European Commission

Innovation for Active & Healthy Ageing

European Summit on Innovation for Active and Healthy Ageing, Brussels, 9-10 March 2015

Final Report

Collaborating Partners

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Table of Content


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GIRAFF


CHAlliance


Workshop
Investment to Fuel innovation
Financing ICT innovation in AHA.
New funding opportunities &
models from the investment
world

Introduction

The first European Summit on Innovation for Active and Healthy Ageing took place in Brussels on 9 and 10 March 2015. Over 1400 leaders from government, civil society, investment and finance, industry and academia discussed how Europe can transform demographic change into opportunities for economic growth and social development. The event was organized by the European Commission in collaboration with the Active and Assisted Living (AAL) Programme, AGE Platform Europe, the European Connected Health Alliance (ECHAlliance) and Knowledge for Innovation (K4I).

The Summit built on the achievements of ongoing EU initiatives:

1. *The European Innovation Partnership on Active and Healthy Ageing (EIP-AHA) launched in 2012;*
2. *"More Years, Better Lives", the Joint Programming Initiative (JPI) which enhances coordination and collaboration between European and national research programmes related to demographic change;*
3. *Horizon 2020, the EU Research and Innovation Framework programme, in particular funding under Societal Challenge 1 for innovative ICT solutions for active and healthy ageing;*
4. *The Active and Assisted Living Programme, where Member States in cooperation with the European Commission fund projects on applied research for innovative ICT-based products, services and systems for ageing wellv.*

European Commissioners Günther Oettinger for the Digital Economy and Society and Carlos Moedas for Research, Science and Innovation both addressed the Summit. They underlined how important it is for Europe to tackle the challenges and seize the opportunities of demographic change.

Introduction

The Summit aimed to mobilise and engage a large and diverse set of stakeholders in the co-creation of the future EU agenda on innovation for active and healthy ageing.

To kickstart this collaborative process, the European Commission launched 5 challenges ahead of the Summit:

1. **How can Europe translate innovation into economic growth and job-creation in active and healthy ageing?**
2. **How can Europe mobilise public and private investment into innovation for ageing?**
3. **How can Europe innovate health and care systems to meet the needs of a growing ageing population?**
4. **How can technology breakthroughs help shape Europe's response to the needs of an ageing society?**
5. **How can an inclusive European society meet the individual needs of its ageing citizens and their carers?**

During the Summit each of these challenges was discussed in thematic debates, workshops and action-oriented work stream sessions. This report outlines the main discussions at the Summit and identifies some of the action areas that merit further development.

The key areas of action identified for the coming 12-24 months are identified below:

2015-2016 Action Areas

Summary Of Conclusions

European Summit On Innovation For Active & Healthy Ageing, 9-10 March 2015

HOW?

Innovating...

Technology

Systems

Society

SCALING UP INNOVATION ACROSS EU

- EC Co-Financing Of Public Procurement Of Innovation (PPI)
- Rapid Transfer Of Innovation Across Regions
- Mobilising New Public Investments

ADVANCING THE SILVER ECONOMY STRATEGY

- EC to Launch Joint Initiatives on Age-Friendly Homes, Integrated/Connected Care at Home and Silver Tourism
- New EC Action on Accelerating Adoption of Standards & Promote Interoperability
- New EC Study on Potential of the Silver Economy

BOOSTING INVESTMENT & ACCESS TO CAPITAL

- Ease Access to "Growth Capital" by Innovative Start-Ups
- Develop Joint Public-Private Investment Strategies For Innovative Projects (H2020, AAL Programme)
- Optimize EC Support Tools (PPI)

BUILDING ON STAKEHOLDER PLATFORMS

- European Innovation Partnership on Active & Healthy Ageing (EIP-AHA)
- Active and Assisted Living Programme (AAL Programme)
- European Institute Of Innovation & Technology – Knowledge And Innovation Community (KIC) -Health & Ageing
- Public-Private Partnerships (Internet of Things, Robotics, 5G, Big Data, IMI, others)

WHO?

Partnerships Between...

EU

Member States

Public Authorities

Businesses

Financial Institutions & Investors

Civil Society

Organisations

Agenda for Active and Healthy Ageing

Ageing and the EU Agenda for the Digital Economy and Society

Commissioner Günther Oettinger set the scene for the event with his opening statement. He emphasised the continued commitment of the new European Commission to support innovation as well as the European Innovation Partnership for Active and Healthy Ageing.

Demographic change opens a wide variety of new opportunities for European innovators and industrial players to develop new products and services, tailored to the needs of a growing number of ageing consumers. Europe is well-placed to seize the opportunities of the global Silver Economy and translate these into economic growth and jobs. This Summit will help the European Commission gather vital inputs on how to transform this opportunity into reality.

The socio-economic shifts, resulting from demographic change, cannot be overlooked by European leaders. The changing ratio between the "working" and "inactive" population raises the question of how to keep national budgets sustainable. To achieve that it is necessary to reform and innovate our systems for the delivery of health and social care. Technological and systemic innovation together can increase the efficiency of our health and care systems, improve the quality of life of the older population and, at the same time, create new opportunities for innovators.

One should not overlook a dimension which is not necessarily within the remit of economic players, health or care systems – and that is the inclusiveness of our society and how we will effectively respond to the needs of an increasingly significant part of our population. We must ensure that the ageing population will remain a valuable asset and active contributor in our society.

Commissioner Oettinger, responsible for the digital economy and society, invited the Summit to reflect on the limitations of technological innovation as well as the immense opportunities for social inclusion that digital technology can bring to the ageing population and their carers, and to ensure that every individual – irrespective of age – can contribute to our future.

Innovation for Active and Healthy Ageing and the EU Agenda for Research, Science and Innovation

Commissioner for Research, Science and Innovation Carlos Moedas started his encouraging keynote speech by saying that these days "Life begins at 70". He emphasised that investments made in research, science and innovation will re-define the economic opportunities created for present and future generations as well as the future of health and care systems.

He highlighted the EU efforts to mobilise stakeholders, in particular, through research partnerships. The 2 Innovative Medicines Initiatives (IMI) are pioneering an entirely new scale of Public-Private Partnership between the European Commission and the pharmaceutical industry.

The European Commission has shared costs with industry and has leveraged over 5 billion euros of investment in health issues that matter to European society.

Commissioner Moedas also congratulated the Summit participants on the work they had conducted through the European Innovation Partnership on Active and Healthy Ageing. As the first of five European Innovation Partnerships, the EIP has taken important steps in mobilizing stakeholders, bringing together the demand and supply side of innovation, and ensuring that the solutions being developed can be applied in practice and meet market demand.

The challenge is turning knowledge into value, while delivering better public services to citizens, creating economic growth and jobs. For all European Innovation Partnerships the word Partnership is the essence.

The Commissioner concluded quoting Henry Ford: "Coming together is a beginning; keeping together is progress; working together is success".

A Strong Regional Dimension in Innovation for Active and Healthy Ageing

The recently elected President of the Committee of the Regions, Markku Markkula opened the second da of the Summit and reminded the audience that Europe's response to demographic change requires a paradigm change: there is a growing need for societal innovation, underpinned by a new model of collaboration between different activities and initiatives across the EU and with the European regions.

Constant interaction is needed between EU policy making and regional policy developments, in particular regarding Smart Specialization. At the heart of this new paradigm should be a regular practice of working together. We need to enable innovation actors to maximise the benefits of Horizon 2020; to incentivise the emergence of a critical mass of high quality pioneering initiatives. This requires that the different instruments and partnerships of the EU all support the effective deployment of innovation for Active and Healthy Ageing.

A lot needs to be done to transform the wealth of EU support and investments in economic growth and social well-being. A comprehensive strategy to seize the opportunities of the Silver Economy would be a first step in that direction.

Collaboration and bringing all stakeholders together will be key. Today we are all subscribing to the need to work together to face the challenges and seize the opportunities of demographic change.

Thematic Sessions

Thematic Session 1

Sustainable health and care systems through innovation

As the European population ages, the sectors for health and social care will have to go through a process of transformation to cope with new demands in a new context. The existing models of health and care delivery must be increasingly integrated and be tuned to the needs of the individual at the center (the patient, the user, the carer).

Technology can play an important role enabling this integration process, but innovation is required at all levels, including organizational and even political. The sustainable health and care system of the future allows efficiencies and optimal resource-management, and facilitates a coherent system of prevention and early intervention that will minimise the cost of 'late' interventions.

Actions in relation to our health workforce should be taken today. The health professional of tomorrow will need different competences (skills, knowledge and attitude) than the health professionals possess nowadays. Policy-makers, health professionals and educational institutions should identify and anticipate future needs of health and care professionals (their numbers and their competences, including digital skills).

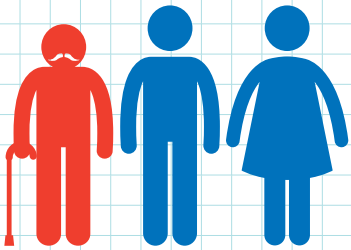
The sustainability of health and care systems of the future has to be underpinned by a collaborative approach amongst regional, national and EU authorities, amongst various ministries within Member States and even between public authorities and industry. Public authorities must explore how the market, industry and research bodies can deliver the innovation that will support the health and care delivery of the future.

The public sector and the market must learn to work closely together to ensure that there is a mutual understanding of "needs" and "innovative solutions" to meet the identified needs. The cross-sectorial and public-private dimension of health and care delivery must be strengthened. The most challenging, yet inevitable, of all "changes" is probably the required change in health and care culture.

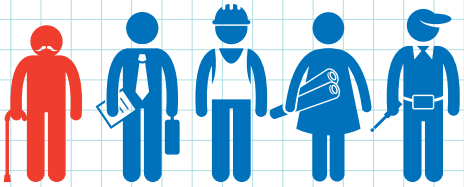
Systemic Innovation has to be at the heart of transforming Europe's future health and care models.

The Silver Economy

Europe is **ageing**.

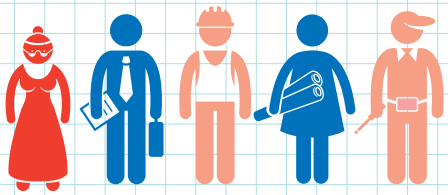


By **2060**
one in three Europeans
will be **over 65**.



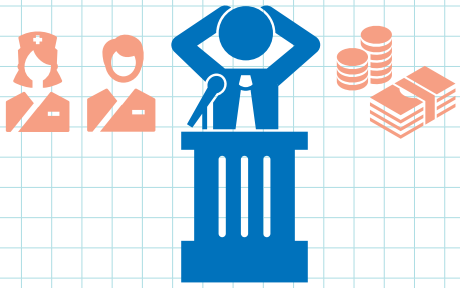
Today

The ratio of **working** people
to the **'inactive'** others
is shifting
from **4 to 1 today**
to **2 to 1** by **2060**.

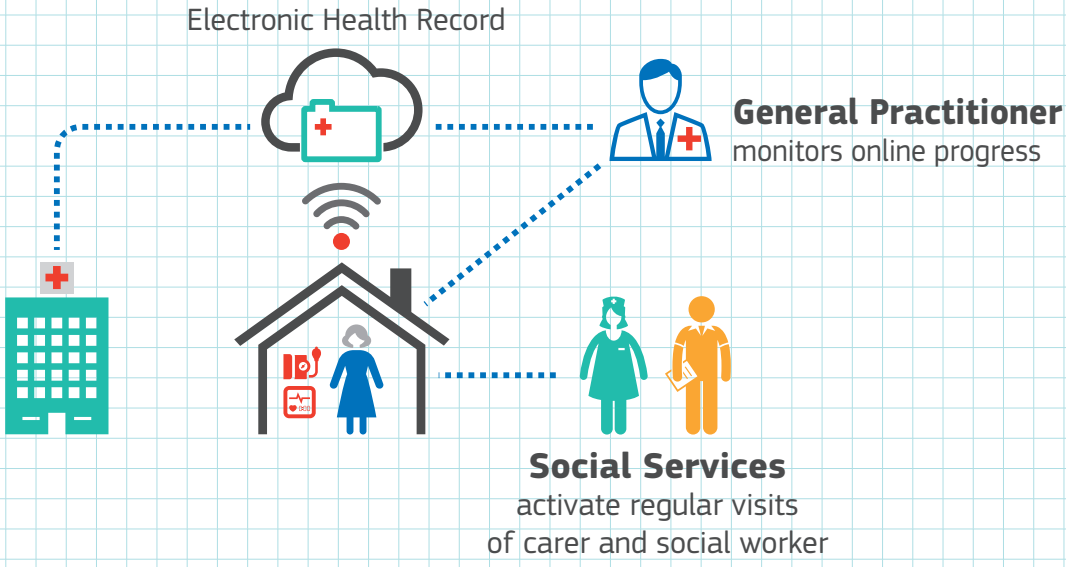


2060

Costs for care are **rising sharply**.
If we don't change our systems for health and social care,
we will not have the money and **the people**
to **guarantee** a **good** and **healthy life for all**.



If we reinvent
our systems for
health and social care,
innovative new
ICT-products
and **services**
can help us deliver **better**
and **cheaper care**
for all.



Thematic Session 2

Growth opportunities of the Silver Economy

Building on the Background Document published by the European Commission at the Summit, the Silver Economy was seen as an opportunity for economic growth that Europe cannot afford to miss. Demographic change drives the emergence of a large and growing segment of the population / consumer market (the so-called "overlooked demographic") whose needs remain largely un-met. This creates an opportunity for business and industry to develop new products, services and business models that will meet the need of the growing ageing population.

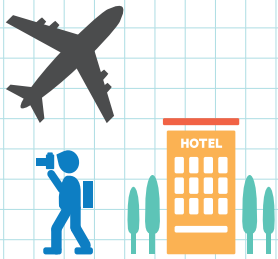
To seize this opportunity it is necessary to stimulate innovation and mobilize public markets and consumer markets in a joined-up strategy. The EU can play a key role in ensuring that the Silver Economy potential is translated into jobs and growth. Notably by providing a clear and unambiguous regulatory framework that encourages innovation and investment, removes fragmentation in the single market (which prevents scaling up of successful solutions) and supports key infrastructure improvements (especially connectivity).

The EU can also play an important role working hand in hand with public authorities at national and regional level to stimulate investment in innovation, while supporting the development of scalable markets and business models that will allow EU companies to attract investments, grow and be globally competitive.

Active and **healthy ageing** offers also **great opportunities**.
If we are prepared to change our systems for health and social care, we can benefit from those.

Today **Europeans over 65** have a **spending capacity** of **over €3,000 billion**.

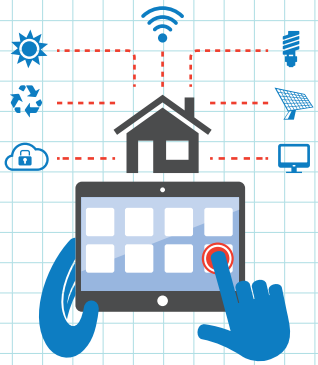
Ageing in **good health** allows us to



Travel

Work for **more years**

Learn new things

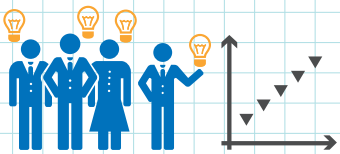


Prepare our homes for **living independently** for the many years to come

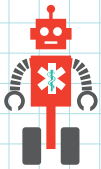
Europe has what it takes to **benefit** from these **new opportunities**

A solid R&I base in European industry.

A host of SMEs & start-ups are now developing



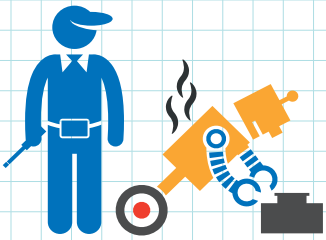
New ICT products such as care robotics



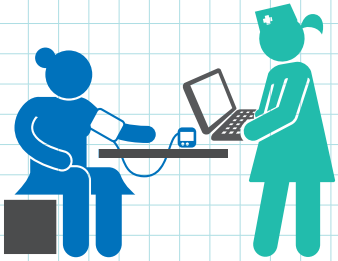
Health mobile applications that assist with tracking

Big pharma companies are developing integrated therapeutic solutions

The Silver economy offers **new highly skilled tech jobs**



but also the opportunity for **low qualified population** to **reskill**.



A clear market framework for products and services is needed to create an enabling environment for our industry and innovators. Uncertainty scares investors and leads to higher costs of doing business. A long-term commitment from public authorities and industry is necessary to help turn R&I into economic growth.

The Silver Economy requires a coherent cross-sectorial and cross-portfolio strategy at European level, as it touches many different sectors. The public and private sector must work together for industry to foster innovative solutions and explore the growing global Silver Economy. Europe's well established economic operators as well as innovative start-ups (that operate across different industries) are well placed to compete and even lead in the global market, by offering solutions for the ageing population. Europe has already developed pioneering solutions in areas such as ICT for health, smart-homes technology, connected transport and mobility or connected care. The challenge that remains is how to avoid market fragmentation and reach scale in a seamless way across Europe and beyond. Civil society plays a fundamental role in voicing the needs of the ageing population and their carers. The future models of innovation will be driven by empowered citizens/users/consumers. It is through "user-centrism" that Europe can ensure that the strategy to realize the opportunities of the Silver Economy will materialize into indeed adapted and useful products, services and solutions that can compete in the global markets.

The ageing population will impact many sectors of our economy, which all could profit from technological innovation. Examples are smart homes for independent living, service robotics, e-health and wellness solutions, personal and autonomous cars and transport, e-banking and financial products. Europe can and must play a leading global role. There is merit in pursuing a consistent EU strategy to grow and develop the Silver Economy, building on existing national and regional initiatives such as the Silver Economy Strategy in France or the Long-Term Care Revolution in the UK.

Thematic Session 3

What next for Europe's workforce and social model?

Demographic change brings about dramatic transformations across European society and raises new questions about the impacts on our current social model. As costs for society will continue to grow, Europe must be ready to shift to a more sustainable models, supporting new efficiencies.

Technology is part of the solution: it can enable older people to stay active in their community, and support a system re-designed in a way that citizens are at the core of integrated care. But technology will not and cannot replace the human dimension of caring. In the new models technology will enhance "human to human" engagement.

Technology raises concerns about the "cold hands vs. warm hands" and the loss of interpersonal relationships in the care sector. However, technology can be an instrument of social innovation. It can streamline processes and free up administrative resources to be used in actual interaction with patients in a context where fewer people are available for caring duties. A shared responsibility, built on partnerships between public and private actors will be the most likely solution to redress this challenge.

Technology platforms can also enable workforce development, in particular the development of new professional skills and digital competencies within the formal and informal carers

population (which is increasingly scarce) to cope with the needs of a growing ageing population. Technology and innovation can also support employers' efforts in other fields to meet particular needs of an active population that is increasingly made up of older workers. Just as we talk about age-friendly homes and living environments, many companies are now talking about age-friendly workspaces. Increasingly, "age-friendly" will become the mainstream for us as citizens during our working time or our leisure time, referring not only to old age but to all ages (e.g. in universal design, sustainable work).

Europe's challenge will be to preserve social cohesion and socio-economic development with an ageing and eventually shrinking workforce. The solutions that will support the long-term sustainability of our economy cannot generate additional costs for future generations and must ensure that no one is left behind. In order to make the best out of technology, it is imperative that our society adapts to this new reality and to changing norms in labour market participation.

Thematic Session 4

Innovation for Active and Healthy Ageing, from concept to reality, from local to global

Europe's investments in R&I on ICT for ageing well (Horizon 2020) are a critical instrument to stimulate public and private investments and translate innovation into tangible growth, jobs and quality of life for Europe's citizens. But a fresh and more embracing approach to innovation must be pursued by all actors if we are to move faster from "concept to reality" in active and healthy ageing solutions, and compete in a growing global market. There is also an increasing shift towards consumer products and services for wellness and active ageing, which complements the public market. Such a consumer market is driven by attractive products and services, bought by consumers because they like them, not only because they need them. Design and a good understanding of needs and desires of this part of the population are becoming ever more important.

Every component of health and care systems, our industrial and service sectors can become more efficient and can leverage technology and organizational innovation to become more competitive in the global stage. Too often measures taken by public authorities are well-intended but lack a long-term prospect or fail to take into account important components. A partial or short-term view of the challenges and opportunities brought by demographic change may result in temporary spending cuts or resource re-allocation with limited long-term value for the systems, the patients or the citizens and consumers. The role of the public sector as a driving force for introduction of novel products and services is increasing but needs to be supported by introduction of an "innovation culture" which accepts risks and rewards successful innovation. The use of procurement of research

and procurement of innovation are important new policy tools which can help support this movement towards an "innovation culture" across Europe.

Europe's R&I strategies must be closely aligned with the long-term vision for health and care sector reform, with industrial policy and competitiveness and must consider the complementarity between innovation and R&D. For example, if independent living and "ageing at home" are important components of health and care sustainability strategies, R&I instruments must support this goal by stimulating innovation that will enable this shift from institutionalized care to home care. This will in turn stimulate industrial growth and competitiveness.

There is a huge potential for emerging technology to contribute even further to the field of active and healthy ageing. Examples of game changers include new personalized medicine solutions, robotics, big data/analytics, nano technology or internet of things. All these areas will contribute to expand the boundaries of technology and create even more effective and efficient solutions for active and healthy ageing. There are different challenges in terms of privacy and ethical issues that cannot be overlooked and required a holistic approach. All development of new solutions should strongly involve the users in order to ensure that they are addressing the real needs in an acceptable way, if seen from the perspective of ethics and privacy.

It becomes essential to establish "outcome-based" goals throughout policy guidelines and programmes that support R&I in active and healthy ageing. Europe needs to stimulate new thinking and path-breaking collaborations that enable the emergence of new models for ageing well. The EU R&I actions together with PPPs and Innovation Partnerships can become

the game-changer to stimulate this new way of thinking, of developing and testing new models.

Health literacy was also mentioned as an important cornerstone for development of a new approach to active and healthy ageing innovation. Efficiency starts with the capabilities of each European citizen to take the right decision about his/her health and use the tools that support a healthy life. Strengthening the capability of the ageing population to stay healthy and active at work for a longer time may dramatically reduce the cost for healthcare and social services, as well as stimulate growth and productivity in society.

All of us must contribute to strengthening the synergies amongst EU instruments and platforms (particularly ICT public private partnerships relevant to active ageing as this can be an important lead market to different ICT sectors). We must also establish complementary cooperation at global level and develop a long-term cross-sector, cross-portfolio strategy to accelerate scaling up of innovation for ageing, notably through the European Innovation Partnership on Active and Healthy Ageing (EIP-AHA).

Work Streams and Suggested Actions

Work stream 1: Economic Growth

How can Europe translate innovation in active and healthy ageing into economic growth and job-creation in active and healthy ageing?

The ageing population is an important resource for Europe both in terms of human capital and in view of the Silver Economy opportunities. Demographic change leads to new needs and to new markets for products and services. It also impacts the planning and design of existing products and services which must be compatible with the specific needs of a growing segment of the population.

The European Commission Background Document on the Silver Economy identifies a number of areas where innovative solutions for active and healthy ageing can be enacted in the short term to generate economic growth and jobs in the Silver Economy. Some of these areas were discussed in greater detail throughout the work stream on Economic growth. These are "The future of Age-Friendly Homes" and "Silver Tourism".

The creation of "age-friendly homes" that can support independent living are a real societal need. Just as health and care systems are increasingly shifting care to the home and away from institutionalized care, it is essential that homes are adapted and equipped to support independent living. The definition of an age-friendly home depends on the needs of its occupant, but it includes general accessibility requirements, construction materials (e.g. soft floors), lighting systems (e.g. floor lighting to guide during night time), as well as the ICT infrastructure needed for delivery of key connected care services, such as telehealth, telecare, safety monitoring and others.

The building stock in Europe today is not fit to support a shift from institutional care to the home-based independent living model. Some 70-80% of houses in the UK and 90% in Germany are not suitable for independent

living as they contain accessibility barriers for people with emerging functional impairments and chronic conditions, and are not equipped with the necessary digital infrastructure required for future connected care services. In Germany alone the need for age-friendly houses exceeds 2.5 million already today. In the Netherlands there is an estimated need of converting 330.000 homes to become age-friendly.

More “age-friendly homes” are needed to enable independent living and remote health monitoring, as an alternative to institutionalised care. In addition to physical / spatial alterations, an age-friendly home will include a component of upgrading existing properties to supportin-dependent living and connected care (including telecare, telehealth) in combination with other digital solutions supporting health status and life style (e.g. sensor based physiological measurements, mHealth apps, telepresence, robotics supported living etc.). There are over 3 million smart home systems in use in the EU. The number of European households that have adopted smart home systems is forecasted to grow at a significant rate and some 29 million smart homes are expected to be equipped by 2019.

These smart homes can support not only security, entertainment and communications or energy efficiency fixtures, but also independent living and connected care solutions for the ageing population. Connected care technology can enable integrated (health and social) care as an alternative to current ways of caring for our ageing population that is overly reliant on institutionalized care. A model which is neither sustainable nor possible due to the rapidly growing needs of the ageing population.

Suggested Actions:

1. Build on the Background Document on the Silver Economy, and develop a substantive cross-portfolio, cross-sectorial strategy to support the creation of economic growth and jobs through pursuing opportunities identified in the EU Silver Economy.

2. Promote a safer investment environment to develop “age-friendly homes”, by developing a clear framework of reference on the features and performance of “age-friendly homes” as one crucial manifestation of age-friendly environments (others including age-friendly cities and regions as well as tourism).

3. Promote incentives to loan and financing schemes that can support property owners wishing to upgrade their properties with, amongst other things, age-friendly features (spatial renovation supporting accessibility as integration of technology for smart homes that supports “connected care at home” technology, including integrated care and telehealth / telecare solutions).

4. Develop framework conditions for the flourishing of new offers of travel, leisure and tourism products and services offers, tailored to the needs of an ageing population, notably supporting favorable conditions for continued activity in low-season by operators.

5. Promote better intermodality of the transport networks in Europe and introduce a “pan-EU travel Pass” for 65+.

Work stream 2: Investment in Innovation for active and healthy ageing

How can Europe attract more investment (public and private) into active and healthy ageing?

Investment sources in innovation on active and healthy ageing remain heavily dependent on the public sector. R&I funds like the EU Horizon 2020 are an important driver for developing new innovative products and service solutions in this field. Deployment of these innovative solutions is then heavily reliant on public procurement by regional health and care authorities. Public Procurement for Innovation (PPI) and particularly pre-commercial procurement therefore, is an important instrument to stimulate innovation in the supply market and drive towards an increased offer of outcome-based solutions that meet the needs of regional and local health and care authorities. The more traditional approach of "off-the-shelf" procurement of existing ICT solutions often is not tailored to address the particular needs of the procuring authorities. PPI means a shift towards encouraging the competent health and care authorities to approach the market with an outcome-based "need", and asking the market to develop innovative solutions that will meet that need. This level of market engagement promotes a better understanding and closer collaboration between the needs and the offer of innovation for active and healthy ageing.

The role of private investment sources that can support the scaling up and market uptake of innovative solutions is still relatively limited. The perception of a limited "market exploitation"

potential is a deterrent for private investors, mainly because a fragmented EU market, with various levels of regulatory uncertainty and mainly locally or regionally operating public authorities, undermines investors' confidence in the ability to take these solutions to a meaningful market in terms of size (and therefore, it reduces their return on investment).

The other concern raised was the integration of early development of ICT innovation in active and healthy ageing with market and user needs. Some of the solutions, funded by EU projects, displayed considerable value from a technical and technological point of view. But, so often, technology of excellence lacked the "usability" or the business model that could turn them into a viable market proposition. Investors advocated that what is lacking is not money, but a robust business model behind some of these solutions, and that is the reason why private funds are not more active in this sector. Measures to bring R&I of active and healthy ageing solutions closer to users and buyers, together with an understanding of investors' needs at an early stage of development were described as critical to attract more private equity investment into this area.

European private equity market for innovative tech start-ups is very different from that in the USA and Silicon Valley, in particular. But there seems to be a renewed interest coming from different investment sources, that start looking at Europe's innovators differently and more attentively. Major infrastructure projects promoting broadband and connectivity will also have an impact in the way the capital markets in Europe will consider innovation for active and healthy ageing. For example, the smart-homes market in Europe is projected to grow at a significant pace, faster than in the USA. This will mean new players coming into the traditional market for telecare and telehealth, with integrated solutions that will cover entertainment, security for the home, energy efficiency and other capabilities like connected health and care. These are major market opportunities for innovative start-ups developing ICT solutions that bring "connected care" to the home, for major industrial players and finally, private equity investors will look at this area with a different outlook.

Investments can be channeled through: social impact investment (SII), Public Procurement, particularly the pre-commercial procurement, allowing high risk new ideas to be explored, Public Private Partnership (PPP), foreseeing the participation of the user in defining the strategy and implementation of it. And there is crowdfunding, which has the advantage of testing products and markets and show cross-section with younger generations' needs.

Suggested Actions:

1. Develop a body of data/information to support investments in ICT for AHA. This will include what investments are being made (i.e. what types of investors are involved?). Develop some detailed case studies on investments in ICT for AHA. These will help people understand how these investments work and the impact they could have. Examine different types of investments (various forms of social impact investment, crowdfunding, angel investment, Venture Capital, etc.) and hold further events focused on investments in ICT for AHA, bringing together a broader range of investors, potential investees and key stakeholders.

2. Support the creation of a Silver Economy "Innovation to Market" accelerator. This accelerator should strengthen links between existing funding instruments (particularly H2020 and the AAL Programme) and initiatives that promote market up-take that bring investors, users and buyers to input at early stage development of ICT solutions. Leverage regional ecosystems approach and link it to EU-funded R&I projects.

3. Explore new synergies between EU-funded R&I projects and specific private investment sources, notably Social Impact Investment and crowdfunding, involving new crowd investors who are traditionally close to the issues / needs faced by the ageing population and their carers (such as doctors, GPs, users, formal and informal carers etc.).

4. Encourage initiatives to explore intersections between services (that can be for older people but used by young people, for example) and the sharing-economy.

5. Link the opportunities identified in the European Commission Background Document on the Silver Economy with leveraging the private investment opportunity in specific markets (for example market growth in smart homes, with age-friendly home technology and "connected care at home").

Work stream 3: Health and Care Innovation

How can Europe innovate health and care systems to meet the needs of a growing ageing population?

An integrated approach to care means a major shift in health and social care systems, acute and community care, a new patient-centred model, more coordination and shared responsibility among professionals of health and care organisations, a new role for pharmacists, a new system different from traditional linear methods, where one specialist was responsible for care delivery supported by nursing, technical and administrative staff. This shift is based on three fundamental elements: (i) having the right information to make a decision; (ii) having the right incentive to make the right choice; and (iii) having the right capacity to deliver the chosen option.

Health and care delivery staff is increasingly required to be more specialised and able to deliver according to patient needs. At the same time development in technology requires the staff to be trained accordingly.

The role of pharmacists should go beyond simple delivery of medication. Europe should

move from delivery pharmacy to clinical pharmacy to better support patients' adherence to treatments, to reduce congestion in the use of GP/hospitals services, to deploy more adequate methods for appropriateness of prescription and medication review, and to offer solutions (including ICT) conceived for patient empowerment and self-management.

Some suggested that under certain conditions clinical pharmacists' roles could be leveraged to become, for example, independent prescribers. Also, patient-oriented adherence services can be helped by IT tools at the level of pharmacies, enhancing data sharing possibilities and education of patients to stay on therapy.

Suggested Actions:

1. Explore the creation of a European "innovation benchmark" of care systems and define policy initiatives that can reward innovation of health and care delivery.

2. Promote best practices to involve patients and carers in the design of a new care model, where they can convey their needs and their limitations. Collaboration of all actors, in partnership across the EU, is required to achieve the change that is needed to sustain health and care delivery.

3. Governments need to facilitate the integration of health and social care, either with legislative means or without. Focus and actions can be targeted at the 2-3 most important barriers, e.g. the incentives or reimbursement framework.

4. Anticipate the needs of caring for an ageing population in order to avoid skill gaps. Match those skill needs with existing EU instruments that are available to support skilling-up. The European Commission can support the adjustment of education and training programs, going beyond traditional professional boundaries. Consider deploying investment resources into education, building an appropriate skills mix, management and leadership education related to primary care. Prioritise areas with "critical needs" for example geriatricians and geriatric clinical pharmacists can support reduction of over prescription and wrong prescription.

5. Enable a transition from "Delivery pharmacy" to "Clinical pharmacy" environment. Strengthen the role of pharmacies to increase adherence to treatment and to reduce congestion in the use of GP/hospitals services.

Work stream 4: Technology: the way forward

How can technology breakthroughs shape Europe's response to the needs of an ageing society?

Within a business environment which is becoming more and more innovation-oriented, the European innovation community active within the European Innovation Partnership on Active and Healthy Ageing (EIP-AHA) has produced great ideas for active and healthy ageing products and services. However, the uptake of these ideas by the market is still not widespread and one of the major challenges consists in bridging the gap between ideas and market, in some cases the creation of the market itself.

Often Europe is perceived as lacking a "sense of urgency" to innovate in the area of active and healthy ageing and too risk-averse. Incentives to adopt innovation and mechanisms to foster risk-taking at all levels are therefore welcomed, and the European Commission can play a leading and determinant role in this area. Clear policy direction will reduce perceived risk, and several EU instruments (H2020, AAL Programme) are at the forefront of fostering innovation in the market.

Although market uptake is an aspiration for all areas of innovation, there are particular issues that relate to this area of active and healthy ageing innovation. Some of the most distinctive factors include the complexity and fragmentation of health and care models across the EU. Also the emerging nature of this new market makes it difficult to predict and effectively address interoperability challenges that can undermine market uptake of innovative ICT solutions for active and healthy ageing. The identification of solutions and critical mechanisms to enable the market is paramount to ensure that technology breakthroughs contribute to shaping Europe's response to

the needs of an ageing society. To start with, significant difficulties are widely encountered in the involvement of stakeholders. In most cases, the arduous task is to raise interest in new products and solutions, as well as to convince investors that a specific product is appealing from a financial perspective. A better integration of stakeholders and an increased role of co-design are most certainly a priority. In this context, it is crucial to create scalability by removing the hurdles to get access to the market outside the country of origin.

Cooperation with private insurance companies has an immense potential in the field of long-term care. In particular, services and assistance after hospitalisation could be covered by private long-term care insurance. A system of integrated care requires strong communication and information for private insurers on the specificities of the care market.

In the Active and Assisted Living (AAL) Programme, Member States are working with the European Commission to foster the emergence of innovative ICT-based products, services and systems for ageing well. The AALIANCE2 roadmap has identified social and market opportunities for Active and Healthy Ageing, with reference to different scenarios in prevention, compensation, support and independent and active ageing. The appearance of usable, acceptable and sustainable solutions for Active and Healthy Ageing rely on the convergence of several technologies, from robotics to the Internet of Things, from Cloud market to communication.

In addition, transversal issues need to be taken into account, including standardisation mechanisms and ethical, legal and social impact. Robotics and the so-called “Land of Robots” in Italy are a case-study for European technological excellence. The successful results and the overtaking of Asian competitors are due to deep analysis methods and a view on sustainability. Current challenges include the integration of robots with the web and the development of new fields as “Robo-ethics” and “EU Robo-law”.

Suggested Actions:

1. Deploy EU instruments to support risk-taking and innovation, raising a sense of urgency at all levels.

2. Implement mechanisms for co-engagement of stakeholders and increase the co-design approach at early stages of R&I development.

3. Develop a closer partnership with health insurance companies (in coordination with the existing social protection systems supporting long term care), and engage them more actively in the European Innovation Partnership for Active and Healthy Ageing (EIP-AHA).

4. Perform strong coordinated actions to boost the supply-demand chain in the Active and Healthy Ageing domain, more European Public Procurement of Innovation (PPI) or a series of well-coordinated National or Regional PPIs.

5. Implement Joint PCPs, Joint Calls, Joint Workshops to increase synergy with and early experimentation with new technology innovations arising from enabling technologies (such as from Public Private Partnerships) and scaling up impact amongst PPPs related to the Active and Healthy Ageing domain.

Work stream 5: Social impact

How can an inclusive European society meet the individual needs of its ageing citizens and their carers?

Frail older people are most in need of: domestic care, social and emotional support and transportation. The family plays a substantial role in providing it. According to recent Eurofound data, 80% of care in Europe is provided by families, friends and other informal carers. In this framework, "long-term care allows for bridging the gaps between health and social as well as formal and informal care, thus clearly representing a core resourcefor older people and their 'healthy ageing' ".

In the ageing society, the fruition of the care system encounters several problems: bureaucracy, high costs, lack of information, long waiting lists and poor quality of services. ICT can play an important role to avoid these problems as well as to meet needs of those working daily on long-term care (LTC) and patients; ICT could be instrumental for supporting their activity: in providing help in social inclusion, improving the quality of their activity and developing skills of the carer. Also, as some EU-funded projects show, ICT can be used for an integrated platform providing interactive services to the carer and for better coordination of services.

However, there are still hinders to the use of ICT tools such as the difficulty in accessing the Internet and the scarce reporting on the impact of ICT at organizational and system levels (what ICT means in terms of service delivery, coordination, cost-effectiveness, etc.).

Challenges ahead are to ensure that solutions are not just good for individuals but also for policy drivers and for the wider economy; that innovation is cheap enough so that individuals buy it themselves and do not rely always on

funding. Also, best practices must become standard practice and it has to be ensured that any group of old people, unable to access technology, is not left behind.

Public authorities, private investors, citizens and communities need to identify specific and common benefits very clearly to work together efficiently to the benefit of older people. Case studies of technology based services for independent living of old people recommend that policy should aim at establishing a policy framework, a sustainable business model, at engaging all the stakeholders, at using a well-established entry point for new services, at sharing experiences and at tackling issues of interoperability.

The EU has a role to play in enabling use of ICT for long-term care in facilitating the exchange of good practices and providing a policy framework and funding.

Suggested Actions:

1 Develop "living labs" approach around particular areas of opportunity identified through the Background Document on the Silver Economy. These living labs should include also users / carers / representatives of the ageing society in the design of solutions (in addition to academic research, start-ups, service platforms with strong commitment, public authorities, banks and the health and care insurance sector and associations with the purpose of delivering sustainable qualified jobs and secure economic horizon of innovative start-ups helping them to access the market).

2 Improve education of users and stakeholders regarding benefits of social innovation and address inequality in accessing long term care. It is particularly important to develop this element within the European Innovation Partnership on Active and Healthy Ageing (EIP-AHA) through a systematic identification of existing ICT solutions and awareness raising in IT field that would be beneficial to the ageing population. New initiatives to promote and support inter-generational solidarity through ICT solutions should also be included within the scope of the EIPAHA Action Groups.

3 Consider developing a European Silver label that rewards excellence in innovation for active and healthy ageing, in order to make Europe an attractive area for talent, creativity and investment linked to a global European Silver economy.

4 Support the development of Interoperable Services platforms in key sectors where opportunities for economic growth has been identified. Notably age-friendly homes and connected care at home.

5 Consider new measures to strengthen EU support to R&I initiatives across regions (for example Public Procurement of Innovation) by making it more attractive and accessible to regions experiencing strong budget pressure and constraints.

Exhibition

“Experience Innovation in action and Meet the Pioneers”

Experience Innovation in action and Meet the Pioneers

The innovation village

The village was the chance for the delegates to **explore top-tier solutions in action**, solutions that help prevent falls, counter frailty and cognitive decline, improve care, enable independent living, or enhance social inclusion.

The exhibits were ongoing EU-funded research projects or spin-offs of European research, or large scale deployment of pilots initially funded by the EU.

The village had five thematic areas which guided the visitors through familiar environments: the shopping center and the various rooms of a home.

The set up allowed **exciting live demonstrations** that included live cooking (with the ChefMyself app) and direct interaction with the companion robots Doro, Giraff and Kompaï.

The kitchen: frailty and cognitive decline

Fraunhofer Portugal Research Centre for Assistive Information and Communication Solutions

Fraunhofer Portugal Research Centre for Assistive Information and Communication Solutions (FhP-AICOS) works to leverage industry and to bring useful and meaningful solutions to enhance people's living standards, specially focusing on older adults, by offering intuitive and useful technology solutions, capable of lowering technical and financial barriers that might hamper the participation in the information society.

At their booth the researchers from Fraunhofer Portugal shared their experience in working with and for older adults, by guiding visitors via live demos through four important topics in Active & Healthy Ageing: Nutrition, Chronic diseases, Caregivers and Fall prevention.

Many of those applications have been developed within projects supported by the AAL Joint Programme, among them **the ChefMyself app, a smart solution to assist older adults in preparing meals, doing healthy food choices, shopping for groceries and in managing their meal plans**.

Cogknow DayNavigator – Integrated ICT support for People with Dementia

Cogknow Ltd is a spin off of a project that concluded in 2010 and that had been co-funded under the EU's Sixth Research Framework Programme. Its pre-product, the **DayNavigator**, is an integrated assistive device providing services that meet the often unmet needs of people with dementia, for memory support, maintaining social contacts, feeling secure and instrumental support for daily activities.

The DayNavigator has been validated in field tests, and then further developed into a marketable product. **Market feedback has been positive and the company is looking for investments to make a first product available.**

Cogknow Ltd also represents the MemoryLane service from the new start-up Memorizon AB

(Sweden). MemoryLane is an automatic camera worn by for example persons with dementia or autism, that enables them to capture their day in pictures and have them automatically transferred and organised on a computer screen. It has been validated in field tests that show promising positive impact on quality of life, for example re-enabling dialogue with family members of what happened during the day, since the pictures stimulates access to otherwise hidden episodic memories.

The living room: independent living

The Giraff robot

The Giraff robot, a telepresence robot, has been deployed in the research projects Victoryathome (AAL JP) and Giraffplus (FP7).

Over the duration of the summit, two Giraff robots moved around a simulated living room. **The visitors were able to try the activity recognition, take physiological measures, test the fall detector, play with the automatic pill dispenser and, last but not least, drive the robot.**

ReAAL: Using universAAL to assess benefits of open platforms in large scale roll-out of Active & Independent Living applications

The REAAL project, co-funded under the EU's Competitiveness and Innovation Framework Programme (CIP), **fosters open platforms that enable the large scale roll-out of applications for active and independent living.**

The visitor to the booth experienced a broad variety of applications providing assistance in many aspects of daily life that, thanks to using a common open platform, can be picked, combined and personalized according to changing needs of individuals.

The bathroom: fall prevention

iStoppFalls project- ICT based system to predict and to prevent falls

Istoppfalls project is a now concluded project – funded under the EU's Seventh Framework Programme for Research and Technological Development. iStoppFalls's aim has been to develop **a low cost tool for fall prevention and risk assessment supporting and motivating fall prevention in community-dwelling older adults.**

The exhibit presented a life demo of the fall prevention exergame and engaged visitors to measure their fall risk and perform the training/ games themselves.

Farseeing project - Technological approaches to fall prevention

FARSEEING (a project co-funded under the EU's 7th Framework Programme for Research and Technological Development) is collecting data about real-life falls of older adults, in order to better understand the risk factors for falls.

'There is a general lack of information on why and how falls happen so often in the elderly population,' says Prof. Chiari (co-ordinator of the project). *'This database will, for the first time, enable researchers to study the nature of a fall based on enough objectively measured data.'* Based on those data, solutions are being developed to prevent older adults from falling. The FARSEEING booth offered a unique, first-hand experience on innovative technologies for detecting, managing and preventing falls. **The solutions showcased at the booth took the form of apps, wearable sensors, web applications and toolkits, exergames, and smart-home applications.**

SENSE4CARE: Movement monitoring products for eHealth

Sense4care is a spin-off company of the UPC, Universitat Politècnica de Catalunya (Spain), primarily created to commercialise the results of two research projects, REMPARK (FP7) and FATE (CIP).

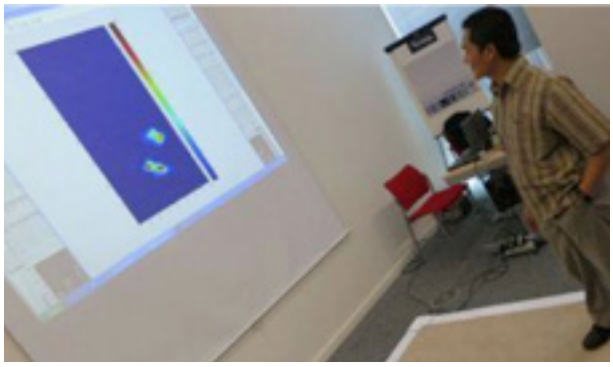
Two products at different progress level were shown:

- A commercial version of a Fall Detector device, developed after the piloting experience in FATE project. Presented Fall Detector works linked with the own user mobile phone through a proprietary application. **When a fall is detected, a message is sent to a configurable phone number** (corresponding to one relative, career or alarm service).
- Monitoring device for Parkinson's Disease (PD) patients. This is a partial outcome of REMPARK project. Monitoring device is able to identify motor symptoms related with PD and to determine the duration of the symptoms, giving a quantitative ratio between ON and OFF patient status. This device offers the possibility, for a first time, for a real substitution of the patient diary in the evolution control of the disease.

"Intelligent Carpet" for long-term wide-area monitoring of activity and gait

A 'magic carpet' which can detect when someone has fallen and can help predict mobility problems has been developed by Researchers of the University of Manchester (UK) and members of the Fall Prevention Action Group of the Innovation Partnership for Active and Healthy Ageing.

The prototype that was on show **looks like an ordinary carpet for domestic use, but is equipped with a sensor layer, sandwiched between a standard underlay and the top surface. Invisible and totally unobtrusive sensors** using 'Guided-Path Tomography Imaging', allow for long-term recording, in real time and under natural conditions, of the spatial details of the carpet deformation caused by human contact (standing, walking, lying, etc.). The data enable to identify changes in mobility and gait resulting from natural causes or illness.



The bedroom: care and cure

Living it Up - Scotland: Co-designing a scalable and open Digital self management hub

Living it Up is a Scottish project that aims to deliver **sustainable and innovative improvements in health, care and wellbeing services, information and products for 55,000 people living in Scotland.**

Living it Up uses familiar technology, such as smartphones, tablets and games consoles to bring tailored health care and wellness services to users helping ensure they are happy, healthy and safe.

Living it Up is delivering a new service model that encompasses a Digital self management hub, a flexible and open platform that can be scaled along with a managed service to ensure content remains engaging, current and users are communicated with.

Scotland is a three-star Reference Site of the European Innovation Partnership on Active and Healthy Ageing.

Basque country: Telematic Health counselling and Personal Health folder

The Basque country is, like Scotland, a three-star Reference Site of the European Innovation Partnership on Active and Healthy Ageing, in recognition of its successful strategy for chronic conditions that generated a reduction of 38% in hospitalisation for highly complex cases and of 26% in emergency room visits.

The Basque country booth displayed **two tools that are key components of its highly successful strategy for chronic conditions:**

- Telematic health counselling: 24x7 phone support call centre run by a team of skilled nurses, in combination with decision trees self-managed by the patient. The nurses work with patient medical records and a corporate health information system. If the user agrees all information collected by phone is integrated in the patients' clinical records. This allows great coordination with other health care professionals.

- The Personal Health Folder enables efficient non-face-to-face interaction between citizens and the public health system. The folder links with the health services' information system, so patient information is directly accessible from anywhere. The personal health folder has offers functionalities, ranging from viewing electronic patient records to interaction channels with professional caregivers. The health folder has been developed as part of the Sustains project, co-funded under the EU's Competitiveness and Innovation Framework Programme (CIP).

Kompaï, my robot companion

Kompaï is a robot that **allows the dependent and/or disabled persons to stay at home as long as possible in complete safety and in permanent link with the outside world** thanks to its internet access and dedicated applications.

Kompaï has been developed by French company Robosoft thanks to the AAL Joint Programme which funded the DOMEO project, where the first generation of Kompaï was designed and tried by potential users.

Robot-Era – service robotics from town to home

Robot-Era is a project to develop and demonstrate the general feasibility, effectiveness and acceptability of a set of advanced robotic services, integrated in intelligent environments. **The robots involved will actively work in real conditions and cooperate with real people and between them, to support independent living,** and improve the quality of life and the efficiency of care for elderly people.

The Rehabilitation Gaming System (EODYNE)

The Rehabilitation Gaming System (RGS) is a **virtual reality based system allowing elderly people to recover at home after a stroke**. It specifically tackles motor disabilities of the upper extremities.

The RGS system provides individualised task oriented training protocols that allow stroke patients to do their rehabilitation exercises at home. The RGS technology was partly developed and tested within an AAL Joint Programme project and will be commercialised by EODYNE (Spain).

The shopping centre: Social Inclusion/out and about

Apsis4all/Cloud4All – Personalised interfaces for all

A new approach to inclusive design is being developed in two European projects which enable users to create their own individualized personal profile. This enables a one-size-fits-one response from a system that is able to transform its interface to adapt it according to the user's needs and preferences.

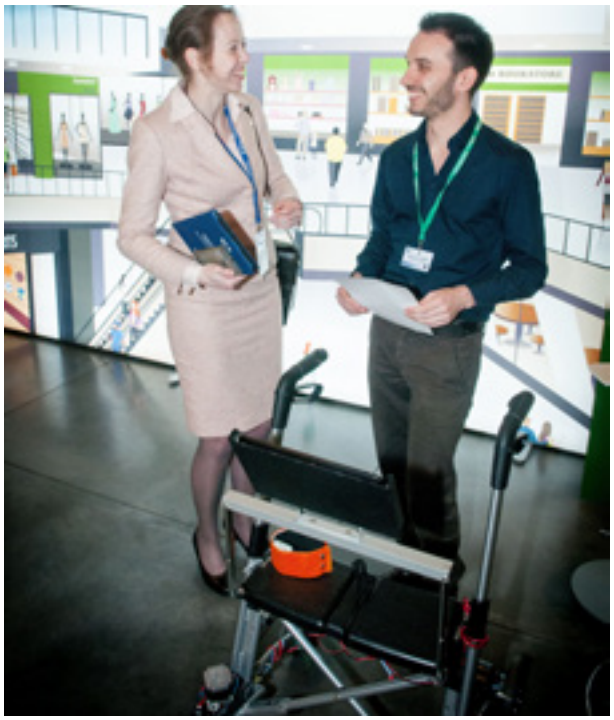
The Apsis4All project (co-funded under the EU's Competitiveness and Innovation Framework Programme) has dealt with the **accessibility of ticketing and banking services. A demo was given of the online wizard where the needs and preferences are specified.**

The CLOUD4ALL project (co-funded under the EU's 7th Framework Programme for Research and Technological Development) is taking on

the challenge of improving the accessibility of health and public services. It aims to replace the 'classic' approach of adapting individual products and services for a person with the **automatic-personalisation of the mainstream products and services** a user encounters. It uses cloud technologies to activate and augment the natural (built-in) accessibility of a product or service according to a profile of the user's needs.

Supporting navigation for older adults in public spaces: the DALi approach

Dali (an EU funded research project) supports the **mobility of older adults in public spaces**. It enables an elderly person with mild cognitive problems to navigate, for example, a crowded shopping centre thanks to a "C-walker" - an assistive device that can recommend a path for the user.



The visitor of the booth was able to explore the different capabilities of the c-Walker (which stands for "Cognitive Walker" and which is a robotic device for walking assistance and navigation support). He/she would pick up a few places to visit from a list, define preferences in her/his profile and **look on the screen the ability of the system to generate the correct path**. Then she/he was invited to use the device in the exhibition area and the system would localise with accuracy and in real—time her/his position and give guidance directions using different means if the user deviated from the planned trajectory. The visitor could also use the touch screen interface to formulate requests and receive messages from the system when needed.

From HOST (Technology for self-serve to seniors in social housing) to IDOlink

Host was a project under the AAL Joint Programme. It aimed to provide easy to use technologies and services in social housing flats to allow a better quality of communication and a better access to package services for the elders. The main goals of the project were to bring more comfort of living to the elders, to reinforce social inclusion (with friends, family, social operators, etc.) and to allow a longer stay in their house. Host project ended in June 2014.

Several devices had been co-designed and experimented with end-users during the project. Among them, in France, "Host communication"

that has now developed under the commercial name of IDOlink. It is being deployed by OPAC du Rhône, one of the leading social housing landlords in France.

HOST Communication/Idolink is **a service offer to create intergenerational local communities**. It bundles:

- An online service (a web-app for tablets and web), designed for elderly people and their families that helps with communication and facilitates exchanges. This app can be delivered under a white label.
- An animation service including workshops and a methodology to create a local community involving elderly people. It can also cover initial training and first level support.
- Tools for community animation: games, online and physical supports, animation.
- Additional services development, using the IDOLink as a platform.

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Presentations done at the event along with media material and background information can be found at

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