissemination of Telemedicine, 2012	The aim of the strategy is to push the use of telemedicine forward, fast. But also to take the first steps towards national dissemination of the solutions with the biggest potential. The dissemination strategy has two purposes: 1) to secure that telemedicine will be used more than it is now 2) provide evaluations that can become the foundation for future decisions on national dissemination of telemedicine. The strategy aims at gaining more experience with telemedicine in larger scales to test how it will affect the treatment, quality and society. This is done in 5 case studies.
2013 (launched in June 2013)	Digital Welfare – New Possibilities for the Welfare Society	The strategy is to cover the health area, the social area and the educational area. The aim is to develop a strategy for digital welfare in Denmark that secures the quality of the public service sector despite a very narrow economical frame in the public sector the coming years. Concerning health care the first step is to start broadly implementing digital health care technologies and procedures that have been successfully tested and tried out in real life settings. The first step is financed by 10 mill Euro. The Minister of Health says that it is time to move on from test stage to making digital health care an integrated part of the Danish health system.
2010	The Danish Public Welfare Technology Fund (Fonden for velfærdsteknologi)	The former Danish government put a spectacular 3 billion Danish crones (400.000.000 Euro) into a foundation with the purpose of advancing implementation of welfare technology. The strategy and rationale was to provide the funds for implementation in exchange for an envisioned increased productivity. The receivers of the funds were to document how much time/money they saved through implementation of welfare technology.

GERMANY

Year	Policy	Description
2012	High tech strategy	The aim of the document is to provide an integration of research and innovation strategy of the German government. Health care as well as an independent life for the elderly people is part of the strategy.
2011	The New Future of Old Age The Federal Government - Research Agenda for Demographic Change	The aim of the document is to define the German research strategy for demographic change, including a strong focus on independent life of the elderly (care, mobility, independence).
2011/2012	Demography report and demographic strategy	The aim of the documents is to define the future focus of the German government with regard to demographic change. Questions of health and independent life for the elderly are included.
2013	Citizen Dialogue Demographic change	The report documents the results of a citizen participation dialogue round on demographic change as one topic of high future relevance, organized by the Federal Ministry of Education and Research, focusing rather on work organization in an ageing society.
2011	Citizen Dialogue High tech medicine	The report documents the results of a citizen participation dialogue round on high tech medicine as one topic of high future relevance, organized by the Federal Ministry of Education and Research, focusing specifically on telemedicine and telemonitoring.

HUNGARY

Year	Policy	Description
2004	eHealth strategy and implementation activities in Hungary. Report in the framework of the eHealth ERA project[126]	Hungary joined to the eHealth Action Plan of the European Commission.The related policy documents have been embedded in the ICT strategy of the healthcare sector. The eHealthprogramme is regarded as a tool of the modernization of the healthcare system.
2004-2007	The New Széchenyi Development Plan, EU-funded RTD projects (TAMOP, TIOP, HEFOP, etc.) for the development of the healthcare sector	The Ministry of Health and Social Care prepared its eHealth strategy, established the eHealth Department within the Ministry, and initiated calls for proposals in the ICT sector.
2007	eVita National Technology Platform	Upon the initiative of the John von Neumann Computer Society a grant proposal was prepared by several interested stakeholders in 2006 in order to launch a national technology project on ICT in the service of daily living. The project (called eVita) was granted in 2007 by the Ányos Jedlik Programme of the National Office for Research and Development (NKTH). Ambient Assisted Living has been on the agenda of eVita since the beginning[127].
2008	Decree No. 191/2008. (VII.30.) on financing care services and community appropriations (támogató szolgáltatás és közösségi ellátások)	Since January 2008 social alarm services have to be offered to those in need in each Hungarian municipality with over 10,000 inhabitants[128].
2010	Semmelweis Plan for the renewal of the healthcare system.	The Plan is focused on the reorganization of the healthcare system. Significant attention has been paid to the development of the information system. (Ageing-related issues are only indirectly mentioned in the document)[129].
2013	National ICT Strategy 2014-2020[130]	The strategy is aimed at strengthening the digital infrastructure and digital competencies. The document confirms the significance of ICT in the setting up and operation of telemedicine and telecare systems. Its contribution to an improved quality of life is a key question for the society.

[126] http://www.ehealth-era.org/database/documents/ERA_Reports/eHERA_Hungary_report_January_2007.pdf

[127] http://evitaplatform.hu/hu/mission

[128] www.kozlonyok.hu/nkonline/MKPDF/hiteles/MK13054.pdf

[129] http://www.nefmi.gov.hu/miniszterium/2010/

[130] http://hirlevel.egov.hu/tag/infokommunikacios-strategia/

IRELAND

1999	National Development Plan 2000-2006	Recognised the potential role of telemedicine to deliver services at the most appropriate locations, to access various centres of excellence with their professional expertise and to share diagnostic imaging and laboratory data
2001:	Quality and Fairness: A Health System for You, Health Strategy, published by the Department of Health and Children	Telecare and Telemedicine has the potential to bring specialised diagnostic and clinical expertise closer to people, especially those in remote locations, making the health service more accessible and responsive".
2004:	Embedding the 'e' in Health: A Strategic Framework for the Irish Health System, published by the HSE	Various regional Health Boards incorporated telemedicine in their services
2006	The National Action Plan for Social Inclusion 2007- 2016	Recognises the role that family carers play in supporting government policy of caring in the home and community and suggest that carers require a range of supports including ICT training in telecare
2008	Action plan on Health Research 2009 -2013	Committed to further develop ICT related health research and the overall interface between the ICT and health research with the expected deliverable to be innovative outcomes in areas such as independent living and telemedicine
2013	National Positive Ageing Society	The Government committed to completing and implementing the National Positive Ageing Strategy so that older people are recognised, supported and enabled to live independent full lives. This Strategy, which was published in April 2013, is a new departure in policy making for older people given its focus on the broader determinants of health. It is the blueprint for age related policy and service delivery in Ireland, outlining a vision for positive ageing and older people, the national goals and objectives required to achieve this vision and a suite of priority areas for action that are based on the broader determinants of health. It recognises telecare and telehealth services are becoming increasingly recognised as an effective way to prevent or manage some health conditions effectively.

LITHUANIA

Year	Policy	Description
2014	Draft version of Action Plan on the Use of 2014-2020, Ministry of Finance, February, 2014.	Draft of Action plan on the use of 2014-2020 EU structural funds foresees the need for the active ageing supporting infrastructure, including the provision of better geriatric services and specialized healthcare services. At the moment it is difficult to say how it will be implemented at the level of measures and how it will be connected with telecare/telemedicine, but availability of funds for similar measures is already a move forward.
2014	Draft version of Roadmap on implementation of Lithuanian R&D and Innovation priorities (smart spezialization roadmap), Ministry of Education and Science, February, 2014	Draft Roadmap on implementation of Lithuanian R&D and Innovation priorities (smart specialization roadmap) foresees the measures for developing the new models of provision of health care services in the field of active ageing.
2013	Lithuanian Health Programme for 2014-2023 (DRAFT).	The Lithuanian system of healthcare is traditionally focused on hospital services and treatment. The number of patients in hospitals, number of physicians for 1 000 of population are one of the highest in the EU. As a response to such situation the draft project of Lithuanian Health Programme for 2014-2023 was prepared. It is approved already at Government level (Nov, 2013) and is awaiting hearings at the Parliament. The programme aims to push the whole health system to the prevention and education side. It also foresees wider use of "health technologies".
2012	Programme of the Sixteenth Government for 2012–2016	Article 259 points out that particular attention will be paid to the needs of the elderly by introducing special programmes to enhance health, improve quality of life and ensure dignified retirement for the elderly. That Government will promote the development of geriatric services and ensure a variety of gerontology professionals.
2007	Lithuanian strategy for the E-health 2007-2015	The aim of the strategy is to ensure the evolutionary development of Lithuanian health system, quality of health services and balance of old and emerging information and telecommunication technologies. Till 2013 the strategy mainly concentrated on the establishment of necessary infrastructure and solving the interoperability issues (like establishment of National Electronic Health System NESS, eHealth record system, ePrescribing system). The third stage (from 2014) foreseen the universal use of eHealth information tools by patients, GPs, primary health care institutions and hospitals for research and diagnosis solutions. But at the moment the implementation is still struggling at the infrastructure level and it is unlikely that the third stage will be implemented on time.
2004	National strategy for overcoming the effects of ageing (Governmental resolution No. 737, 2004)	National strategy for overcoming the effects of ageing - addresses the need for homecare, but does not foresee the potential of telecare, telemedicine or similar measures.

NORWAY

Year	Policy	Description
2008	Report "Ageing of the future and new technology", The Norwegian Board of Technology[131]	Main recommendations; «Care kit» for all care recipients", ethical and justifiable use of new technology, requirements for Privacy and good routines for handling information, as well as for safe communications, demands towards the municipalities and demands for user-oriented innovation in publicly supported development projects for the care sector should also be implemented.
2013	White paper 2013:29. "Caring for tomorrow", ("Morgendagens omsorg"): 1.The safty care package 2.Welfare Technological Innovation Programme 2013-2020	Goals: Enhance care services, regional research and development structure. Involve established innovation and research institutions at national level. Strengthen efforts for research, innovation and development in municipalities and relevant programs in the Research Council. 1.The "security package": Technology and services that enable "stay at home as long as possible" to make the care sector better and more efficient. 2.Welfare Technological Innovation Programme: 2013-2020 with a total budget of 960 million.
2012	Whitepaper 2012:9. «One patient one journal"	Health professionals should have easy and secure access to patient and user information The citizens should have access to simple and secure digital services Data should be available for quality improvement, health monitoring, management and research
2013	National program for development and implementation of welfare technology in the care services_	
2013	New law on GPS tracking of people with dementia[132]	A new bill allows for the use of positioning technologies, including GPS to improve and facilitate the municipal health and care for people with dementia.

[131] Norwegian board of Technology (2008) Ageing of the future and new technology. Oslo. http://teknologiradet.no/english/more-care-with-better-technology/

[132] http://www.regjeringen.no/nb/dep/hod/dok/regpubl/prop/2012-2013/prop-90-l-20122013.html?id=719104

THE NETHERLANDS

Year	Policy	Description
2012	Letter from the minister of Health, Welfare and Sports to the Lower Chamber	The minister confirms the importance of eHealth in this letter. She also outlines the part the authorities need to play: to facilitate, to remove obstacles and create space for the different players. The minister stresses what has been done already in order to smoothen the implementation of eHealth, as she refers to rules on standardization and privacy, compensation, information dissemination and the cooperation she detects between care organizations, entrepreneurs, local authorities and how she supports this with subsidies.The letter ends with this quote: "The enhancement of eHealth in our healthcare system is of utmost importance to me. I will therefore place it on the agenda, remind various parties of their responsibilities and continue the conversation with the parties of the National Implementation Agenda eHealth. I expect them to keep in touch with their parties in order to realize our ambitions. The time of non-committal is over and we need to take the next steps together." The letter does not specify particular policy measures.
2012	National Implementation Agenda eHealth (NIA) formed by organized interest groups of physicians, patients and health insurers	This document is an appendix to the preceding letter and is aimed to give a boost to eHealth. It is an initiative of three organized interest groups, representing the physicians, patients and health insurers. It gives an overview of issues, ranked by desirability and priority, that should receive attention in order to successfully implement eHealth. The report shows that these different parties are invested in eHealth and aspire to promote its development.
2012	National Social Survey for the Netherlands. Ministry of Health, Welfare and Sports; Ministry of Social Affairs and Employment	The survey is on social protection and social involvement. The report states in general terms that the government will promote eHealth, as it believes eHealth will keep healthcare accessible and affordable.
2011	Health in sight. National memorandum health policy. Ministry of Health, Welfare and Sports	A report that charts a long-term policy for Dutch citizens. Various problem areas are mentioned, in which the importance of stimulating exercise is emphasized. Within these central topics there is a theme on 'Care close by', aiming at enabling citizens to stay in their own homes as long as possible and also at keeping care accessible and affordable. eHealth is mentioned as a way to reach these goals. The report also relates learning a healthy lifestyle and telecare: digital products will be wanted by everyone, making it easier to 'sell' healthy lifestyle products. The report mentions public-private partnerships as important for the growth of eHealth.
2011	Top Industry Plan for Life Sciences and Health. Towards a healthy and thriving Holland. Public-private partnership of business, knowledge	An important example showing the rise of public-private partnerships in Healthcare. The government subsidizes various public-private partnerships to enhance health care. In which eHealth is an area of special interest.

	intuitions and government.	
2013	Viewpoint on internet treatment of depression. Health Care Insurance Board (CVZ)	In this viewpoint CVZ answers the question whether or not internet treatment for depression is part of the statutory insured package. Based on a literature review they conclude that internet treatment based on cognitive behaviour therapy for adult patients with a light or severe depression indeed meets the standards of science and practice.
2012	Health Care Insurance Board (CVZ) institutes advisory committee Innovation for Care Professions and Education	The advisory committee Innovation for Care Professions and education was instituted to advise the minister of Health, Welfare and Sports on the development of professions and education in a changing healthcare system.
2011	When is eHealth insured care? Health Care Insurance Board (CVZ)	This document clarifies under what circumstances eHealth is part of the insured care. Guideline is whenever the standard treatment is part of the insurance, and it is given in a different way by eHealth, it is part of that same decree. One of the conditions is that the effectiveness remains the same. The insurance company can decide whether this is the case or not. Whenever there is an indication that the form of delivery changes the care, the treatment needs to be assessed by CVZ.
2013	Pioneers in change – partners in innovation. Reconnaissance committee. School for Higher Vocational Education	Advice on education for college students. The committee emphasizes that eHealth should be a part of higher education for health care professionals.
2013	Policy Note CA-300-584 Performance descriptions and rates for extramural health care 2014 Dutch Healthcare Authority (NZa)	This note is one in a range of policy notes mentioning eHealth. It is of special interest because it aims at 2014 and it shows that earlier decisions are prolonged: this policy note agrees on the earlier statements of CVZ asserting that insured care that is just given in a different way (eHealth) should be claimable. Notable is that even though these CVZ-rules are at hand, in this note eHealth is positioned as a different category of care instead of care given in a different way. There is also a pharmaceutical telecare product (by using a dispenser) brought in. All these special forms seem to be admitted to facilitate the care organizations and insurers and emphasize that eHealth is paid for. Also notable: whenever a care organization uses eHealth it can declare an extra four hours at the same rate (as an incentive).
2013	Advice E-health. Possibilities for e-health in medical special care. Dutch Healthcare Authority (NZa)	The report gives account of a survey which the NZa did under the authority of the ministry of Health, Welfare and Sports. It focuses on the development of eHealth in medical special care. The NZa concludes that remote diagnostics and consulting are promising ways to reduce unnecessary referral to secondary care. In order to further develop eHealth in this area two main themes must be addressed: First, useful information on eHealth needs to be provided to the field. The report specifies that this will be done via a healthcare information platform, but the kind of information to be disseminated is not defined. Secondly, financial thresholds between two adjoining areas of health care (primary and secondary care) need to be removed.

PORTUGAL

Year	Policy	Description
2001	Dispatch No. 24 142/2001 of November 1, 2001, by the Deputy State Secretary of the Ministry of Health	Recommendations for the development of the knowledge Society by modernising public services and promoting the expansion of broadband infrastructure. implementation of PCs and other devices and ICT for both administrative and medical purposes. Recommendation to create a task force or a National Monitoring Centre for Telemedicine
2005	Telemedicine, Recommendations for development- Ministry of Health Directorate General of Health - Lisbon, April 2005	In the report the concepts of eHealth and Telemedicine are analyzed and redefined
2007	Dispatch No. 6538/2007, Ministry of Health, Office of the Deputy State Secretary	To create a working group under the dependence of the Deputy State Secretary at the Ministry of Health for the development of Telemedicine in the National Health Service
2013	Despacho nº 3751/2013 de 6 de Março 2013, by the Deputy State Secretary of the Ministry of Health	Aiming for the services and facilities of the National Health Service (NHS) to use more information and communication technologies for consultations and examinations to be available through Telemedicine

SPAIN

Year	Policy	Description
2006	Ley 39/2006 de Promoción de la Autonomía Personal y de Atención a las Personas en Situación de Dependencia (Law 29/2006 of Promotion of the Personal Autonomy and Assistance to People in Situation of Dependency)[133]	Country law regulating the basic conditions for promoting the personal autonomy and assistance to dependent people with the implication of all the public administrations in Spain. It pretended to make uniform the services offered by the Spanish Regions and municipalities in this regard. In practice each Region has its own catalogue of services according to their necessities, citizen sensitiveness, budget and demographic structure.
2007	Real Decreto 727/2007 de 8 de junio, sobre criterios para determinar las intensidades de protección de los servicios y la cuantía de las prestaciones económicas de la Ley 39/2006 de 14 de diciembre, de Promoción de la Autonomía Personal y Atención a las personas en situación de dependencia[134] (Royal Decree 727/2007 of 8 June, about the criteria for determining the intensities of protection of the services and the quantity of the economical benefits of the Law 39/2006 of Promotion of the Personal Autonomy and Assistance to People in Situation of Dependency)	Definition of the services to be given to the old people according to the conditions established in the above-mentioned Law. Many key questions are left to each Region.
2009-2012	Sanidad en Línea. Plan Avanza (Health online. Avanza Plan)[135]	Plan for the development of the knowledge Society by modernising public services and promoting the expansion of broadband infrastructure. implementation of PCs and other devices and ICT for both administrative and medical purposes.
2011	Libro Blanco del Envejecimiento Activo (White Book of Active Ageing)[136]	Document sponsored by the Spanish Government guiding the policies for the improvement of the quality of life of elderly people.
2012-2015	Pla estratègic SITIC (Strategic Plan SITIC)[137]	Regional (Catalan) framework document for all the health sector conceived for the encouragement of ICT in the system

[133] http://www.boe.es/buscar/doc.php?id=BOE-A-2006-21990
[134] http://www.boe.es/buscar/doc.php?id=BOE-A-2007-11446
[135] http://www.msc.es/profesionales/hcdsns/TICS/TICS_SNS_ACTUALIZACION_ES_2010.pdf
[136] http://www.imserso.es/InterPresent1/groups/imserso/documents/binario/8088_8089libroblancoenv.pdf
[137] http://www20.gencat.cat/portal/site/canalsalut/menuitem.41e04b39494f1be3ba963bb4b0c0e1a0/?vgnextoid=61976eb8efae3310VgnVCM1000008d0c1e0aRCRD&vgnextchannel=61976eb8efae3310VgnVCM1000008d0c1e0aRCRD&vgnextfmt=default

SWITZERLAND

There is no specific policy for telecare and home-based telemedicine in Switzerland on a national level. With some exceptions (e.g. transplantation medicine) health issues are regulated by the 26 cantons, which have their own parliaments and constitutions.		
Year	Policy	Description
2007	Swiss eHealth strategy (Strategie "eHealth" Schweiz)	It has three main fields of action: Electronic patient records Online services (including telemedicine) Implementation of the strategy
2008	Creation of "eHealth Suisse", the Swiss coordination organism related to the national eHealth strategy, in charge of organizing the process, providing sustainability and coherence.	In order to succeed, the eHealth strategy must be nationally planned and coordinated while respecting the needs, requirements and autonomy of each of the 26 cantons. The Confederation and the cantons have therefore concluded a framework agreement and created a coordination body called "eHealth Suisse". The financing is provided by the federal state and the GDK (Swiss Conference of the cantonal Health boards). The coordination organ represents a political governance in the steering committee and has representatives of numerous stakeholders, including patients, in the advisory board.
2009	Postulate of MP Bea Heim	In this postulate, the government (Federal Council) is asked to provide a report on the opportunities offered by telemonitoring in health care and care for the elderly. For the Federal Council, these aspects are already covered by the eHealth strategy of 2007. Thus no report was commissioned.
2010	Report on implementation	Describes the state of implementation of the different tasks of the Swiss eHealth strategy.
2012	Overview concerning objectives	Summarizes the achievement of the objectives of the Swiss eHealth strategy
2013	The Federal Council's health-policy priorities "Health 2020"	In January 2013, the government (Federal Council) approved a comprehensive strategy entitled "Gesundheit 2020" (Health 2020). A total of 36 measures across all areas of the health system aim to maintain quality of life, increase equal opportunities, raise the quality of care and improve transparency. The measures will be implemented in the course of the next few years with the involvement of all key stakeholders. The objective is to make the Swiss health system fit for the challenges ahead and yet to contain costs. In this strategy report, "healthcare provision" is a priority area and measures to promote the implementation of eHealth are recommended. But this is predominantly related to electronic patient records and not to telecare or home-based telemedicine.

8.2 Appendix B: Demographic Trends Illustrations

Austria

Table B. 1 shows the development and the forecast for the year 2030[138].

	1990	2011	2030
Total population	7.677.850	8.420.900	9.000.007
Age 0-19 (%)	24,2	20,4	19,1
Age 20-64 (%)	60,8	61,9	56,9
Age >64 (%)	14,9	17,7	24
Life expectancy for men	72,2	78,1	82,2
Life expectancy for women	78,9	83,4	86,7

(source: statistics Austria)

[138] http://www.statistik.at/web_de/statistiken/bevoelkerung/index.html

	2000	2012	2020	2030	2040	2050	2060	2060/2012
Belgique								
Population au 1er janvier	10239085	11035948	11615924	12080310	12368449	12578898	12748686	116
Solde naturel	9980	22217	22703	16282	7907	-892	-910	
Naissances	114883	128094	133693	130479	133564	134798	134275	
Décès	104903	105877	110990	114197	125657	135690	135185	
Solde des migrations internes	0	0	0	0	0	0	0	
Solde des migrations externes	13732	55800	35585	17379	16228	18749	19042	
Population au 31 décembre	10263414	11113965	11674216	12113964	12392568	12596716	12766756	
Région de Bruxelles-Capitale								
Population au 1er janvier	959318	1138854	1257890	1313684	1323958	1335476	1350142	119
Solde naturel	3413	8980	10704	10349	9360	8844	8635	
Naissances	13626	18654	20111	19651	19316	19373	19381	
Décès	10213	9674	9407	9302	9956	10529	10746	
Solde des migrations internes	-5861	-13104	-14801	-15325	-15039	-15002	-15016	
Solde des migrations externes	6741	21211	13487	6821	6553	7600	7766	
Population au 31 décembre	964405	1155941	1267280	1315529	1324832	1336918	1351527	
Région flamande								
Population au 1er janvier	5940251	6350765	6648138	6887566	7039069	7139856	7205500	113
Solde naturel	4375	10188	8190	3321	-731	-6931	-6869	
Naissances	61877	69162	71611	69154	71677	72161	71477	
Décès	57502	58974	63421	65833	72408	79092	78346	
Solde des migrations internes	2211	6899	7518	7531	7146	7042	7090	
Solde des migrations externes	5840	23495	14378	6610	6111	7195	7387	
Population au 31 décembre	5952552	6391347	6678224	6905020	7051583	7147136	7213064	
Région wallonne								
Population au 1er janvier	3339516	3546329	3709896	3879060	4005422	4103566	4193044	118
Solde naturel	2192	3049	3809	2612	-722	-2805	-2676	
Naissances	39380	40278	41971	41674	42571	43264	43417	
Décès	37188	37229	38162	39062	43293	46069	46093	
Solde des migrations internes	3650	6205	7283	7794	7893	7960	7926	
Solde des migrations externes	1151	11094	7720	3948	3564	3954	3889	
Population au 31 décembre	3346457	3566677	3728712	3893415	4016153	4112662	4202165	
Communauté germanophone								
Population au 1er janvier	70831	76128	79890	82593	83832	84322	84521	111
Solde naturel	108	91	90	5	-56	-142	-133	
Naissances	761	786	866	820	831	848	829	
Décès	653	695	776	815	887	990	962	
Solde des migrations internes	63	93	106	131	108	103	115	
Solde des migrations externes	54	302	169	33	26	57	69	
Population au 31 décembre	71036	76614	80255	82762	83910	84339	84570	

Source : 2000-2011 : observations, RN-DGSIE ; 2012-2060 : Perspectives de population 2010-2060, BFP-DGSIE

Table B. 2: Movement of the population in Belgium, in the Regions and the German community for 2000 to 2060

	HOMMES		FEMMES		TOTAL	
	Effectif	% pop. H.	Effectif	% pop. F.	Effectif	% pop. totale
BELGIQUE	754 383	14,56	1 055 679	19,54	1 810 062	17,10
WALLONIE	227 184	13,62	340 793	19,27	567 977	16,53
BRUXELLES	58 637	11,80	94 141	17,62	152 778	14,82
FLANDRE	468 562	15,53	620 745	20,02	1 089 307	17,81
NAMUR	29 970	13,30	44 899	18,90	74 869	16,20
LUXEMBOURG	17 012	13,20	24 111	18,20	41 123	15,70
LIÈGE	72 640	14,30	107 009	19,90	179 649	17,10
HAINAUT	83 713	13,30	131 654	19,60	215 367	16,60
BRABANT WALLON	23 849	13,30	33 120	17,40	56 969	15,30

Table B. 3: Number of the population under 65 years old and more and the proportion in the total population, 2007 (source: ECODATA, Service public federal Economie, PME, Classes moyennes et Energie, 2007)

Norway

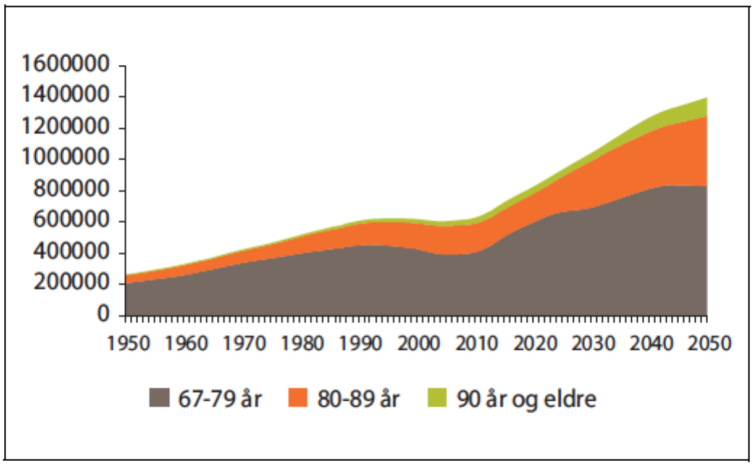
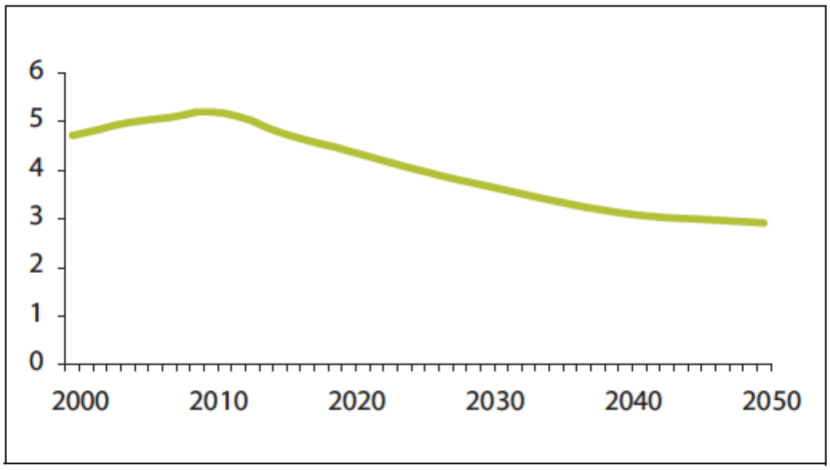


Figure B.1 No of people from the age of 67 and higher from 1950 to 2050 (white paper 2013:29 p.40)



No of people in working age (16-66 years) per no of elderly in the group 67 years and more) in the years 2000 – 2050 (white paper 2013:29 p. 41)

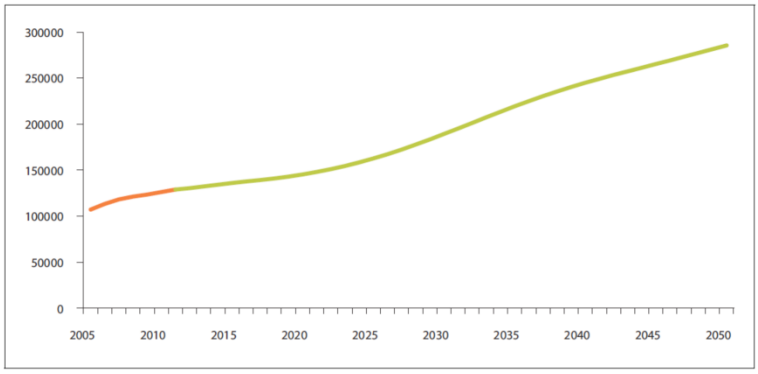


Figure B. 2Projections of personnel needs in the care sector 2012-2050 in the number of FTEs

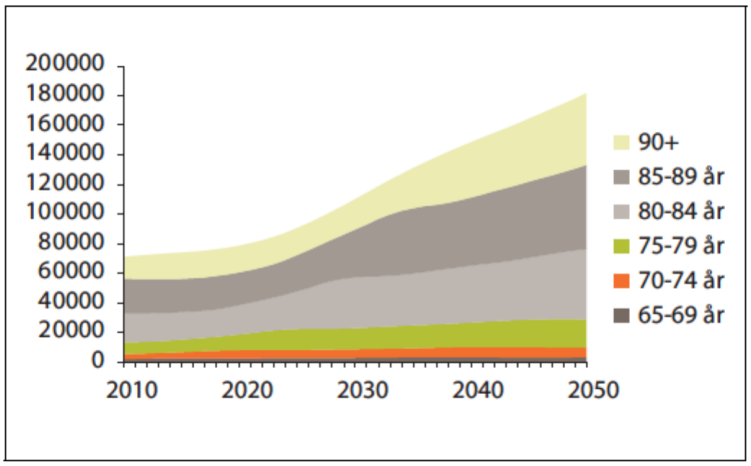


Figure B.3 The number of people with dementia projected from 2010 to 2050.

8.3 APPENDIX C: List Of Policy Enablers

Country	Name of Agency	Type of Organization	Description of Role	Impact
Austria	Ministry of Labour, Social Affairs and Consumer Protection (BMASK)[1]	Ministry	The Ministry of Labour, Social Affairs and Consumer Protection (BMASK). Their responsibility include social policy, social insurance, long-term care and initiatives for people with disabilities, senior citizens' policy, labour market policy, employment law, health and safety and consumer protection	Led to the governmental plan Ageing and future – Governmental plan for elderly persons, which represents an action assignment for the establishing, protection and enhancement for the quality of live for older adults.
	Federal Ministry for Health (BMG)[2]	Ministry	The Federal Ministry of Health is responsible for policies and issues concerning health.	Led to the implementation of eHealth and telemedicine in the Austrian Health care system. Furthermore they led to the e-Health Initiative (eHI) which aims lie in the development, harmonization and codification of electronic services in the health system.
	Federal Ministry for transport, innovation and technology (BMVIT)[3]	Ministry	The Federal Ministry for transport, innovation and technology (BMVIT) aims to create and develop an intelligent and efficient infrastructure and to shape and promote innovative initiatives and ICT-related R&D.	In 2007 the funded research program "benefit" with the aim to foster the use and development of ICT technologies for the ageing society was initiated. This program was set up as national backbone program for the Austrian participation in the Article 185-Initiative Ambient Assisted Living Joint Program (AAL JP).
	Austrian Federal Ministry for science and research (BMWF)	Ministry	The Austrian Federal Ministry for science and research (BMWF) is responsible for legislation and other subject matters concerning science and research.	The BMBF initiated a coordination platform for telemedicine in the Austrian health care in 2003. Major aims of this platform include areas such as the assessment and consulting of telemedicine projects, the consultancy on policies concerning telemedicine etc. [4]
	The Federal Chancellery	Government	The Federal Chancellery plays a central role in the Austrian government.	In the sense of a one-stop-shop the platform digital Austria offers

				comprehensive information about eGovernment on the following sites. This principle is extended on so many areas as possible:to be able to do electronically inquiries or to file an application, to be able to electronically receive information at any place in Austria, to ease the handling of administrative procedures.
	eHi (eHealth Initiative)[5]	Governmental induced Agency	eHealth Initiative (eHI) aims in the development, harmonization and codification of electronic services in the health system	The eHI developed 2005 a draft for the Austrian e-Health strategy
				The eHI has also established a workgroup with special focus on AAL and telemedicine.
	Austrian social Insurance system (SV)[6]	Governmental Agency	The Austria social insurance includes the compulsory sickness insurance and the old age insurance.	Due to the compulsory insurance system in Austria, the social insurance system in Austria has also an impact in the generation of policies.
	The Austrian Research Promotion Agency (FFG)[7]	Governmental agency for research funding	The FFG is the central institution for research, technology and innovation funding in Austria. It`s major aim is to enhance the cooperation between science and economy.	The program "benefit" with the aim to foster the use and development of ICT technologies for the ageing society is coordinated by the FFG.
	The Austrian Economic Chamber (WKÖ)[8]	Representation of interest	The WKÖ represents the interests of Austrian companies. They have an double role as policy enablers and policy enactors.	The Austrian economic Chamber has due to its function as representative of Austrian companies an important role and influence on policies. In November 2011 the WKÖ organized an event on new product- and service innovations in the context of demographic change[9].
	The Austrian employee Chamber (AK)[10]	Representation of interest	The Austrian employee Chamber represents the interests of the Austrian employees. The AK has a double role as policy enablers and policy enactors	The Austrian employee Chamber has due to its function as representative of Austrian employees an important role and influence on policies.
	Austrian Parliament-health committee (expert	Expert committee	To discuss substantive issues in a restricted circle. They can also call in outside experts to advise them.	

	committee)			
	Non profit organizations (Red Cross Austria, Caritas etc. see below)	Non profit organizations	These organizations offer several health and care related services. Furthermore they also provide telecare services like emergency alarms for the domicile.	As they have an important role in the health and care sector they may also play an important role as policy enablers.
Belgium	Department of Local Authorities, Social Action and Health (La Direction générale opérationnelle des Pouvoirs locaux, de l'Action sociale et de la Santé (DG05))	Regional Government Agency	The Department of Health is responsible for policy in relation to the health services. It is a department of the Walloon Government	Its department of Seniors manages the support to families and to the elderly, the organization of ambulatory care in Wallonia, ensures compliance of the institutions (accommodation and care of the elderly facilities).
	Department of Economy, Employment & Research (Direction générale opérationnelle de l'Economie, de l'Emploi & de la Recherche (DGO6))	Regional Government Agency	It is responsible in the field of research and technological development. It provides administrative support for the accreditation of centers of research.	
	National Institute for Health and Disability Insurance (INAMI Institut	Federal Government Agency	INAMI is a federal institution that plays a role in health care and disability compensation by organizing, managing and controlling the compulsory insurance in Belgium It also organizes the dialogue between the different partners.	

	National d'Assurance Maladie-Invalidité)			
	Federal Public Service of Health, Food Chain Safety and Environment (SPF santé publique, sécurité de la chaine alimentaire et environnement)	Federal Government Agency	The Agency of Primary Health Care (and Crisis Management) has the mission to provide the citizens with quality individual medical supply, as well as to regulate and organize individual medical supply according to the needs of the country.	
	The Walloon Health Observatory (OWS L'observatoire wallon de la santé)	Regional Government Agency	It has the aim to improve the health of the Walloons and precisely to improve the knowledge about health and its determinants, to provide scientific tools for the design, the monitoring and the evaluation of public health policies.	
	The Crossroads Bank of social security (Banque Carrefour de la Sécurité Sociale)	Federal Agency	Crossroads Bank has developed an electronic network linking the different social security institutions. Within the network, the Crossroads Bank is the connection between the share of information on social insurance and employers.	
	Health insurance companies	Social security insurance	They provide services of the compulsory health insurance and compensation	They already offer monitoring device services
	The Walloon Health Network (Réseau Santé Wallon (RSW	Regional Government Agency	It enables an exchange of computerized medical records (test results, medical reports, correspondence, etc.) between doctors working for the same patient. The Walloon Health Network was initiated by health professionals	

	))			
	The Walloon Institute for Evaluation, Prospective and Statistics (Institut wallon de l'évaluation, de la prospective et de la statistique (IWEPS))	Regional Government Agency	IWEPS) is a public scientific institute which supports the decision making process. By cross-scientific mission, it provides Walloon policy makers, partners and citizens information ranging from simple presentation of statistics and indicators, to in-depth analysis. IWEPS also has an advisory function for conducting prospective studies. given by the Walloon Government.	
Bulgaria	National Centre for Public Health and Analysis, Directorate "National health data and electronic health"	Government agency, Ministry of Public Health	Develops a unified medical records system for healthcare purposes, Maintains medical care statistics, Analyses the congruence of information needs of the healthcare system and available IT solutions, Prepares programmes for the creation and implementation of a unified healthcare information system, Defines the standards, integration instruments and communication rules among the healthcare information systems, Provides monitoring and evaluation of e-heatlh integration, as well of the development of and achievements of the unified healthcare information system	The agency fulfills a government mandate and reports to the Ministry of Health. However, its policy leadership role remains very unclear. The emphasis seems to be on data collection and analysis, but it is not obvious how these analyses feed into the policy-making processes. Furthermore, stakeholders widely agree proper medical informatics standards are lacking. It is not clear whether this agency could fulfill such a mandate.
	New Bulgarian University	Private university	A department at the University is involved with the research and promotion of telemedicine, and cooperates with healthcare institutions in the implementation and delivery of telemedicinal applications.	There is a small team of two at the department, who are stretched across multiple initiatives, with students sometimes also supporting research. Activities are largely project-based but are communicated as success stories to policy bodies and care providers.
	eHealth Foundation	Non-profit organisation	This is the leading NGO working on e-health, and is a closer collaborator to all governments since its inception.	Well-known and well-respected organisation among policy-makers, perceived as possessing expertise on issues of e-health and telemedicine. Leads and provides space for public policy debates involving both public

				and private sectors, service providers and decision-makers.
	Kontrax	Private company	Self-touted as a major systems integrator in the field of e-health.	Most of what the company reports refers to providing specific technological equipment not necessarily enabling or dedicate to telemedicine (i.e. computers, IT solutions, networking, information management software). Involved in a number of pilot projects for e-health, but policy-based follow-up is unknown.
	Parliamentary Committee on Healthcare	Legislative body	The Committee reviews all draft laws that have to do with healthcare, as well as any proposed amendments before final voting. It is also the place where policy discussions happen, with the participation of external experts when deemed necessary.	The Committee is very important with respect to any legislative proposals. If it does not approve a submitted draft, it is highly likely it will be voted down by plenary as well.
	National Health Security Fund, Directorate "Information systems and business processes"	Public agency	NHSF is the major institution regulating healthcare delivery and transaction costs in the country. It has its own budget, with its Chairperson elected by the Parliament.	The NHSF defines the rules and procedures for the delivery of healthcare services, as well as the entire practice of patient treatment. It funds all major public health services by care providers.
Czech Republic	Ministry of Health of the Czech Republic	Government Agency	Responsible for policy in relation to the Czech health services.	Initiated the adoption of the Legislative intentions of the eHealth projects
	Czech Medical Association of J.E. Purkyně: Czech Society of Medical Informatics and Scientific Information	Voluntary independent association of natural persons – physicians, pharmacists and other personnel in healthcare and affiliated fields - or legal entities	The basic organisational units of CzMA are professional societies formed on professional (expert) basis and fellowships of physicians formed on the territorial principle.	CzMA sees to development and spread of scientific information of medical sciences and affiliated fields, pursues utilization of this information in public healthcare with a special emphasis on preventive activities.

	Czech National Forum for eHealth	Non-governmental non-profit organization, civic association	Goal of this forum is to focus especially on expanding and rising awareness of eHealth, support of development of eHealth and support of communication in the field of eHealth.	Members of CNFeH and other experts nominated by the Forum participates on activities of working groups of the Joint coordination committee on eHealth and help to build a conception of development of eHealth in the Czech Republic.
	MEDTEL, o.p.s.	Non-governmental non-profit EHTEL-like organization (European Health Telematics Association)	Open platform for all kind of participants active in the field of medical informatics and telematics.	Permanent democratic and neutral forum where the different categories of actors (authorities in health care, health care providers, health insurers, patient associations, citizens, interest groups, companies operating in the field of Health) to meet and formulate strategies.
Denmark	GTS – Advanced Technology Group	Network consisting of nine independent Danish research and technology organisations approved by the Minister of Education.	The main function of the network is to disseminate new knowledge and technology to companies and public institutions in order to support innovation and development. Customers are private businesses as well as public authorities on national and international levels. The GTS institutes also constitute the core of the technological infrastructure in Denmark, e.g. testing facilities, certification and approval activities.	Supports research, development and innovation in Danish companies in telecare and other technologies. The GTS-institutes had in 2010 a 3,4 DKK billion turnover and served 20.664 Danish customers with about 65% being small or middle sized companies.
	Danish Regions	Interest organisation for the five Danish regions	Danish Regions performs the interests of the five Danish regions nationally and internationally.	Co-ordinates the common strategy on health-IT between and amongst the Danish regions in the Danish healthcare sector.
	The Danish Agency for Digitisation	Agency of the Ministry of Finance	The Danish Agency for Digitization has been established in 2011 to speed up the digitization processes required to modernize the Danish welfare society.	The Agency is in charge of the digitization of Denmark and is responsible for the implementation of the government's digital ambitions in the public sector.
	The Danish Health and Medicines Authority	Agency for the Ministry of Health	In Denmark, the Danish Health and Medicines Authority is the supreme authority in healthcare and regulatory control of medicines. It assists and advises the Ministry of Health as well as other authorities with the administration of healthcare services	Their task is to ensure the best possible framework for the healthcare system to prevent and treat illness, suffering and functional limitations for the individual. They follow health conditions through monitoring and evaluation and endeavour to be at the cutting edge of

			and inform Danish citizens on health issues. It is also their responsibility to ensure the availability of effective and safe medicines, medical devices and new therapies and to promote their proper use.	professional knowledge within the healthcare area.
	Local Government Denmark (LGDK)	Interest group and member authority of Danish municipalities	It is voluntary to be a member of LGDK, but nevertheless all 98 municipalities are members. The mission of LGDK is to safeguard common interests of the municipalities, assist the individual municipality with consultancy services and in addition ensure that the local authorities are provided with up-to-date and relevant information.	Co-ordinates the common strategy on health-IT between and amongst the Danish municipalities.
	The Confederation of Danish	Danish Industry is the premier lobbying organisation for Danish businesses on national and international issues.	Lobbying organisation for Danish businesses	DI is one of the strongest actors in creative business policy, this of course includes healthcare it.
Germany	Federal Ministry of Health	Government Agency	The Ministry of Health is responsible for the organization of elderly care.	The broad integration of telecare technologies is only in the beginning.
	Federal Ministry of Education and Research	Government Agency	The Ministry funded and is funding several research lines to technology development for an aging society.	Research funding
	Federal Government		The government forced several strategies (e.g. high tech strategy) with regard to the use of technology and the ageing society	Strategic function
	Federal Ministry of the Interior	Government Agency	Report on the demographic change and development of a demographic strategy	Strategic function
	Ministry for Science, Research and Art Baden-Württemberg	State Ministry	Research programs on Telemedicine	Research funding
	Ministry of Environment, Health and Consumer	State Ministry	Implementation and funding of the Telemedicine-Network regarding patients with cardiac arrhythmia (Link:	Strategic Funding

	Protection, Brandenburg		http://www.mugv.brandenburg.de/cms/detail.php/bb1.c.175311.de)	
	Bavarian State Ministry of the Environment and Public Health	State Ministry	Competence Center: Bavarian Telemed Alliance, a network for clustering different telemedical initiatives in Bavaria and providing information for relevant actors (Link: http://www.telemedallianz.de/)	Strategic funding
	Ministry of Social Affairs, Labour, Health and Demography Rheinland-Pfalz	State Ministry	Research programs on Telemedicine, e.g. the "Initiative Health-economy" that uses Telemonitoring for patients with cardiac arrhythmia (Link: http://www.rlp.de/no_cache/aktuelles/presse/einzelansicht/archive/2012/september/article/dreyer-telemedizin-projekt-verbessert-versorgung-bei-herzinsuffizienz/)	Strategic funding
Hungary	Ministry of Human Resources	Ministry	The minister is responsible for policy-making, regulation and planning in healthcare, education, culture and sport	Elaboration of government strategies: e.g. eHealth, National ICT Strategy, Semmelweis Plan on the Healthcare System
	GYEMSZI=National Institute for Quality- and organizational Development in Healthcare and Medicines	Budgetary Organization supervised by the Ministry of Human Resources	Among others: preparation of health sector IT strategy; activities in sectoral informatics and information policy; certification of medical appliances for inclusion into the social insurance reimbursement system	Authorisation of Medicine Products Drug Information Health Information, Data Health System Scan
	eVita National Technology Platform	Programme and forum	Cooperation of public and private organizations, researchers and engineers involved in technology development, applications and services related to Ambient Assisted Living projects.	Participation in national and European research projects; initiatives in strenghtening the role of ICT in telecare; rise of awareness; model-building and scenario building e.g. on the reimbursement of telecare services for those who need remote monitoring or other health assistance
Ireland	The Department of Health	Government Agency	Reponsible for health and ageing	Report: Positive Ageing - Starts Now: The National Positive Ageing Strategy

	Tilda, Trinity College Dublin	Research Centre	The Irish Longitudinal Study on Ageing (TILDAcollects information on all aspects of health, economic and social circumstances from people aged 50 and over in a series of data collection waves once every two years.	TILDA is unique amongst longitudinal studies in the breadth of physical, mental health and cognitive measures collected. This data, together with the extensive social and economic data, makes TILDA one of the most comprehensive research studies of its kind both in Europe and internationally.
	Department of Social Protection	Government Agency	The National Action Plan for Social Inclusion 2007 – 2016	commits to the goal of sufficient income for older people to enable them to enjoy an acceptable standard of living.
	The Department of Jobs, Enterprise and Innovation	Government Agency	Produced Trading and Investing in the Smart Economy (2010)	Specifically highlighted Silver Tech as a key area for action
Lithuania	Ministry of Health of the Republic of Lithuania	Government Agency	Responsible for policy creation and implementation in relation to Lithuanian Health Care System	Led the initiative of E-Health Strategy and draft of Lithuanian Health Programme
	Ministry of Social Security and Labour of the Republic of Lithuania	Government Agency	Responsible for policy creation and implementation in relation to social integration, labour and employment, social insurance, non-government sector.	Led the initiative to promote Active Ageing in Lithuania in 2012 (the year of Active Ageing in EU). Social care institutions subordinate to the Ministry of Social Security and Labour.
	Information Society Development Committee under the Ministry of Transport and Communications	Government Agency	Responsible for of shaping state policy in the development of information and communications technologies in Lithuania and coordinating its implementation	Initiated the project pipeline for e-health projects, actively participated in E-Health Strategy formation and helped to create funding schemes from EU Structural Fund 2007-2013
	Lithuanian association for telemedicine	Non governmental organisation	Started working in 2013. Is advocating the interest of healthcare institutions, doctors and experts for the provision of telemedicine services in Lithuania.	Started reviewing policy documents, initiated working group for the drafting of necessary legal acts (including above mentioned Order of the Minister of

				Health No. V-116, 2014)
Norway	Ministry of Health and Care Services	Government Agency	The ministry of health and care services has the overall responsibility for government policy on health and care services in Norway	Led the initiative of a National health plan every fourth year
	Norwegian Centre for Telemedicine	Research	NST is an internationally known organization and was chosen as a World Health Organization Collaborating Centre for Telemedicine in 2002.	Through user-oriented research and development, NST has contributed to integration of care between levels in the health sector since 1993
	The Norwegian Directorate of Health	An executive agency and competent authority subordinate to the Norwegian Ministry of Health and Care Services	Report on the implementation of Welfare technology in municipalities 2013 – 2030	
	Norwegian Board of Technology	Independent,	Independent body for technology assessment established by the Norwegian Government in 1999, following an initiative by the Norwegian Parliament (Stortinget)	Report: ” Ageing of the future and new technology”, 2008. Impact on Whitepaper 2013:29.
The Netherlands	The Ministry of Health, Welfare and Sport	Government Agency	The Ministry of Health, Welfare and Sport is responsible for policy in relation to the Dutch health services. It is a department of the Government of the Netherlands. It’s motto is ‘The Netherlands healthy and well’.	The ministry encourages care as close to home as possible; formal care and informal care. They propagate that local, accessible care should help the elderly to be independent for as long as possible. They are responsible for national public health policies.
	Dutch Healthcare Authority (NZa)	Government Agency	The Dutch Healthcare Authority supervises the Dutch Health Care market, focusing on three public interests: transparent information, accessible and affordable healthcare. She determines rates and budgets and monitors them, but also believes that within the rules organizations should have as much freedom as possible.	The Dutch Healthcare Authority takes a stand in favor of telecare and telemedicine, which can be derived from the fact that numerous reports on telecare and additions to rates have been published (as mentioned in 3.3)They have a strong impact on eHealth development by determining which treatments and types of care will be insured, and as a result whether or not there is a business case for a specific treatment or product.

	Health Care Insurance Board (CVZ)	Government Agency	The Health Care Insurance Board has four tasks: First, it is responsible for the two main laws on care, the Healthcare insurance act (Zvw), and the Exceptional Medical Expenses Act (AWBZ); second, it advises government on the statutory insurance package; third, it publicizes information on quality of insurance; and last, it advises government on updating and improving health education.	The board can decide whether or not a telecare or telemedicine solution is to be part of the statutory insured package. The CVZ has been performing their role more in the background as of late.
	National eHealth Implementation Agenda (NIA)	Various agencies	National eHealth Implementation Agenda is a report but can be considered an agency formed by the Federation of Patients and Consumer Organisations in the Netherlands (NPCF), the Royal Dutch Medical Association (KNMG) and the Netherlands Health Insurers (ZN)	The report discusses the importance of eHealth, what obstacles should be overcome and what these parties will invest in. NIA promotes eHealth development which should lead to whole array of organizations investing in telecare.
Portugal	Ministry of Health	Government department	The Ministry of Health is in charge of the proposals and implementation of the Government's general guidelines about health policies.	Working group on Telemedicine (GTT)[139]
Spain	Ministry of Health, Social Services and Equality	Government department	The Ministry is in charge of the proposals and implementation of the Government's general guidelines about health policies.	Law 29/2006 of Promotion of the Personal Autonomy and Assistance to People in Situation of Dependency)
	Regional Health Departments	Regional department	The regional organisation of health services is the responsibility of the autonomous Regions. The health planning must be based on the central administration	
Switzerland	Swiss Confer-ence of the cantonal Health boards (GDK)	Cantonal Agency	Coordinates the activity of the 26 Swiss health boards which exist on cantonal level.	By a framework agreement with the Confederation, GDK represents the cantons in the body called "eHealth Suisse"
	eHealth Suisse	Coordination Agency	Coordinates Activities between cantonal (GDK) and Federal (FOPH) level.	Coordinates the national strategy for e-health with the needs, require-ments and auto-nomy of the can-tons
	Federal Office of Public Health FOPH	Government Agency	The Federal Office of Public Health (FOPH) is the integrated centre of excellence for health. The FOPH is non-partisan in its decision-making. It creates social and economic conditions that are conducive to promoting and maintaining the good health of everyone living in Switzerland.	FOPH issued the eHealth strategy for Switzerland (2007

[139] http://spms.min-saude.pt/blog/2014/01/23/telemedicina-ja-permite-resposta-imediata-a-pedido-de-consulta/

8.4 APPENDIX D: List Of Policy Enactors

Country	Name of Stakeholder	Type of Stakeholder	Description
	Austrian older adults unions (e.g. ÖSB /PVÖ)	Representation of interest	The Austrian senior citizen unions represent the interests of older adults. Its major aim is the assurance of the health system and retirement plan in the long term. the single unions are a part of the governing body i.e. Austrian senior citizen council.
Austria	Austrian senior citizen council[1]	Governing body	The Austrian senior citizen council is the legal representation of the two million older adults living in Austria.
	AAL-Austria[2]	Association	The major aims of AAL-Austria are:
			Establishment of an AAL-Community
			Enhance the visibility of AAL in the public discussion
			Offer a platform that allows it to combine the heterogeneous stakeholders (market, user, technology)
	ÖPIA[3]	National research platform	ÖPIA (Austrian platform for interdisciplinary questions in ageing) was established to offer an interdisciplinary communication platform between science, public and politics. Therefore they are an important actor in the policy development process
	Hilfswerk[4]	Non profit organization	Hilfswerk Austria is one of the largest providers for health, care and familial services.
	Red Cross Austria[5]	Non profit organization	Red cross Austria is an important non profit organization. Providers for health, care and familial services.
	Caritas[6]	Non profit organization	The Caritas is one of the largest not profit aid organizations in Austria.
	Arbeiter Samariter Bund[7]	Non profit organization	The Arbeiter Samariter Bund provides rescue services, care services, emergency aid etc.
	Austrian Association for health and patient care (ÖGKV)[8]	Representation of interest	The Austrian Association for health and patient care (ÖGKV) is the occupational union for health and care related jobs.
	Austrian social Insurance system (SV)[9]	Governmental Agency	Due to the compulsory insurance system in Austria, the social insurance system in Austria has also an impact in the generation of policies.
	Suppliers of consumer goods (see 5.1)	Private firms, universities	The suppliers can also be seen as a kind of policy enactors as they provide customer goods and services and therefore may have an

			effect on the legislative authority.
BELGIUM	The league of health services users (ligue des usagers des services de santé (LUSS))	Non-profit organisation	The league of health services users is the independent French-speaking Belgium federation of associations of patients. Its objective is to contribute to the well being of patients and their families.
	Health Insurance companies	Social security insurance	The insurance companies have a hybrid status giving them the opportunity to represent the interests and the rights of the patients.
	The Walloon Council Aging (Conseil Wallon du Troisième âge)	Governing body	The regional Minister of health has to consult them before decisions are taken concerning the regional policy for the eldery.
	Walloon senior citizen unions	Non-profit organisation	The Walloon senior citizen unions represent the interests of older adults. Its major aim is the assurance of the health system and retirement plan in the long term. It closely works with the local consultative councils of the elderly people)
BULGARIA	Bulgarian Physicians' Union[1]	Nonprofit	Represents physicians and dentists in the negotiation processes with the state and the State Health Insurance Health Plan on issues of practice management, payment rules from health insurance, ethics, etc.
			Currently deemed as "ignorant" of e-health opportunities, with very low levels of awareness and interest in promoting/applying.
			The organisation develops medical standards, but only based on areas of specialisation.
	National Patients' Organisation	NGO – association of different patients' association	The Association represents other associations of people who require specialized medical care, typically chronically or terminally ill, and whose treatment options are not sufficient or properly delivered. It acts as an advocate for patients in their relationship to healthcare institutions, and advocates for the rights of patients, access to higher quality healthcare, access to proper medicine and treatment technology.
CZECH REPUBLIC	Czech Association of Patients[1]	Civic association	CAP is involved in the preparation of laws, decrees and regulations in cooperation with the Ministry of Health; promotes patient representation in the supervisory boards of medical facilities and health insurance companies, and keeps a free counselling centre for patients
	Association of Diabetic Patients of the Czech Republic[2]	Civic association	The mission of the ADP is to assist diabetics in the Czech Republic in their full integration into social life with health, social and other activation programs and to participate in educating the public about

			diabetes.
	Czech Alzheimer Society[3]	Civic association	CAS is based on encounters and cooperation in the field of gerontology experts (doctors, nurses, social workers, social work students and others) who have dealt with the issue of people with dementia. Among its members, there are as well family members and care providers.
	Parkinson Society[4]	Civic association	Members of the PS meet in clubs operating in the major Czech cities. These regional clubs organize a large number of events for Parkinson's patients.
	Senior Citizen Council of the Czech Republic[5]	Civic association	Confederation of organizations that are trying to help senior citizens.
DENMARK	Danish Patients[1]	Danish Patients is an umbrella organization for 79 patient associations in Denmark, representing a total of 862.000 members.	Danish Patients aims to secure the best possible conditions for patients in the Danish health care system, by developing evidence based policies for user involvement and safeguarding patient interests in relation to authorities and the public. Danish Patients co-operates with health authorities, research institutions and other healthcare organizations to create future health care services which take patient interests into consideration.
			The vision of Danish Patients is to contribute to a patient-focused healthcare system of international standard. This is achieved through a targeted effort to put patient involvement high on the political agenda thereby providing decision-makers with a foundation for making patient-focused decisions.
			Danish Patients is currently involved in a number of health policy issues, the most prominent at the moment being integrated health care delivery, rehabilitation, patient safety and user involvement.
			Danish Patients is structured as a political organization with the executive council as the highest decision-making organ. The daily work of promoting the aim of the organization is conducted by experts from the member organizations and the secretariat of Danish Patients.
	DaneAge Association[2]	DaneAge Association is a national membership organisation.	DaneAge has 609,000 members (the Danish population is 5.5 million people)
			· 30 % of all Danes aged 50+ are members of DaneAge
			· Membership is open to all adults (age 18+)
			· DaneAge is independent, non-partisan and neutral regarding party politics, religion, and ethnic origins

			DaneAge has 217 local chapters across Denmark
			DaneAge has 12,200 volunteers working in the local chapters, doing voluntary social work, providing local membership activities, local advocacy, etc.
			DaneAge's headquarters in Copenhagen has a staff of 105 (FTE)
			The mission of DaneAge is to fight for a society in which all can live long and good lives.
	The National Volunteer Centre in Denmark[3]	Volunteers and voluntary social organisations	Provides services for volunteers and employees in voluntary social organisations, associations, groups and networks – both nationwide and local.
			These organisations then in turn help caring out voluntary work for elder (help with the mobile phone or it support in general)
GERMANY	Urban and Communal stakeholders, e.g. Karlsruhe[1]	Urban district	Implementations of several projects regarding telecare/ telemedicine in the urban district of Karlsruhe
			Many municipalities have similar projects and initiatives, a broad overview gives the "ehealth@home map"
	Die Johanniter/ die Malteser[2]	Voluntary humanitarian organizations	Both organizations provide in-home emergency systems
	TÜV[3]	Technical Supervisory Agency	The agency deals with questions of information security regarding telemedicine
	The Federal Commissioner for Data Protection and Freedom of Information, Peter Schaar[4]	Federal commission department ("Bundesdienststelle")	General questions of data security, relevant examples: electronical medical records, the electronic patient card etc.
	Klinikum Herford[5]	Hospital	Uses telemedicine in their stroke unit
	Universitätsklinikum Freiburg[6]	University medical Center	Offers telemedicine to foreign patients who can't travel to Germany
	Universitätsklinik Ruhr-Universität Bochum[7]	University medical Center	IFAT: Institute of applied Telemedicine
	Techniker Krankenkasse[8]	Health insurance company	Interest in the further development of home-based care
	AOK[9]	Health insurance company	Cooperation to implement telemedicine for patients with diabetes
	ZTG Zentrum für Telematik im Gesundheitswesen GmbH (Center for Telematic in the public health sector)[10]	Public Private Partnership	Competence Center, Providers of telemedical methods
	IAT – Institute for Labour and Technology[1]	Research institute	Completed project: e-healt@home, where projects concerning telemedicine are systematically mapped

	VDE (Association for Electrical, Electronic & Information Technologies)[2]	Scientific association	TMZ (service center of telemonitoring): provides hard- and software for telemedical purposes, controls and advises manufacturers.
	German Home Care and Nursing Society[3]	Professional association	No initiatives found
	Nursing services	Care providing companies	No initiatives found
	FZI – Research Center for Information Technology at the Karlsruhe Institute of Technology[4]	Research institute	Conducts several projects in the areas of telemedicine, Ambient Assisted Living (AAL) and medical information technology
HUNGARY	Local governments[1]	Budgetary organizations	Municipalities with more than 10.000 inhabitants are eligible for state financing in providing social alarm service for their inhabitants. Local governments co-finance this service up to a sum of HUF 40,000 (approx. EUR 160) per person per year. Recipients are requested for co-payment
			if this sum is exceeded, but only up to a maximum 2% of their monthly income.
			About 3-4% of people aged 65 and over are supplied with social alarm devices.
	"Fill Years with Life" Hungarian Association of Pensioners' Clubs and of Elderly People [2]	A public benefit (civil) organization	The Association was founded in 1989. It was aimed at drawing the attention of the society and also of individuals to the challenges of ageing. The Association is engaged e.g. in a) social activities, incl. family support and care for the elderly; b) advocacy and representation of the elderly; c) health promotion and recreation for the elderly.
	Seniors' Centers[3]	Advisory bodies of local governments	The Centers are responsible for a) gathering information about living conditions of elderly people in their city (settlement), b) building networks with civil organizations, c) warning the relevant bodies and the departments of the local government if their measure and/or assistance is needed for the aged population.
IRELAND	Age and Opportunity	National voluntary organisation	Age & Opportunity deliver programmes to promoting older people's active involvement in areas ranging from the arts to physical activity; delivering education programmes to challenge negative attitudes to ageing; confidence-building and influencing and enabling development within the ageing sector.
	The Carer's Assoication	National voluntary organisation	The Carers Association is Ireland's national voluntary organisation for and of family carers in the home. Family carers provide high levels of care to a range of people including frail older people, people with severe disabilities, the terminally ill and children with

			special needs
	Age Action Ireland	Charity	Age Action is a charity which promotes positive ageing and better policies and services for older people.
	Society of Vincent de Paul	Charity	The Society of St. Vincent de Paul is the largest, voluntary, charitable organisation in Ireland. Its membership of 11,000 volunteers throughout the country are supported by professional staff, working for social justice and the creation of a more just, caring nation. This unique network of social concern also gives practical support to those experiencing poverty and social exclusion, by providing a wide range of services to people in need.
	Irish Centre for Social Gerontology NUI Galway	University Research Centre	The ICSG is a multidisciplinary research centre on ageing at NUI Galway. ICSG focuses on research, education and training in the field of social gerontology in Ireland and internationally. The mission is to develop and promote social and economic aspects of ageing in Ireland to support a holistic and positive view of ageing and act as a source for all involved in ageing in Ireland
	Third Age Foundation	Voluntary community organisation	Third Age plays a role in the championing of older people locally, nationally and internationally in an interconnecting range of initiatives, including the challenge of negative perceptions and the representation of older people at policy-making fora.
	Alzheimer Society of Ireland	National voluntary organisation	Extensive national network of branches, regional offices and services that aims to provide people with all forms of dementia, their families and carers with the necessary support to maximise their quality of life.
	Irish Senior Citizen's Parliament	non-partisan political organisation	The Parliament is a non-partisan political organisation working to promote the views of older people in policy development and decision-making. The Parliament is run by older volunteers who are elected annually at the Annual Parliament Meeting by delegates from affiliated organisations. The ISCP currently has 400 affiliated organisations whose memberships combine to a total of 100,000 individuals. This membership means the ISCP has a genuine mandate to be the Voice of Older People in Ireland.
	Active Retirement Ireland	Voluntary Organisation	Active Retirement Ireland is a national network of over 500 local Active Retirement Associations with over 23,000 members. ARI believes that older people have the right to be full and participative members of our society. ARI combats ageism through the reality and everyday work of the self-organised local associations and the

			regional councils. ARI has a large voluntary base with local, regional and national voluntary committees.
LITHUANIA	Medard Czobot university of Third Age[1]	NGO	One of the leading organizations which unite active seniors and encourages the exchange of information, lectures about healthy living, active ageing, etc. Recently started making steps to participate in policy making.
	Lithuanian Association of elderly people[2]	NGO	Organization unites more than 36 thousands elderly people. Together with "Red Cross" they prepared careers who help elderly ill people. Are involved in civil initiatives such as strikes, meetings. Has a network of divisions across all Lithuania.
	"Bočiai" community[3]	NGO	One of the oldest and strongest organizations, which unites active seniors and promotes active ageing through the participation in cultural life and education. Recently they expanded their reach towards knowledge in medicine, healthy living and economy related fields.
	Family Carers[4]	Care System	Recognises the role that family carers play in supporting government policy of caring in the home and community and suggests that carers required a range of supports including financial, education and training
	Social Support Divisions in the municipalities[5]	Municipality	Provides support to people who can't take care for themself.
	The Lithuanian Diabetes Association[6]	NGO	Provides mutual aid and assistance to all diabetics, promotes the spread of knowledge and the proper treatment of diabetes. Plays the leading part in realization of the National Diabetes Programme. Has their own newspaper "Diabetas" which keeps readers in touch with new methods, legislation, etc.
	Lithuanian Parkinson disease society[7]	NGO	Unites people with Parkinson's disease, their family members and other interested people. Represents their interests in society and governmental institutions.
	Lithuanian Heart Association[8]	NGO	Educates the society on heart-related diseases, their prevention and treatment
	Lithuanian Alzheimer disease association[9]	NGO	Educates the society on Alzheimer disease related issues. Participates in many policy related working groups.
	Lithuation Association of Private HealthCare providers[10]	NGO	Unites more than 100 private healthcare providers. Actively participates in policy making, defending interests of private health care providers and promoting the development of private medicine

	Representational board of Lithuanian Patients organizations[11]	NGO	"Umbrella" organization for more than 30 Lithuanian organizations defending patients rights. Is a strong lobby and advocacy organization
	Kaunas University of Medicine[12]	High Education institution	Kaunas University of Medicine is the largest institution of medical education and training in Lithuania Kaunas University of Medicine has 5 faculties: the faculty of Medicine, the faculty of Odontology, the Faculty of Pharmacy, the Faculty of Nursing, and the Faculty of Public Health. Kaunas University Hospital and 4 research institutes complete the structure of the university. Teaching staff of the University consists of more than 700 instructors and research workers. The student body is over 4000 students. Geriatric Clinic has been reorganized from the Internal Medicine Clinic in 1995 in relation with reorganization of the process and content of the studies. The main activities of the clinic are (i) education on geriatric for medical students, nursing students, clinicians as part of continuum education, (ii) research focused on health and social care provision of the elderly aiming quality of life, and (iii) clinical practice in Kaunas Clinical Hospital
	Vilnius University Hospital Santariškiu Klinikos [13]	Healthcare provider	Vilnius Unversity Hospital Santariskiu Klinikos (Santariškių Klinikos) is one of the major hospitals inLithuania encompassing the provision of medical care in almost all key areas.
			Santariškių Klinikos is currently oriented towards five priority scientific and clinical activity trends:
			1. Heart and vascular medicine;
			2. Transplantology;
			3. Oncohematology, oncology and surgical oncology;
			4. Radiology and nuclear medicine;
			5. Children's diseases and rehabilitation.
NORWAY	The Norwegian Labour and Welfare Administration- aid center (hjelpemiddel sentrale)	government	It is an aid center in each county. They are resource and center of expertise for aid provision and facilitation, as well as interpreters for the deaf and deaf-blind. The aid center has overall responsibility for coordinating and disseminating aids and accessibility needs within their own county.[1]
	The Norwegian Association of Local and Regional Authorities (KS).	Care System	Is the employers' association and interest organisation for municipalities, counties and local public enterprises in Norway. It recognises the role that family carers play in supporting government policy of caring in the home and community and suggests that carers required a range of supports including financial, education

			and training[2]
	The senior network		The senior network shall:work to promote seniors' active use of information and communication technology (ICT) to enhance their security and integration in modern society.work to ensure all seniors who wish, training, support and guidance in the use of ICT.
			be a professional and social network for members.work to influence ICT development in Norway for the benefit of seniors.be a good partner for other companies, both private and public, working within the association's interest.[3]
	The national council for senior citizenz		The National Council for Senior Citizens is an advisory body for public authorities and national institutions. It is appointed by the Government and consists of 15 members.The council focuses on issues concerning living conditions of senior citizens and their opportunities to take part in working life and society at large. In this context senior citizens refers to people who are over 50 years old.[4]
	The Norwegian Red Cross	voluntary	The Red Cross organizez a “Visiting Service” - visits to people who want support and encouragement in their daily lives.[5]
	The Centre for eHealth and Health Care Technology	Research	The Centre for eHealth and Health Care Technology is meant to be an arena for teaching, research, development, and testing of new technology for use in the health - and social - sector, with a focus on the user perspective.They are working to make everyday life easier in today’s health society by developing technical solutions like for instance smart house solutions with mobile home services.[6]
	Sintef IKT	Applied Research	Sintef is a leading research institution on the needs for and use of welfate technology in Norway. [7]
	Bergen University College	Research	They do research on the introduction of care technology, and educates health professionals (both ordinary students and continuing education) in care technology and organizes an annual national conference on care technology.[8]

THE NETHERLANDS	Dutch association for residential and home care organizations and infant and child health clinics (Actiz); Dutch association of mental health and addiction care (GGZ); Dutch Association of Healthcare Providers for People with Disabilities (VGN); The Federation of Patients and Consumer Organisations in the Netherlands (NPCF)	Trade organizations	In this program the listed trade organizations for residential, mental and home care outline the possibilities for telecare in the respective care environments[1]
	The Federation of Patients and Consumer Organisations in the Netherlands (NPCF)	Patient organization	The Federation of Patients proves to be in favour of telecare because of its alleged enhancement of independence of patients. The Federation is therefore also in favour of self-management by patients, which is enforced by technology as well they claim.[2]
	Health insurance companies: Achmea, Menzis	Health insurance companies	There is no collective action from the Netherlands Health Insurers (ZN), but individual health insurance companies Achmea and Menzis promote eHealth adoption by setting up eHealth programs. Motiva by Achmea provides telemonitoring for chronic hartfailure, and KOALA by Menzis is a pilot project providing care at distance. [3]
	Sensire; Zuidzorg	Home care	Home care associations like Sensire and Zuidzorg offer care at a distance services via computer or tablet devices.[4]
PORTUGAL	Red Cross (Cruz Vermelha Portuguesa)	NGO	Humanitarian institution of voluntary character and of public interest which promotes and participates in health programs and in actions affecting public health.
	Association for the Promotion and Development of the Information Society	Non-profit foundation	Association which develops and supports initiatives fostering the debate and the knowledge on the Information Society
	Portugal Health Cluster [140]	Public private partnership	To turn Portugal into a competitive player in the research, design, development, manufacturing and commercialization of health-related products and services,
	ICT Aging Well[141]	Public private partnership	The AgeingWell website is a reference point for key stakeholders in the ICT & Ageing Sector. It aims at creating a Community of

[140] http://healthportugal.com/about-us
[141] http://www.ict-ageingwell.net/

			Actors interested in improving the life of older persons by promoting the market uptake of ICT solutions for Ageing Well.
Spain	Sociedad Española de Geriatría y Gerontología (Spanish Society of Geriatrics and Gerontology)	Non-profit scientific society	National society dedicated to welfare of the elderly people. It advises and collaborates with institutions dealing with health and social problems derived from the ageing. [1]
	Asociación Española para el estudio científico del envejecimiento saludable (AECES)	Non-profit association	Association dedicated to the promotion of the scientific study of the ageing phenomenon and of the integral promotion of the health of the old people through the multiprofessional contribution, the improvement of the health assistance and the prevention, promotion of the health and rehabilitation.[2]
	(Spanish Association for the scientific study of the healthy ageing)		
	Cruz Roja (Spanish Red Cross)	NGO	Humanitarian institution of voluntary character and of public interest which promotes and participates in health programs and in actions affecting public health. European Year for Active Ageing 2012
			www.envejecimientoactivo2012.es
	Foundation for Health, Innovation and Society	Non-profit foundation	Foundation which develops and supports initiatives fostering the debate and the knowledge and technology transfer amongst the social, health and economical agents[3].
Switzerland	Curaviva	Association of Nursing Homes and Care Institutions	Curaviva promotes policy issues related to the needs of elderly and frail people on a national level. [1]
	Pro Senectute	Charity	Pro Senectute is the largest organization in Switzerland that provides services for elderly people. It is dedicated to the maintenance or the improvement of life quality of the elderly. [2]
	Schweizerischer Seniorenrat	Charity	The Swiss Council of Senior Citizen represents the economic and social concerns of elderly people at the Confederation, associations, institutions, media and the general public. [3]
	Spitex Verband Schweiz	Umbrella association of Non-profit homecare suppliers	„Spitex“ provides health care, household support and health counseling at home (from German “spitalexterne Betreuung“ which means “care outside the hospital“). The national Spitex association represents the interests of non-profit homecare suppliers at the general public, politics, authorities, and partner organizations. [4]
	Swiss Association for Tele-medicine and eHealth	Professional association	The association promotes the development and application of telemedicine and eHealth, the evaluation of its impact and the advancement of formation and research in telemedicine and eHealth. [1]

Additional References

[1] http://www.seniorenrat.at/aktuell
[2] http://www.aal.at/
[3] http://www.oepia.at/
[4] http://www.hilfswerk.at/
[5] http://www.roteskreuz.at/
[6] http://www.caritas.at/
[7] http://www.samariterbund.net/startseite/
[8] http://www.oegkv.at/home.html
[9]http://www.sozialversicherung.at/portal27/portal/esvportal/start/startWindow?action=2&p_menuid=2&p_tabid=1
1[1] E-health: http://www.iat.eu/ehealth/index.php Karlsruhe: http://www.iat.eu/ehealth/index_detail.php?link=Karlsruhe&PHPSESSID=53fceb816e8370d6af9e38f2641ca98e
1[2] Johanniter: http://www.johanniter.de/die-johanniter/johanniter-unfall-hilfe/juh-vor-ort/lv-baden-wuerttemberg/johanniter-alltagshelfer/hausnotruf/
Malteser: http://www.malteser-hausnotruf.de/?gclid=COmxu4GOtrgCFU2R3godFToAWA
1[3] TÜV: http://www.tuev-sued.de/uploads/images/131349698940344837 1010/telemedizin-med7-8-11-.pdf
1[4] Peter Schaar: http://www.bfdi.bund.de/DE/Themen/TechnologischerDatenschutz/TechnologischeOrientierungshilfen/Artikel/DatenschutzUndTelemedizin-AnforderungenAnMedizinnetze.html?nn=408912#Start
1[5] Herford: http://www.klinikum-herford.de/kliniken/klinik-f%C3%BCr-neurologie/klinikportrait/schlaganfallmedizinstroke-unit/stroke-unit-schlaganfallzentrum/
1[6] Freiburg: http://www.uniklinik-freiburg.de/onlinemagazin/live/aktuelles/Telemedizin.html
1[7] Bochum: http://www.hdz-nrw.de/institute/angewandte-telemedizin/
1[8] TK: http://www.tk.de/centaurus/servlet/contentblob/568162/Datei/111380/Pr%C3%A4sentation%20Telemedizin.pdf11
1[1] IAT: http://www.iat.eu/index.php?article_id=3&clang=1e-health@home project: http://www.iat.eu/ehealth/index.php
1[2] VDE: http://www.vde.com/de/Technik/vdemedtech/Testing/QM-Zertifizierung/Seiten/Telemedizin.aspx
1[3] DPV: http://www.dpv-online.de/
1[4] FZI: http://www.fzi.de/forschung/anwendungsfelder/detail/afeld/gesundheitswesen/
1[1] Magyar Közlöny (Official Journal of Hungary), 2013.03.28. and EC: ICT & Ageing. European Study on Users, Markets and Technologies. Final Report. January 2010
1[2] Website of the Center of the Association http://www.eletetazeveknek.hu/?page_id=31
1[3] Website of Senior Center Szeged http://www.seniorcenter.hu/idsuegyi-tanacs.html

[1] Magyar Közlöny (Official Journal of Hungary), 2013.03.28. and EC: ICT & Ageing. European Study on Users, Markets and Technologies. Final Report. January 2010
[2] Website of the Center of the Association http://www.eletetazeveknek.hu/?page_id=31
[3] Website of Senior Center Szeged http://www.seniorcenter.hu/idsuegyi-tanacs.html

1[1] http://www.treciojoamziausuniversitetas.lt/
1[2] *http://rekvizitai.vz.lt/imone/lietuvos_pagyvenusiu_zmoniu_asociacija/, and http://www.yrasalis.lt/desimt/visuomenes-veikejai/grasilda-makareviciene/*
1[3] http://www.vilniausbociai.lt
1[4] National Action Plan for Social Inclusion 2007-2016
1[5] http://www.valstybe.com/

1[6] http://www.dia.lt/1111111
1[1] www.nav.no
1[2] http://www.ks.no/tema/Om-KS/KS-in-English/About-KS/
1[3] http://www.seniornett.no/Seniornett/Om-oss/Vedtekter
1[4] http://www.seniorporten.no/English/The+National+Council+for+Senior+Citizens.200549.cms
1[5] www.rodekors.no
1[6] http://www.ehealth.no/
1[7] http://www.sintef.no/Projectweb/Velferdsteknologi/1
[1] www.nav.no
[2] http://www.ks.no/tema/Om-KS/KS-in-English/About-KS/
[3] http://www.seniornett.no/Seniornett/Om-oss/Vedtekter
[4] http://www.seniorporten.no/English/The+National+Council+for+Senior+Citizens.200549.cms
[5] www.rodekors.no
[6] http://www.ehealth.no/
[7] http://www.sintef.no/Projectweb/Velferdsteknologi/
1[1] Program Care at a distance close by (2007-2010)
1[2] Health 2.0; Future and meaning of e-health for care consumers.(2008)
1[3] Achmea website (2013); Menzis website (2013)
1[4] Sensire website (2013); Zuidzorg website (2013)
1[1] 100 Recomendaciones de calidad para el servicio de teleasistencia domiciliaria (100 Quality Recommendations for the Home-based Telecare service) www.segg.es/criterios_c
1[2] European Year for Active Ageing 2012
www.envejecimientoactivo2012.es
1[3] Own
1[1] www.curaviva.ch -> Menschen im Alter (elderly people)
1[2] www.pro-senectute.ch
1[3] www.ssr-csa.ch
1[1] www.sgtm.ch