SMARTSPEC

SMART SPECIALISATION FOR REGIONAL INNOVATION

Social Innovation for an Age Friendly Society

Work Package 2: D2.2

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Contents

CHAPTER 1: INTRODUCTION

The main purpose of this working paper is to explain how work in WP2 has helped refine our understanding of social innovation (SI) in the context of smart specialisation strategies (S3). Building on our earlier reflection documents (Richardson et al. 2014, Marques, et al, 2014) we will discuss if and how social innovation can add value to RIS3 strategies, as a complement to more traditional forms of innovation. We will do this through the prism of European policy on the ageing societal challenge, which is the central focus of our empirical work in Smartspec WP2.

This discussion is informed by two main conceptual issues: first, as mentioned in the previous paragraph, SI is valuable in this context mostly as a complement to technological innovation. It can, in theory, improve processes of entrepreneurial search discovery by bringing new actors and ideas into the S3, though this proposition still has to be tested empirically. In this document we start to outline a few emerging conclusions on this topic, though the bulk of our empirical work will be completed in the first semester of 2015. The second conceptual issue is the fact that SI, particularly when discussed in the context of a societal challenge such as ageing, is primarily concerned with need (or demand), such as the need for better care for the elderly, which exists virtually in every region. On the other hand, S3 is about supply and specifically about regions specialising in a limited number of economic activities which should help them develop their competitive advantages. This means that even if SI is important to address the ageing challenge at the EU level, it might be useful across all regions as a way to improve the delivery of goods and services but not necessarily as part of every region's S3 strategy.

Empirically, we will take this discussion forward by drawing on one particular societal challenge, namely demographic change. This covers multiple trends, including migration and population decline which will differentially impact on Europe's regions. The focus of our study, however, is the 'greying of Europe' and in particular the concept of active healthy ageing (AHA), as both a goal of economic and welfare policies and as an underpinning condition for growth (– see section 3). As described in Deliverable 2.1 (Richardson, et al, 2014) the ageing challenge is extremely complex and has called forth a wide range of policy proposals, ranging from pension reform to addressing social isolation. Although we need to bear in mind this broad context, here, our main focus is innovation policy. We are particularly concerned with areas where, realistically, Regional Innovation Strategies (RIS), particularly S3, can make a contribution to addressing the challenge. This question could be separated out into two sub-questions. First, to what extent does the present paradigm, or rather the emerging S3 paradigm, facilitate the realisation of (and perhaps co-construction of) AHA policies. Second, what changes would be required in order to facilitate a greater contribution. Would such changes require a fundamental re-purposing of RIS? Reversing the question, what can social innovation perspectives bring to S3 strategies? So, for example, can they contribute towards:

- Bringing different values to motivate action
- Extending domains of entrepreneurial discovery
- Helping move S3 beyond STI or at least complement the STI bias
- Enhancing process and expanding collective endeavour to underpin S3?

In order to understand the challenges set out in the previous paragraph it will also be necessary to consider *the central role of technology* in addressing societal challenges up to this point in time. This will be useful to identify areas where SI could provide a complement to current approaches. The over-focus on technology (or at least S&TI) in RIS has been criticised by several commentators (e.g., Moualert and Sekia, 2003; BEPA, 2010). Our research to date, however, suggests that technology remains central to S3 thinking, both in terms of 'breakthrough innovations' and, increasingly importantly through the dissemination and adoption of existing and emerging technologies. So, for example, recent pronouncements from DG Regio acknowledge that there are different pathways for regional innovation and development, but each of these explicitly or implicitly has technology at its centre:

- Rejuvenating traditional sectors into higher value added activities and new market niches;
- Modernisation through dissemination and adoption of new technologies;
- Diversifying technologically from existing specialisations into related fields;
- Developing emerging economic activities through radical technological change and breakthrough innovations (CEC 2013a: 4).

Technology is also seen as a crucial resource in meeting the societal challenges (CEC, 2013b). In the field of AHA the biggest part of innovation spend has been on the development and deployment of new medical technologies (including medicine) and on technologies commonly grouped under the heading of *assistive technologies*. Technological change, therefore, represents an important overlap between RIS and AHA and thus an important entry point into exploring connections between them. However, we will be interested in exploring:

- if decisions on ST&I funding are being made on the basis of perceived societal need, as well as potential profitability and economic impact;
- whether more socially inclusive processes in decision making, research and implementation are emerging in terms of designing and implementing technology developments;
- how the technology is, or can be embedded in real social settings (such as the home) and whether and how it can act as *one* catalyst to creating social value[1]; and,
- whether, other complementary innovations required to realise the benefits of technological innovations, such as staff and management training, institutional reorganisation and the re-allocation of funding are occurring.

The empirical work is concerned with the existing, new and potential roles which a range of social actors, particularly the public sector, citizens groups and individual citizens, and social enterprises are and can play in bringing more socially innovative practices to bear in linking SI and S3.[2]

[1] Technology here would mainly cover medicine, health and care, transport technologies, housing technologies. Policymakers will be most concerned with the development of 'hi-tech' innovation and dissemination, though more frugal innovations may also be marketable. Whether frugal innovations can or will be seen as a platform for specialisation is another question.

[2] For a good link to reports on S3 see European Parliamentary Research Centre's: http://epthinktank.eu/2013/08/14/smart-specialisation/

In order to discuss these issues in detail this document will proceed as follows: in the following section we will present the theoretical developments that emerge from our reflection papers and some preliminary findings about how the concept of SI is currently being understood and deployed by policy makers across the EU[3]. This will be followed by a discussion of how it could contribute to the ageing challenge, through an overview of current EU policies in this arena and analysis of their limitations. Finally we will draw some concluding remarks.

CHAPTER 2: SOCIAL INNOVATION - THEORETICAL ADVANCES AND EMERGING FINDINGS

Our current understanding of this topic puts the notion of of *complementary-social innovation (C-SI)* at the core of our analysis. Our earlier literature review (Richardson, et al, 2014) and subsequent analysis (Marques, et al, 2014), suggests that this represents the most fruitful approach to linking the concepts of social innovation and S3 and to designing our empirical research. Here we envisage social innovation as a complement that can add something to traditional innovation policy by focusing on need and by finding ways to reach segments of the population that wold not be served by traditional innovation. In this way we mirror BEPA's call for innovation where:

> "the creation of well-being is valued, adding a new dimension to economic output. In a sense, the boundary between the social and the economic domains blurs, and the 'social' becomes an opportunity, rather than a constraint, to generate value…..Here, innovation is seen as a process that should tackle 'societal challenges' through new forms of relations between social actors" (BEPA, 2010: 37).

Questions which emerge from this definition, in the context of S3, include:

- Are, in fact, boundaries blurring between social and economic domains in regional strategy or does the economic continue to dominate?[4]
- Are regional innovation strategies, particularly S3, relevant instruments to tackle 'societal challenges'?
- If so, is this merely through the (re)direction of the S&TI paradigm towards these challenges. Or are more holistic approaches being developed?
- Are new vertical and horizontal relationships emerging through which these challenges are being addressed in innovative ways? The complexity of governance structures in STI is well documented (Goddard et al, 2014). How more complex when a strong social dimension is added?

[3] Our empirical findings are based on: the initial data received from WP5 (Living Labs), WP6 (Learning Journeys) and WP2 where we have carried out pilot interviews in Wales and England

[4] One important project to be consulted is "Boosting the Impact of Social Innovation in Europe through Economic Underpinnings (SIMPACT)", which claims to advance "the understanding of social innovation's economic dimensions, creates new concepts, models and instruments for policy makers, innovators, investors and intermediaries". http://www.nordregio.se/en/Nordregio-Research/SIMPACT/

In practice however, we find that SI has been understood by policy makers and practitioners in a significantly more ecumenical fashion. This is partly because S3 itself is playing out in multiple ways across Europe. In some cases regional authorities' regional innovation strategies are already mature, having been through several iterations and pay only lip service to EU direction, doing so in order to access European funding: Bremen is such appears to be such a case. In Tampere, as across Finland, there is no standalone S3 strategy. Instead S3 "is articulated in the research and innovation section of the new Regional Strategy, alongside other sections relating to social development and sustainability" (Vallence, 2014: 20). Furthermore, the benefits of specialisation are being questioned. In a case study of Pirkanmaa (greater Tampere) it was suggested that innovation thinking in the region evolved to a stage where, in the phrase of one interviewee, they prioritise activities that are 'smart', but no longer necessarily 'specialised', leaving them on some points at odds with the principles promoted through the formal RIS3 guidance (Vallance, 2014). This stance partly reflects previous overdependence on an 'advanced sector', but one dominated by a major employer (Nokia). In other regions, S3 appears to be a vehicle for revisiting overall economic development strategies, pulling all aspects of that strategy under the innovation rubric. Here the focus is on making everything 'smart', but not necessarily on specialising. Slovenia may be such a case, with basic components of economic development being rebranded as S3, including primary and secondary innovation. In the UK, regional priorities are subsumed within national industrial strategy. In other cases responses to structural and 'crisis' developments have taken precedence over long-term considerations. Given this complexity it is likely that any social innovation component will be introduced within very different broader S3 contexts. In the Slovenian case for example, social Innovation is almost everything which is non-technological innovation - organisational innovation, rebranding, building new knowledge networks, plus the social economy and community development. In this case, the usefulness of this concept appears to be that it encourages people to think beyond STI. And it might capture the 'spirit of Slovenia' in the sense that they see non technological innovation as their main route out of the economic crisis.

Our early empirical research suggests that we are seeing some integrative thinking around RIS and SI. So, for example, Vallance suggests that Finland's Innovative Cities Approach (INKA) has some salience in terms of SI being brought into conversation with S3 strategies:

"…the new iteration of innovation strategy within Tampere around the INKA[5] programme (and by extension therefore also smart specialisation), includes a component that could certainly be described as a form of social innovation. The principle that innovation should be driven as much by demand and users as by developments in science and technology, and embrace a broader range of actors than just those involved in carrying out R&D, has been promoted in Finnish national innovation strategy since the end of the last decade. Open innovation approaches adopted through platforms such as Demola were cited by interviewees as potential examples of this kind of social innovation approach." (Vallance, 2014: 14).

Vallance suggests that INKA's Smart City theme "promises to engage a wide range of urban development and community actors, and to help address societal challenges in the region

[5] For more detail on INKA see https://www.tem.fi/en/innovations/strategic_centres_and_clusters/innovative_cities_programme_(inka)

such as an ageing…[the].. INKA theme will intersect with the Open and Agile Cities Strategy programme of the six largest Finnish cities, which is part of the national response to the requirement for a proportion of ERDF to be invested in integrated sustainable urban development" (Vallance, 2014: 14-15, Part 2).

Box 1: Tampere Smart City Platform: Tampere establishing a series of large-scale demonstrator pilots in real-life environments, designed to function as platforms for business to test data applications and to allow public services to trial new forms of service delivery. So, for example, a regeneration project set in Tesoma suburb in Tampere, will include a new innovation platform, taking 'demonstrator pilots' outside incubator and laboratory type spaces, which typically host innovations. The intention is that this will help normalize citizen engagement in social innovation and urban development. This platform will not focus specifically on the ageing societal challenge, but the demographic profile of the Tesoma makes it likely that it will support projects that include older residents and help produce relevant solutions. The City of Tampere has already identified the challenge of meeting the service needs of older citizens as a strategic priority through their Tampere Senior programme which runs from 2012-2020. This project aims to bring together various stakeholders, including healthcare actors, universities, companies and civil society organisations as well as the citizens, who can contribute to objectives such as enabling older people to live at home throughout their life. (http://www.esn-eu.org/raw.php?page=files&id=1232. (referenced in Vallance, 2014, 15-16)

Our early findings suggest that the public sector is likely to be a key actor in the delivery of SI and in particularly of the Healthy Active Ageing agenda, which will be discussed in greater detail in the next section. A recent report The Expert Group on Public Sector Innovation (EGPSI), which draws heavily on the work of Mazzucatto (who is a member of the Expert Group), identifies two areas in which the public sector contribute to innovation. One way is as a catalyst, fostering private sector innovation, through providing funding to private companies and by developing key technologies, which may turn out to be general purpose technologies (GPT), by investing in the early stages of these technologies "when uncertainties are too high for private companies" (CEC, 2013c: 5). It should also be said that these can be recurrent investments: for example, most advanced economies are supporting investment in broadband to overcome private sector risk aversion in remote and rural areas. It is clear from the foregoing that the public sector has been engaged in AHA at multiple levels, in this form of innovation.

The second form of innovation in which the State engages is within the public sector. This is the main focus of the EGPSI Report which defines such innovation as "the process of generating new ideas and implementing them to create value for society, covering new or improved processes (internal focus) and services (external focus) (p5). The report suggests that this takes on a variety of forms:

> "ranging from smarter procurement, mobilising new forms of innovation financing, creating digital platforms and citizen-centric services as well as driving a new entrepreneurial culture among public managers." (CEC, 2013c: 5)

The Expert Group identifies four "design principles", which, they suggest, "must be mainstreamed throughout the entire ecosystem of public sector" (CEC, 2013c: 6):

- Co-design and co-creation of innovative solutions (with other Member States, other parts of government, businesses, the third sector and citizens);

- Adopting new and collaborative service delivery models (across public, private and non-governmental actors, both within and across national borders);
- Embracing creative disruption from technology (the pervasive use of social media, mobility, big data, cloud computing packaged in new digital government offerings);
- Adopting an attitude of experimentation and entrepreneurship (government itself needs to become bolder and more entrepreneurial).

The question for Smart Spec WP2 is which our focus should be: the catalytic role of the public sector on wider innovation processes or innovation in the public sector? One area of public sector innovation which has received considerable attention is new forms of procurement, which, it is hoped, will in turn stimulate private sector innovation. One signal of the importance of procurement in the minds of policy makers is size of the budget (€130-140 million) allocated to calls for proposals for PCP (pre-commercial procurement) and PPI (public procurement of innovative solutions) projects under Horizon 2020[6], and there have been a range of attempts by the EU to stimulate PCP and PPI include cross-border funding[7]. Box 2 illustrates examples in the fields of health and care.

Box 2: Examples of PCP and PPI in Health and Care in Europe

Example of Health Care in the United Kingdom In the UK there are a number of public sector organisations that have prepared themselves for PCPs and/or have already undertaken some PCPs. The NIC (National Innovation Center) of the UK NHS (National Health Service) applies an integrated approach to procurement of innovation that combines the use of pre-commercial procurement (PCP), for getting solutions developed for mid-to-long term innovation procurement needs, and Forward Commitment Procurement (FCP) for deploying solutions addresing short-to-mid term innovation procurement needs. http://cordis.europa.eu/fp7/ict/pcp/uk-nhs-pcp-fcp-case.pdf

Examples of cross-border collaborative procurement

he EU funded project SILVER (Supporting Independent Living for the Elderly through Robotics) http://www.silverpcp.eu/ is an example of groups of procurers from different EU countries that launched their joint PCP call for tenders under UK law. In SILVER a group of local and regional authorities focus on getting robotics solutions developed that will enable elderly to live more independently and enable local and regional elderly care providers to care for at least 10% more elderly by 2020 (see http://cordis.europa.eu/fp7/ict/pcp/docs/silver-pcp-results-phase1.pdf). Cities and regions in the procurement consortium are Eindhoven. Odense, Oulu, Stockport, Vantaa and Vasteras. The innovation organisations element of the consortium is led by Innovate UK (formerly Technology Strategy Board), the UK's innovation agency, Other partners are Aalto Uni (FI), Brainport (NDL)Forum Virium (FI), Min of Health (NDL), Region of South Denmark, and VINNOVA (SE)

The Nordic Ministers of Industry have launched a lighthouse project in the health care domain to strengthen the collaboration between Norway, Finland, Sweden, Denmark and Iceland on pre-commercial procurement PCP and PPI (public procurement targeting deployment of innovative solutions). A call for proposals from Nordic Innovation is open for PCP and PPI project proposals to support this Nordic joint cross-border lighthouse project. http://cordis.europa.eu/fp7/ict/pcp/docs/norden-lighthouse-project.pdf

Procurement Innovation in an A10 Region During the EU funded RAPIDE project, the Hungarian Észak-Alföld Regional Innovation Agency (INNOVA) investigated the feasibility of incorporating PCP practices into their regional operational programme for the Structural Funds, making Hungary is the first EU-10 country to prepare itself to launch a PCP pilot http://cordis.europa.eu/fp7/ict/pcp/hungary-case.pdf . Eszak-Afold is one of SmartSpec's Learning Journey Regions http://innova.eszak-alfold.hu/en/about-the-region.html

[6] http://cordis.europa.eu/fp7/ict/pcp/calls_en.html
[7] http://cordis.europa.eu/fp7/ict/pcp/msinitiatives_en.html

It is not clear how strategic some of the case studies listed here are or to what extent they are integrated into national or local S3 strategies. Two examples where there *seems* to be a good level of integration can be found in Southern Denmark[8] and Limousin which is interested in the economic and social opportunities and innovative solutions related to silver economy and active ageing, reflecting the importance of the issue in the region[9] (Saublens and Jepson, n.d).

CHAPTER 3: DEMOGRAPHIC CHANGE AND INNOVATION: A FOCUS ON AGEING

Demographic change has been identified as one of the 'Grand Challenges' in the Europe 2020 Strategy[10]. Although the challenge of demographic change is multi-dimensional a (perhaps *the*) key policy focus is on the 'greying of Europe'. An Ageing Society is not only a European challenge, but a global one. The World Health Organization estimates that between 2000 and 2050, the proportion of the world's population over 60 years will double from about 11% to 22%. The absolute number of people aged 60 years is expected to increase from 605 million to 2 billion over the same period. In addition the number of people aged 80 years or older will almost quadruple to 395 million (World Health Organization, 2012). Although the pace of ageing is currently fastest in the developing world, the process is most advanced in western economies and Europe has the oldest population of all global regions, at around 22 per cent aged 60 or over: this figure is anticipated to rise to 33 per cent by 2050 (UNFPA, 2012). These trends throw up major challenges, but also, it is claimed, important opportunities at the global, European, national and regional levels (UNFPA, 2012; UK-BIS, 2011; Saublens and Jepson, n.d). A summary of claims about economic opportunities emerging around ageing is set out in Richardson et al (2014: 33). Innovations will be required to meet the challenges and to respond to the opportunities across a range of fields. We direct our research to one of the key strands of ageing policy in Europe, namely, how to secure active and healthy ageing (AHA). The European Commission has identified this as a major challenge common to all European countries, and an area which presents considerable potential for Europe to lead the world in providing innovative responses."[11] In the next section we will provide a comprehensive description of European initiatives in this arena, considering their potential to incorporate SI approaches and the extent to which they are dominated by technological innovation.

[8] http://syddanmark2020.dk/en/about-us/
[9] https://www.b2match.eu/eu-marketplace-brussels2014/participants/32
[10] These are Health, Demographic Change and Well-being; Food Security; Secure Clean and Efficient Energy; Smart, Green and Integrated Transport; Climate Action, Resource Efficiency and Raw Materials; Inclusive Innovative and Secure Societies.
[11] http://www.healthyageing.eu/initiatives/european-policies-and-initiatives

CHAPTER 4: ACTIVE HEALTHY AGEING: EUROPEAN POLICY AND INITIATIVES

The well-being of older adults has, of course, long been a key concern of EU[12] and national governments, with health and disability strategies, for example, paying particular attention to this demographic cohort. The trends outlined above have intensified and sharpened this focus under Europe 2020 around the notion of Active Healthy Ageing (AHA). AHA is described as:

> "…growing old in good health and as a full member of society, feeling more fulfilled in our jobs, more independent in our daily lives and more involved as citizens"[13]

The year 2012 was designated as the ***European Year for Active Ageing and Solidarity between Generations***. Sponsored by DG for Employment, Social Affairs & Inclusion (EMPL) the initiative focused on employment, participation in society and independent living. It is not surprising that DG EMPL should lead on active ageing as commentators such as Alan Walker (Walker, 2008; Walker and Maltby, 2012) have argued that the Europe's active ageing policy has been mainly productivist in scope, particularly concerned with extending people's time in the labour market. Such an approach has some resonance with RIS policies whose ultimate objectives are growth and employment. However, in our project we are more concerned with the impact of active ageing, and particularly active independent living (AIL), in (a) creating potential markets for new or enhanced products (b) stimulating innovation to supply these markets (c) as a field where complementary social innovation can, indeed *must*, occur. As with many innovations this may or may not ultimately result in growth and employment in all regions.

The *Year of Active Ageing* statements suggest that promoting independent living involves creating environments which are more suitable for people suffering from various health impairments and disabilities, but also empowering people to be in charge of their own lives for as long as possible. Several key areas for action were identified:

- Health promotion and preventive health care;
- Accessible and affordable transport;
- Age-friendly environments, goods and services;
- Maximising autonomy in long term care;
- Tailoring technology to boost /encourage independent living;
- Adapted housing[14]

During the same period the Directorate General Health and Consumers (DG SANCO) set up a ***European Innovation Partnership on Active and Healthy Ageing*** (EIP-AHA). This had three objectives:

[1212] For a commentary on emergence of active ageing discourse in Europe See Walker, A. (2008) "Commentary: The Emergence and Application of Active Aging in Europe, Journal of Aging & Social Policy Volume 21, Issue 1, 2008, 75-93" and Walker A. and Maltby, T. (2012) "Active ageing: A strategic policy solution to demographic ageing in the European Union" International Journal of Social Welfare, Volume 21, Issue Supplement s1, pages S117–S130, October 2012

[13] http://europa.ba/documents/delegacijaEU_2012092817175866eng.pdf

[14] http://europa.ba/documents/delegacijaEU_2012092817175866eng.pdf

- Enabling EU citizens to lead healthy, active and independent lives while ageing;
- Improving the sustainability and efficiency of social and health care systems;
- Boosting and improving the competitiveness of the markets for innovative products and services, responding to the ageing challenge at both the EU and the global level, thus creating new opportunities for businesses.[15]

EIP-AHA seeks to create a 'triple win for Europe' at the same time addressing social problems, creating business opportunities, and (presumably by being successful in the former two) enhancing European competitiveness. This triple win resonates with the *CSI* approach which we adopt in this study. However, EIP-AHA demonstrates some of the difficulties in operationalising cross-policy initiatives which have multiple objectives. One such difficulty is how to priorities and balance outcomes and how to measure these outcomes. In the case of EIP-AHA the overarching target of the pilot partnership is 'social', to increase the average healthy lifespan by two years by 2020, rather than economic reflecting the objectives of the sponsoring DG.

AHA-EIP's first Strategic Implementation Plan identified 13 priorities in addressing its three objectives, seven of which were to commence in 2012. These were

- Finding innovative ways to ensure that patients follow their prescriptions and treatments;
- Finding innovative solutions to better manage own health and prevent falls;
- Helping to prevent functional decline and frailty;
- Promoting integrated care models for chronic diseases, including the use of remote monitoring;
- Deploying ICT solutions to help older people stay independent and more active for longer;
- Promoting innovation for age-friendly and accessible buildings, cities and environments;
- Offering a marketplace for innovative ideas.

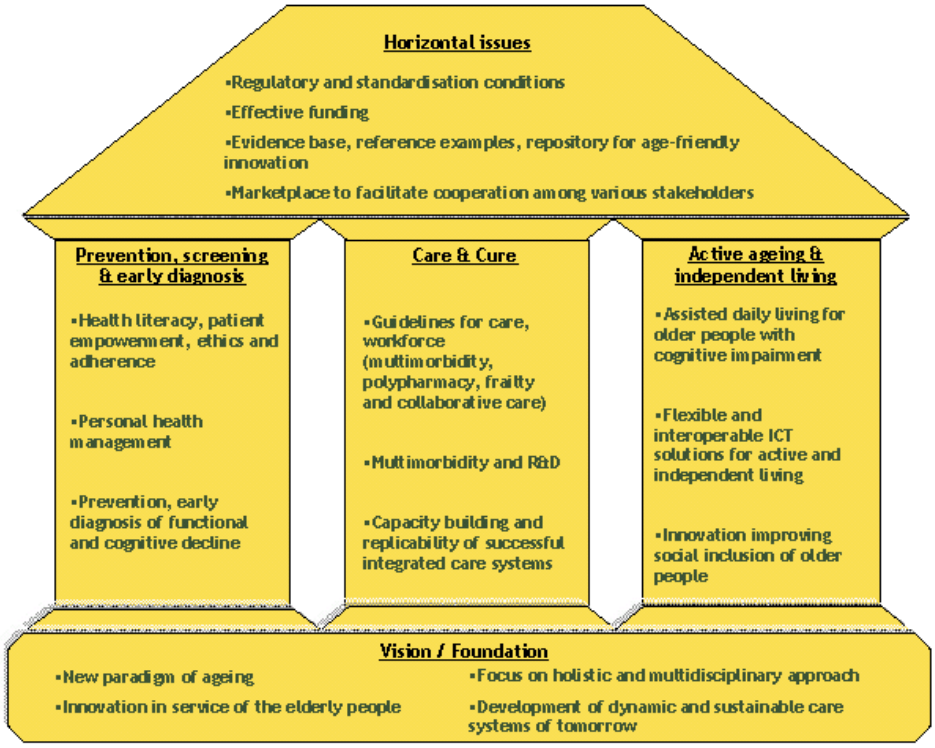
Again, either implicitly or explicitly, several of these objectives will rely on technological innovation, with medicine or digital. But they will also organisational and process innovation involving both practitioners and users. This is recognised in the AHA-EIP partnership model itself, which, it is claimed:

> "bring[s…] together key stakeholders (end users, public authorities, industry); all actors in the innovation cycle, from research to adoption (adaptation), along with those engaged in standardisation and regulation"[16].

[15] This section draws heavily on text from http://www.healthyageing.eu/initiatives/european-policies-and-initiatives

[16] http://www.healthyageing.eu/initiatives/european-policies-and-initiatives

Figure 4.1: Graphical representation of AHA-EIP



Source: Wintlev-Jensen and van den Berg, 2012

Figure 1 graphically illustrates the AHA-EIP. There will, of course, be overlap between the pillars in terms of on-the-ground delivery, but the EIP has established a number of Action Groups to coordinate and prioritize particular activities, thus illustrating the tensions between cross domain integration and the need for deep collaboration in particular contextual domains. Table 1 outlines the priorities of the current groups

Table 4.1: AHA-EIP Action Group Priorities

Group	Priorities
A1: Adherence	The main objective of the Action Group A1 on Prescription and adherence to medical plans is to improve the quality of life and health outcomes of older people living with chronic conditions in at least 30 EU regions. Its action is based on a holistic approach, including enhanced self-care, personalized care, better adequacy of treatment, increased adherence to safe and effective care plans.
A2: Falls	Action Group A2 seeks to reduce falls by ensuring that new technologies to monitor falls enter markets faster, connecting research to innovation and strengthening procurement processes; support the set-up of regional programmes for early diagnosis and the prevention of falls (http://ec.europa.eu/research/innovation-union/pdf/active-healthy-ageing/a2_action_plan.pdf)
A3: Frailty	Action Group A3 seeks to understand the underlying factors of frailty, exploring the association between frailty and adverse health outcomes in older people and better

	preventing and managing the frailty syndrome and its consequences. These organizations are implementing their own "commitments", which are measurable and concrete activities at local, regional or national level aimed at improving older people health and quality of life.
B3: Integrated Care	Action Group B3 aim to reduce the avoidable/unnecessary hospitalisation of older people with chronic condition. The goal is integrated care services, that are "more closely oriented to the needs of patients /users, multidisciplinary, well co-ordinated and accessible, as well as anchored in community and home care settings. Such models coordinate between levels of health services and align them with social care, along the whole health promotion and care chain. They harmonize and coordinate the management, organization and delivery of services to make sure they provide quality and efficient solutions to the needs of the patients" (see http://futurage.group.shef.ac.uk/assets/files/launch%20conference/07%20Timmers.pdf
C2: Independent Living	Action Group C2 is developing interoperable independent living solutions, including guidelines for business models, claiming that "this should boost the deployment of open and personalised solutions for active and independent living that are supported by global standards and new evidence on the return of investment". C2 seeks to contribute to the creation of "a new market for cost-effective products and services for older people that helps them to live a more active and independent life".
D4: Age Friendly Environments	Action Group D4 focuses on Innovation for age friendly buildings, cities and environments is to bring together partners from all over Europe who are committed to implementing strategies for the creation of age-friendly environments which support active and healthy ageing of the European population.

Source: https://webgate.ec.europa.eu/eipaha/actiongroup/index/d4

The AHA-EIP has produced an "Excellent innovation for ageing A European Guide"[17] which lists a number of partnerships across Member States (CEC, no date). A number of A10 and Cohesion regions are involved in this process, suggesting that it is not only north-western Member States which are making progress in this field. So, for example, Greece established an EIP-AHA partnership of professionals in health and care aims to address the challenges of an ageing society with innovative services and practices.[18]

In 2014 a ***European Joint Programming Initiative (JPI) on Demographic Change*** (JPI-DC), also known as *J-Age* was established with the strapline "More Years: Better Lives: the Potential and Challenges of Demographic Change"[19]. This FP7 initative involves 12 Member States: Austria, Belgium, Denmark, Finland, France, Germany, Italy, the Netherlands, Poland, Spain, Sweden, the UK; plus Switzerland and Turkey[20]. The Partnership is intended to provide better information, coordination and collaboration of national programmes. Funding will depend on national governments and relevant agencies willingness to take part. The JPI-DC is co-ordinated by a Finish partner, the National Institute for Health and Welfare (THL)[21]. The initial vision (JPI, 2011) set out five broad work packages for consideration:

[17] http://ec.europa.eu/research/innovation-union/pdf/active-healthy-ageing/rs_catalogue.pdf
[18] See http://europa.eu/rapid/press-release_MEMO-14-343_en.htm
[19] See www.jp-demographic.eu
[20] Some the action areas also involve regions (see Peter Wintlev-Jensen PPT Slide 9 of http://www.age-platform.eu/images/stories/20121120_DGCONNECT.pdf
[21] The National Institute for Health and Welfare (THL) is a research and development institute under the Finnish Ministry of Social Affairs and Health. The listed contacts are Professor Richard Pieper

Health & Performance, Social Systems and Welfare, Work & Productivity, Education & Learning and Housing, urban-rural Development and Mobility. The Vision Paper again emphasised the importance of active ageing and independent living and also introduced the concept of the 'age-friendly city'[22] into the discussion thus setting the notion of independent living at home into the wider urban agenda:

> "…living independently in one's known (own?) home and environment as long as possible is a basic requisite for quality of life in old age. At the same time, social participation and connectedness to public space and its communities is of equal importance, especially in rural areas. *New approaches in planning, building and design, the use of assistive technologies*, new care and support concepts for accessible, secure public and private transport can contribute to the development of the age-friendly city" (italics added).

The *Vision* recognises the need for continued and increased investment in R&D in addressing the Ageing Challenge, noting the need for "small innovations supporting life in old age and self-service-technology enhancing the productivity of households with older persons" suggesting that "the challenge is to produce technologies for dependent older persons to help themselves in coping with daily life in a way accustomed to their life styles" (JPI, 2011:12). JPI will explore the "..implementation of holistic and integrated assisted living services focused on promotion and prevention including technical approaches and research into business models and service concepts are also to be addressed"[23] (JPI, 2011:12). When, however, the JPI S*trategic Research Agenda* emerged in 2014[24] it prioritized activities "which do not duplicate the work of other programmes, especially in the field of biomedical and technology research where much research funding is currently concentrated" (JPI Strategy, 2014). This move away from technology is interesting as it appears to suggest a greater focus on social innovation. The Research Agenda focuses on four research domains: Quality of life, health and wellbeing; Economic and social production; Governance and institutions; Sustainable welfare. Within these broad research domains eleven research streams have been established which include: wellbeing and health, participation, ageing and place, integrating policy, inclusion and equity, welfare models, and of most interest to our project (and despite the downplaying of technology) technologies for living. All of these speak to the social innovation agenda.
Again from our smart specialisation and social innovation perspective, the partnership approach outlined in the JPI research agenda may be of as much interest as the substantive research as: "The aim of all researches on Demographic Change will be to develop strong relationships between academia, policy makers and other public and private stakeholders including older people" (JPI, 2011). This mirrors the approach of the EIP-AHA and resonates with the general trend to collective and more inclusive approaches to innovation, which include concepts such as the Quadruple Helix and Living Labs. It is not clear to what extent JPI-DC has an explicit regional approach, though the presence of umbrella

(richard.pieper@thl.fi) or Ms Mira Koivusilta (mira.koivusilta@thl.fi). The UK representative is listed as Joy Todd, Economic and Social Research Council, joy.todd(at)esrc.ac.uk

[22] See WHO's Age-friendly cities agenda and the Smart Cities Agenda

[23] This passage well describes the sort of approach which is required for 'living well for longer at home'. But how do we bound approaches in the context of S3 as a policy architecture which privileges economic innovation for

[24] http://www.jp-demographic.eu/about/strategic-research-agenda

organisations on its Societal Advisory Board (SAB) suggests an explicit sub-national territorial dimension; the Council of European Municipalities and Regions chairs the SAB and European Regions Research and Innovation Network (ERRIN) is also a member[25].

CHAPTER 5: TECHNOLOGY AND COMPLEMENTARY SOCIAL INNOVATION FOR AN AGE FRIENDLY SOCIETY

> "Considerable literature has appeared suggesting that Assistive Technologies (ATs) and Information and Communication Technologies (ICTs) may improve quality of life, extend length of community residence, improve physical and mental health status, delay the onset of serious health problems and reduce family and care-giver burden." (Blaschke et al, 2009: 1)

> "The key was to make the link between what technology can do for you and how inherently conservative systems can adopt and change and deliver new ways of providing health and care." (Zahid Latif, Head of Healthcare at Innovate UK)[26]

As suggested by the JPI-DC, technology has been a major focus of R&D spend in the context of Ageing. So, for example, in last programming period €400million was allocated to "ICT for independent Living and Inclusion", which was complemented by the JRP on Ambient Assisted Living co-financed to the tune of around €750m. A further €100m was allocated to other research on e-Health (see BEPA, 2010: 77)[27]. This approach is being replicated and deepened within the framework of Europe 2020. In this section we briefly outline some of the ICT policies and initiatives aimed at, or touching on, the ageing theme. Increasingly policy statements make the link between the need to address societal challenges through technologies and the economic opportunities opened up through doing so.

The most important policy in respect to technology is ***The Digital Agenda for Europe***. This covers a wide range of activities, but from our perspective its claims regarding the ""'Smart use of technology and exploitation of information will help us to address the challenges facing society". Particular note is made of the potential for digital technologies to address health and care, including through AHA policies[28] This theme was expanded on by Neelie Kroes, who asserted that:

> "There are amazing innovations in health and care now. Whether directly linked like smart health monitoring systems, balance training devices, or more commonly used tools and services like Skype, social networking sites or online shopping allowing people to connect, communicate and live independent lives. We have plenty of ways to help connect older Europeans, to make their lives easier and more affordable….ICT, if used in a smart way, also helps carers to improve their job prospects, skills and job

[25] http://www.jp-demographic.eu/about/soab-societal-advisory-board
[26] http://www.theguardian.com/healthcare-network/2014/mar/17/open-access-data-empower-patients
[27] For example, the Joint Research Centre "Scientific Support for Public Health". http://ec.europa.eu/dgs/jrc/index.cfm?id=1410&dt_code=NWS&obj_id=18340&ori=RSS Last accessed 17.11.13
[28] http://europa.eu/rapid/press-release_MEMO-10-200_en.htm?locale=FR

satisfaction….. We want to connect research and innovation, from the lab to real-life."[29]

There are two key things to note in particular about this statement which reflect a wider change in attitude to digital investment in policy discourses. First, increased attention to 'moving out of lab' and to experimenting in actual social settings. Second, less attention to inventing and innovating new products, and more to disseminating existing, and often quite mature technologies such as Skype, more deeply into society, including their repurposing for societal challenges. Another area of small-scale developments which is attracting interest is 'Apps' where it is assumed individual developers and micro-firms can gain access to the 'long-tail' economy.[30] However, the potential of apps to contribute significantly to growth has recently been questioned and it has been suggested that most of benefits will be captured by large firms.[31]

Table 5.1: Ageing and ICT: 'solutions' for daily and independent living

Daily shopping, travel, social life, public services: easy access over the internet to order goods online e.g. when reduced mobility makes physical shopping more difficult;
Safety (making sure entrance doors and windows are locked/closed when leaving the house or sleeping; checking for water or gas leaks; and turning all but one light off when going to bed, etc.);
Reminders (memory problems tend to be associated to ageing and thus support may be needed in taking medication and fulfilling household tasks);
User-friendly interfaces (for all sorts of equipment in the home and outside, taking into account that many elderly people have impairments in vision, hearing, mobility or dexterity);
Telecare and telemedicine opens up new opportunities for providing medical care to the home and there are many new developments in ICT-based home care, including ways of monitoring wellbeing and providing a secure home environment.
Personal health systems include wearable and portable systems for monitoring and diagnosis, therapy, repairing/substitution of functionality and supporting treatment plans for individuals with a chronic disease, complemented by telemonitoring and telecare, to avoid hospitalization.
Support for people with cognitive problems and their carers to stay at home for longer and remain active for as long as possible, e.g. through cognitive training, reminders, GPS tracking EU Societal Challenges, etc.
Social communication: easy access to phone and video conversation, notably if enabled by broadband to stay in touch with family and friends, overcoming social isolation.
Support for more efficient workflows in care, by integrating health and social care through sharing information, monitoring and follow-up to interventions across different organisational and physical boundaries.

Source: drawn from Souza and Leel (eds) (2013)[32]

A key initiative in the digital arena is ***Ambient Assisted Living Joint Programme (AAL JP)*** which aims "to create better conditions of life for the older adults and to strengthen the industrial opportunities in Europe through the use of information and communication technology (ICT)". Here the concept of Ambient Assisted Living is understood as a means:

[29] http://europa.eu/rapid/press-release_SPEECH-11-294_en.htm?locale=en
[30] Long tail economics was first coined by Chris Anderson in Wired. The notion is sketched out at: http://www.longtail.com/about.html
[31] For a view on market growth in apps overall and relative position of Europe see : http://www.visionmobile.com/blog/2014/08/european-app-economy-2014-europe-losing-ground-asia/
[32] Sousa, M. and Leel, A.S. (eds) (2013) Network for the Market uptake of ICT for Ageing Well: ICT for Ageing Society Strategic Agenda (Deliverable 3.5)

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

The AHA-JP seeks to bring together small and medium enterprises (SME), research bodies and user's organizations (representing the older adults) to "foster the emergence of innovative ICT-based products, services and systems for ageing well at home, in the community, and at work, thus increasing the quality of life, autonomy, participation in social life, skills and employability of elderly people, and reducing the costs of health and social care". From a European innovation systems perspective it seeks to create a critical mass of European research, development and innovation in technologies and services for ageing well in the information society, with a coherent framework "for developing common approaches and facilitating the localisation and adaptation of common solutions which are compatible with varying social preferences and regulatory aspects at national or regional level across Europe"[33].

EIP-AHA Action Group C2 is concerned with Inter-operable Independent Living Solutions (see Wintlev-Jensen and van den Berg, 2012). The EIP-AHA has developed a number of 'Reference Centres', which provide "examples of a comprehensive, innovation-based approach to active and healthy ageing. They can be coalitions of regions, cities, integrated hospitals or care organisations that are able to show their impact and particular innovative practices which could be transferred to other European contexts"[34] (see Appendix 2). A brief analysis of these sites suggest social and organisational innovation, including new or deeper partnerships, including triple and quadruple helix, using a range of digital technologies, with benefits to a significant number of patients claimed, but no reference to ST&I or exploiting technology or process innovation for commercial, firm or place competitive advantage. Discussion of 'economic' impact relates mainly to cost savings which might accrue from applying technologies to patient care. **Box 3** provides an example of a project supported by EIP-AHA, which involves partners from three of the SmartSpec project countries, though not necessarily our SmartSpec regions[35].

Box 3: The Express2Content (E2C) project was liver for three years (ending in March 2013) and was funded by the Ambient Assistent Living (AAL) joint programme. E2C focused on issues of loneliness and social isolation amongst the elderly, which is known to have negative implications for health and wider quality of life. The project sought to develop innovative solution to this problem through "preventive social technology", and strategies that allow their integration into "the service ecology of elderly care". E2C combined individual, societal and commercial perspectives using a Living Lab approaches, to create the conditions to intensify "interaction, communication and dialogue between the users and contribute to the feeling of wellbeing, self-esteem and belonging". E2C divided outcomes into three (inter-related) categories 1: At an individual level E2C aims at helping people to stay active through using their creative potential 2: At a societal level having

[33] This paragraph is drawn directly from http://www.aal-europe.eu/about/objectives/#sthash.8fnOZiGo.dpuf
[34] https://webgate.ec.europa.eu/eipaha/index/site There a number of reference sites which might form an element for WP2 case studies should we decide to go this way. One question for WP2 is how/whether these are then connected with regional plans.
[35] See presentations from Reference Sites re 'scaling up' are available at http://ehealth2014.org/presentations/the-eip-aha-scale-up-strategy-and-examples-from-reference-sites/

more elderly people continuing to live independent, active and satisfying lives in their own homes, thus lessening cost rises in health and long term care. 3: Creating a sustainable commercial solution that develop the existing solutions into a wide spread E2C service, "applying specific, relevant media-content and social media principles (as seen on for instance YouTube and Facebook) which are not broadly used by elderly people today". The project involved partners from four European countries, Denmark, Finland, the Netherlands and Sweden. The project consortium, was led by Copenhagen Living Lab and involved the private sector as well as research organisation, local authorities and citizens organisations.
http://www.express2connect.org/uploads/E2C_Factsheet_2011.pdf. A company - People Value Company (PVC) - was created to sustain and commercialise the activities (see
http://www.express2connect.org/e2c_outcomes.html

The European Institute of Technology's (EIT) was established in 2008 as an independent body which aims to enhance Europe's ability to innovate and to help rapidly translate innovation into products and services to provide "solutions to rapidly emerging societal problems and developing products that meet the demands and desires of consumers"[36]. In line with current policy concerns, EIT's Strategic Innovation Agenda (SIA) set Innovation for Healthy and Active Ageing as one of its thematic fields and in 2014 announced a call for Knowledge and Innovation Communities (KICs)[37] to address this issue[38]. KICs can receive up to 25% funding from EIT but must show that they can raise the rest from a range of sources (including EU Funding and regional and local funds). KICs require co-location so are place based centres of competence.

A recent Staff Paper from DG SANCO sought to demonstrate how investing in health contributes to the Europe 2020 objective of smart, sustainable and inclusive growth[39]. A ***European eHealth Forum*** has also been established to bring together communities of interest across Europe. One area of concern is "how technology can bring positive changes into healthcare systems and turn today's health and ageing challenges into economic growth"[40]. Boxes 4 and 5 give examples of initiatives being undertaken by members of the Forum.

Box 4: "Wearable tech" is a growing field for health application. The USEFIL project seeks to combine a smart watch and "an even smarter mirror" to make more transparent behavioural and perceptual patterns to individuals and their carers. The product was developed through an EU-funded research project coordinated by Demokritos, the Greek National Centre for Scientific Research. Cameras behind the mirror register a patient's facial expression and body language. Meanwhile, a smart watch around the wrist records daily activities, blood pressure and heart rate. This information is combined into infographics and shown on the mirror's surface, along with a calendar and clock. The information is also shared with carers who can use this feedback to prescribe appropriate medication, to decide an appointment is needed soon, to send reminders of appointments through the mirror, ensuring patients will not forget them. The project claims that smart mirror and watch are unobtrusive and that " people don't need to change their home or way of living, to use them" and that "the system helps elderly people stay independent for longer". The project is seeking to forge partnerships with American companies for commercialisation http://europa.eu/rapid/press-release_MEMO-14-343_en.htm

[36] http://eit.europa.eu/eit-community/eit-glance
[37] EIT's asserts that KIC's are distinctive from other innovation models in that they feature: a high degree of integration, a long term perspective, efficient governance, co-location, and a particular culture. See: http://eit.europa.eu/activities/innovation-communities/what-makes-kic-kic
[38] http://eit.europa.eu/collaborate/2014-call-for-kics
[39] http://ec.europa.eu/health/strategy/docs/swd_investing_in_health.pdf
[40] http://europa.eu/rapid/press-release_MEMO-14-343_en.htm

Box 5: The SOCIABLE Project was a EU funded project that ran from 2009 to 2012. It was concerned with ICT-assisted *cognitive training and social* activation to older adults with Mild Cognitive Impairment and patients suffering from mild Alzheimer's disease, helping them stay mentally fit. The project uses a single platform (a tablet, an 'all-in-one' PC or a 'digital table', a table with a touch-screen) with over 25 applications. "These include cognitive training exercises (covering logical reasoning, language and constructional practice and spatial orientation). They also include the "Book of Life", a personal diary application, where people can store life experiences, memories and thoughts, in the form of texts, pictures and video, which can also be shared with others, thus remaining active socially". SOCIABLE involved public, private and third sector (foundations) as well as end users. Coordinated by SingularLogic S.A a Greek software vendor, the software was used in seven organisations in Greece, Italy, Norway and Spain. SOCIABLE is/was connected to other EU-funded projects (e.g. IDF, Cloud4All, Prosperity4All) with a view to further developing and scaling the sofware http://europa.eu/rapid/press-release_MEMO-14-343_en.htm

One area of technology development which serially captures the public imagination is robotics. This technology has long been imagined in fiction and film and "continue to be shaped expectations created by fictions and continuously nurtured by it."[41] Non-humanoid robots, however, are now commonplace in mass production industries such as the cars and electronics and are now entering the domestic sphere in the shape of products such as 'Roombas' for floor cleaning[42]. Media and policy interest in the subject waxes and wanes, but recently has been very much on the rise, with policymakers in advanced countries seeking to further stimulate innovation in this field. For example, in the US the National Science Foundation (NSF) sponsors a National Robotics Initiative and the Defense Advanced Research Projects Agency (DARPA) has funded a multi-annual Robotics Challenge (DRC).[43] The Japanese government set up a "robot revolution realisation council" in September 2014 to create a five-year blueprint to expand the industry.[44] In Europe a ***Partnership for Robotics in Europe*** (SPARC) has been established. [45] As the name implies, this partnership is concerned with R&DI in robotics technology, where Europe is said already to be a world leader, with a share in the world service robotics market standing at 63% and with excellent interdisciplinary research in "intelligent robots" and "a culture of cooperation between industry and academia."[46] As well as direct economic benefits from producing and selling robots there is said to be an even bigger benefit in performance improvement and cost savings in the activities to which they are applied. A **Strategic Research Agenda** for robotics in Europe was outlined as early as 2009[47]. This was extended and re-launched in 2013 under the umbrella of ***euRobotics***, with a newly constituted ***EURobotics-AISBL*** bringing together the industry network European Robotics Technology Platform (EUROP) and the academic network of EURON, as a legal entity through a PPP with the Commission, to work on a 'multi-annual roadmap' for European Robotics through

[41] Morton, O. (2014) 'Immigrants from the Future' The Economist, 29th March 2014 . Also available at: http://www.economist.com/news/special-report/21599522-robots-offer-unique-insight-what-people-want-technology-makes-their
[42] http://en.wikipedia.org/wiki/Roomba
[43] http://www.theroboticschallenge.org/
[44] Inagaki, K. (2014) 'Japan Aims to Turn Robots into Profit', Financial Times, , 8th October 2014 http://www.ft.com/cms/s/0/e98a5d08-4ae1-11e4-839a-00144feab7de.html?ftcamp=crm/email/2014108/nbe/AsiaMorningHeadlines/product&siteedition=uk#axzz3FchuG69D
[45] http://www.sparc-robotics.net/
[46] http://sparc-robotics.eu/about/
[47] http://robotics.h2214467.stratoserver.net/cms/index.php?idart=133

which to guide Horizon and other European research on the topic.[48] The first Horizon call guidance[49] covers manufacturing and agricultural sectors as well as areas for generic research on robotics such as developing cognition and Human Robotic Interaction. Considerable hope is now being attached to robotics in meeting societal challenges. So, for example, at the time of writing the US NSF's Robotics Initiative has a call titled "the realization of co-robots acting in direct support of individuals and groups" which is supported by the various National Institutes for Health, including the National Institute for Ageing.[50] Japan, reflecting its position as currently the most aged nation in the world, is subsidising robotics innovation in the care sector. These range from 'robot power suits', wearable technologies which assist carers in lifting patients through Hybrid Assistive Limbs (HAL) to 'communication-type robots'. The latter include PALRO, a humanoid robot which has been tested in the context of "aged care residents and is mainly used for social interaction and recreation. PALRO uses facial recognition to communicate with residents and has the capacity to remember up to 100 people's faces. It can also sing, play games and provide news updates."[51] Other robotic technologies include a robotic bed which converts to a wheelchair and a robotic device to help the elderly go to the toilet[52]. Europe's SPARC partnership is also exploring how technologies can be used in health and care (see **Box 6**). A large number of issues need to be addressed, however, including (lack of) dexterity, real-time re-programmability, 'humanising' the machines to make them acceptable to people who are often frail and vulnerable.

Box 6: Potential for robotics in care: In Europe: "SPARC is the partnership for robotics in Europe to maintain and extend Europe's leadership in robotics. Topic groups include health care and human-robot interaction. The use of robotics technology in healthcare already has a direct impact on the delivery of specific services, this impact will expand in the coming decade. Europe has considerable expertise in the application of robotics technology in this sector. The global market in tele-operated surgical robots has grown rapidly in the last 5 years. Opportunities in rehabilitation and hospital logistics exist that can be identified has having a direct cost saving impact. Europe's reliance on the public procurement of healthcare provides many advantages to develop and deploy systems through near market activities. Europe has numerous global healthcare equipment suppliers and there is a significant opportunity to gear up the application of robotics technology. Robotics technology also has significant potential to impact on the European Societal Challenges concerned with the ageing society, improving health and wellbeing http://www.eu-robotics.net/cms/upload/PDF/SRA2020_0v42b_Printable_.pdf (pp 30, 36 and 46-47). One claim is that robots can provide "[A]ssistance with simple physical tasks can help elderly people stay in their own homes for longer, improving their quality of life and deferring the costs of managed care. Improvements in robotics, especially perception, manipulation and grasping, will enable robots to undertake much more complex tasks and to assist humans with physical and cognitive deficits. Even within the context of managed care, appropriate use of robotic systems will allow a higher standard of care, assisting nurses who have to lift patients or heavy material." http://europa.eu/rapid/press-release_MEMO-14-386_en.htm A number of projects have already been funded which explore the role of robots for care for older adults at home. These include: *robotic companions for the elderly* (http://accompanyproject.eu/); and, social interaction and monitoring (http://www.giraffplus.eu/index.php?option=com_content&view=article&id=58&Itemid=55&lang=en)

[48] Strategic Research Agenda for Robotics in Europe Multi-Annual Roadmap 2014-2020 http://www.sparc-robotics.net/roadmap/

[49] http://www.eu-robotics.net/cms/upload/PDF/Multi-annual_Roadmap_2020_Call_1_Initial_Release.pdf

[50] http://www.nsf.gov/pubs/2014/nsf14500/nsf14500.htm

[51] http://www.australianageingagenda.com.au/2014/08/06/japan-eyes-robotic-future-aged-care/

[52] Inagaki, K. 'Japan Aims to Turn Robots into Profit', Financial Times (2014) 9th October 2014, http://www.ft.com/cms/s/0/e98a5d08-4ae1-11e4-839a-00144feab7de.html?ftcamp=crm/email/2014108/nbe/AsiaMorningHeadlines/product&siteedition=uk#axzz3FchuG69D

To summarize, technology remains at the forefront of innovation to address the ageing challenge. This is clear in policy statements, spending patterns and the variety of initiatives emerging (or being sought out), and being supported by both Europe and Member States, through JIPs and KICs. It is an area with significant levels of cross-border partnerships for knowledge transfer. A wide variety of technological 'solutions' are being explored ranging from fairly incremental approaches, wherein fairly widespread technologies and interfaces are being adopted and adapted to elder populations to more radical and 'futuristic' solutions such as developing robotics systems for health and social care.

CHAPTER 6: ACTIVE HEALTHY AGEING IN THE UK: SOME OBSERVATIONS

The UK Department for Business Innovation published its Economic Opportunities and Challenging for Ageing (BIS 2011) to draw attention to the opportunities for businesses[53]. Age UK (2011) spoke about the 'Golden Economy', which was at least a change from the 'silver economy', from which businesses could benefit.[54] Innovate UK (formerly the Technology Strategy Board (TSB)) is the UK's 'innovation agency' and plays a major role in forming and administering innovation policy nationally. Sponsored by BIS, the TSB, seeks to "accelerate economic growth by stimulating and supporting business-led innovation" bringing together "business, research and the public sector, supporting and accelerating the development of innovative products and services to meet market needs, tackle major societal challenges and help build the future economy" (TSB 2008). Health and care, including the ageing population, is one of TSB's current 13 priority areas. Much of the focus here is on assistive technologies for independent living, innovation which is seen as meeting economic *and* social goals. From a technology perspective, assisted independent living includes:

> "..the use of sensor and information and communication technologies to facilitate the remote delivery of health, care and support to people to allow them to live as independently as possible in the lowest intensity care setting consistent with their needs and wishes."

Assisted living technology is an umbrella term for both products and services. Table 2 sets out TSB's classification.

Table 6.1: Classification of Assistive Living Devices

Telecare	Products and services only, includes devices and managed services
Telehealth	Products and services only, includes devices and managed services
Telecare & Telehealth	Combined Telecare & Telehealth products and service, includes devices and managed services
Environmental Control	Home automation and Environmental Control Solutions
Communication Aids	Including Video Conferencing solutions and products and services with Dementia, Learning Disabilities and Sensory loss
Care Technology	Devices and services to support care workers delivering assisted living services in the community

Source: TSB, 2008

[53] https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/31973/11-915-economic-opportunities-challenges-ageing.pdf

[54] http://www.ilcuk.org.uk/files/pdf_pdf_155.pdf

Current research funded by TSB builds on an Assisted Living Innovation Platform (ALIP) which ran from 2007 to 2012. The ALIP came under the Health Technologies and Medicine KTP. TSB also has responsibility for four "dallas" (delivering assisted living lifestyles at scale) projects or "seeds" (including Liverpool's More Independent (Mi) programme which is an EIP-AHA Reference Site – (see appendix 2). The other three are 'ifocus', 'year zero' and 'living it up'. The dallas 'communities' are intended to demonstrate:

> "how innovative technologies and services can be used to promote well-being and provide top quality health and care, enabling people to live independently and to expect a better future. Working with existing statutory health and social care provision the redesign of services will encourage individuals to own the management of their health and lifestyles, but with support from the wider community, health professionals and their families."[55]

Although large firms tend to loom large in these partnerships SME are encouraged to participate. ALIP and its successor projects are partly about assisting firms to develop new technologies (see InnovateUK's Health and Action Plan 2014-2015 and its Enabling Technology Strategy[56]), but also about diffusion and experimenting in 'real life' settings. Dallas, in particular, seeks to set innovative technologies in the context of 'self-management' and 'circles of support' which are central to current social care discourses in the UK. For example, NESTA and the Innovation Unit for public services recently ran a 'People Powered Health' set of projects[57], whose focus was on very much on social[58] and organisational innovation[59], though technologies, including small scale elements such as 'apps' were explored.

CHAPTER 7: REGIONAL ASPECTS OF AGEING SOCIETY

> "As Demographic Change does not affect different Member States in the same way and even the Member States are not homogenous, regions and municipalities become important entities especially in the field of decisions regarding infrastructure, etc. (Europe of the Regions). Therefore *the perspectives of regional networks should be further evaluated and local authorities must be empowered to manage the challenges of Demographic Change* (JPI, 2011, Vision Paper: 7, italics added).

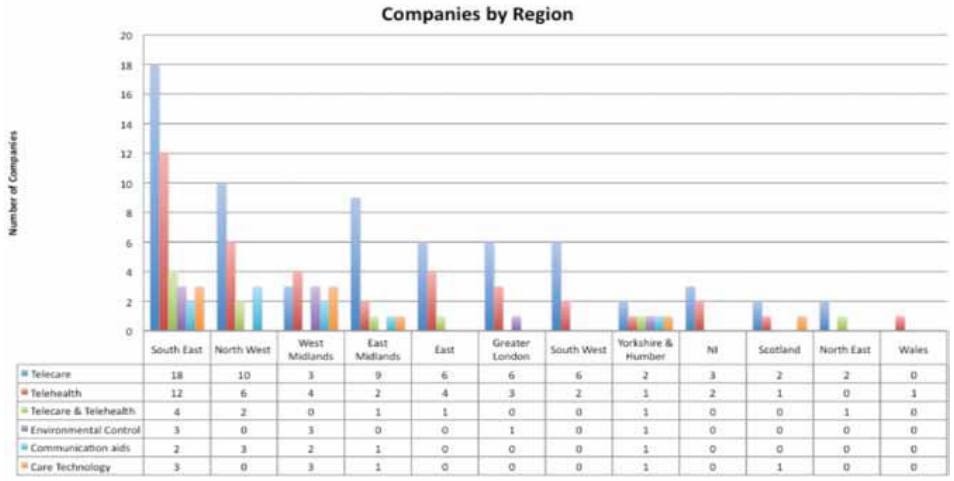
All regions face ageing, but the degree will differ. In some cases factors such as outward migration of young people, particularly from remote, rural and poorer regions will exacerbate the core factors. In other cases inward migration, including international migration will temper the effects of these core factors whilst perhaps creating other problems (housing shortages, stretched public services, etc.). Maps 1-4 in Annex 1 demonstrates differential patterns of ageing, anticipated population decline and anticipated proportion of

[55] https://www.innovateuk.org/healthcare#living
[56] See https://www.innovateuk.org/documents/1524978/16086103/Health%20and%20care%20infographic
[57] http://www.nesta.org.uk/blog/people-powered-health-one-year?utm_source=Nesta+Weekly+Newsletter&utm_campaign=1f9491c4e5-Nesta_news_weekly_1507147_15_2014&utm_medium=email&utm_term=0_d17364114d-1f9491c4e5-180909813
[58] The article by Tim Bradshaw in the FT can be found at http://www.ft.com/cms/s/2/d72f0e14-27ab-11e4-be5a-00144feabdc0.html#axzz3Aume88mK and was last accessed on 21 August 2014
[59] http://www.innovationunit.org/knowledge/our-ideas/health-and-social-care

population in the labour force. Central Europe, Eastern Germany, Southern Italy and Northern Spain are likely to suffer the worst population decline. Swedish and Finish regions (mainly rural and northern) and German (eastern) regions are most likely to experience working age population shrinkage, along with several central-eastern European countries (CEC, 2008). These trends are also apparent in the UK, though less sharp. Within the UK, Wales is particularly affected by ageing and shrinkage in working age population. Indeed, Wales falls into the second most vulnerable category on a European scale. The North East of England region is less affected but is also vulnerable and has an ageing population and a declining employment-age population.

Many of the measures required to address the ageing challenge (pension reform, workplace change, etc.) will be national level policies local and regional institutional actors are likely to have a limited role in policy formation, though this will vary from country to country. Localities and regions are likely to have greater responsibility, and perhaps some autonomy, when delivering social services for ageing populations, though this will again vary across Member States. So, for example, the countries which make up the UK are increasingly developing their own policies, though they remain constrained by the financial power of the centre and by pre-existing vertical silos. When it comes to seizing to the economic opportunities associated with the ageing agenda places will more or less advantaged on the traditional axis of industrial-sectoral strength. So, as Figure 2 illustrates, in the UK context at least, regional capacity to produce assistive technologies and services is not uniformly distributed by region (but see footnote[60] for caveats on this figure). One question is how many regions can establish and maximise "a competitive edge in global markets, smart specialisation…in specific markets/niches and international value chains." A second question is whether the societal challenge approach also potentially risks "overlap/imitation in development strategies (Regional Innovation Strategy Fact Sheet: 4-5). This approach also risks attention being diverted away from 'related industries and towards a diversity of related sectors which will be needed to address the multiplicity of ageing challenges.

Figure 7.1: Assistive technology firms by UK region



Source: TSB (2008) (p.9: Figure 2)

[60] Care is required when utilising Figure 3 as it does not adjust for overall size of economy or population size and it lacks detail about firms and firm size.

Box 7, however, illustrates the potential for initially small firms in non-metropolitan places to develop into successful multi-nationals working with local care companies in a number of countries and thus, perhaps, enhancing the competitiveness of their home area.

Box 7: Potential collaborative innovation home-based care case study

Tunstall Healthcare[61] is a UK founded company head quartered in the small town of Whitely, West Yorkshire, in the North of England. It now has operates in 30 countries, with offices in Europe (Belgium, Ireland, France, Finland, Norway, Sweden [Tunstall Nordic], Italy, Turkey, Cyprus, Spain, Denmark, Germany, Iceland, Switzerland Portugal), and in the US, Canada, Australia, New Zealand, Hong Kong, Malaysia, Taiwan and South Africa. It specialises in providing sensors, monitoring, alarm and other telehealth and telecare products and also provides back up services. It works in partnership with a number of organisations, including Carers UK[62]. Tunstall claims that:

"Our ongoing investment in R&D coupled with our comprehensive customer insight programme sustains this heritage of innovation, and means we remain at the forefront of providing new solutions which maximise the possibilities presented by the next generation of telehealthcare solutions".[63]

Tunstall works in partnership with universities and the third sector. So, for example, Virtex is a partnership between Tunstall, Fold Housing Association, Housing 21, DigiTV and the University of Sheffield which aimed to deliver an innovative research project to develop a Virtual Extra Care Service (VIRTEx) within local communities.[64] At the time of writing it is engaged in two studies under the dallas programme which was developed by the UK's innovation agency, the Technology Strategy Board, and joint funded by the National Institute for Health Research and the Scottish Government. It aims to demonstrate how innovative technologies and services can be used to promote well-being and provide top quality health and care, enabling people to live independently and to expect a better future. The total investment in dallas is £37.3 million and by summer 2015, the programme aims to involve nearly 170,000 people across the UK. Four consortia have successfully bid to run the programme, working with existing statutory health care provision. Tunstall Healthcare is a partner in two of the consortia, and will be involved in two initiatives:

i-Focus a nationwide programme offering people a range of products and services to help them feel more comfortable in their homes. The Warm Neighbourhoods scheme uses on-line and mobile technologies to enhance and organise informal care networks that help families, friends and neighbours to support others in the community in a practical way. i-Focus also aims to co-ordinate an interoperability strategy across the dallas programme.

The *Feelgood Factory* encourages people living in Liverpool to plan for their future in order to better manage their health and social care needs, supported by Life Enhancing Technologies(LETs). It aims to use discreet assistive technologies to help people with chronic health needs stay independent and avoid hospital admission[65].

As suggested in Section 3 and 4 there is strong regional engagement in a variety of European projects and in Joint Innovation Partnerships. This is further illustrated in **Box 8**. However, we do not know how integrated these projects are *within* the various participant regions. Nor do we know the extent to which they are based on regional innovation strategy priorities or are forming and element of emerging S3 strategies, either from a competiveness or a societal challenge angle, but JIPs and other instruments such a KICs could (should?) become part of a dual social ('orchestrating of social discovery) and economic ('entrepreneurial search') processes (see Richardson, et al, 2014: 17).

[61] http://uk.tunstall.com/
[62] http://www.carersuk.org/
[63] http://uk.tunstall.com/innovation/special-feature
[64] http://uk.tunstall.com/about/partners
[65] http://uk.tunstall.com/innovation/special-feature

Box 8: CORAL - Community of Regions for Assisted Living - is a European network of regions collaborating in the field of Ambient Assisted Living and Active and Healthy Ageing, through a process of open innovation. CORAL focuses on regional policies in these fields. A list of members is available at http://www.coral-europe.eu/ Two projects of particular interest to SmartSpec are INNOVAge and CASA which look at the complex issues that arise from demographic ageing and the many challenges for European senior care. The projects aim at finding sustainable, innovative and practical solutions that enable longer independent living, an economically feasible care for seniors and totally new ways of thinking about the structuring of senior care by using innovative methodologies. The projects also give opportunities for innovative companies to develop new tools and services. CASA (Consortium for Assistive Solutions Adoption) is about the development of regional policy and the exchange of knowledge around the up scaling of innovative ICT and services for independent living. Demographic changes make it necessary to organise the care and housing of senior citizens and chronically ill in a smarter way including the use of ICT. This also gives opportunities for innovative companies to develop new tools and services (http://www.casa-europe.eu/).[66] INNOVAge project aims at helping older people to live independently for longer in their own homes by increasing their autonomy and by the emerging of new 'technological supply chains' associated with new developments like independent living and eco-innovation, with a valuable contribution to minimize environmental impact of elderly daily life activities http://www.innovage-project.eu/[67]

It is clear that many cities and regions are starting to address the issue of ageing, often through the lens of AHA, and often with a focus on IHL. Boekholt et al (2013) suggest that as of November 2013, thirty regions had identified health as an area of strength during preparation of S3 strategies. Several of these were concerned with older people. The Committee of the Regions' Social innovation Forum has also identified a number of leaders in ICT and health and care, including Basque region and Flanders. However there is still a lot to learn about how regional and social policy can address the issues[68]. Some cities and regions are drawing on the WHO's notion of the 'age friendly city', a concept which the Commission has also adopted[69]. Some places are combining 'smart city' approaches with the 'age-friendly city'. Both the age friendly and smart city concepts are as much about changing attitudes and reflexive thinking as they are about new technologies, and open up possibilities for social innovations. However, as in many areas of innovation both the public and private sectors tend to push technological solutions. So, for example, Action Area 4 of the Commission's Action Plan on 'Innovation for Age-friendly buildings, cities & environments' (part of EIP-AHA) focuses on ICT and Smart Environments, combining ILH with wider urban access and isolation issues.[70]

[66] CASA participating regions are Flanders (Belgium) as Lead Partner, Noord-Brabant (the Netherlands), Kent County and Scotland (United Kingdom), Veneto Region and Friuli-Venezia Giulia (Italy), Southern Denmark, Wielkopolska (Poland), Catalonia and Andalucia (Spain), Timis County (Romania), East-Sweden and the Region Halland (Sweden) (http://www.casa-europe.eu/) .

[67] INNOVage partners are: The Baltic Institute of Finland (BIF, Tampere); South East Health Technologies Alliance (SEHETA, Loose) Geroskipou Municipality(Paphos, Cyprus); Junta de Castilla y Leon (Valladolid); Medic@LPS (La Tronche, Rhone-Alps); Region of Central Macedonia (Thessaloniki); Marche Regional Authority (Ancona, Marche); Razvojni Center SRCA Slovenije (Litija, Centralslovenian Region); Blekinge Institute of Technology (Karlskrona); RDA of South Bohemia, RERA (České Budějovice); Sofia Municipality (Sofia); Lithuanian Innovation Centre (Vilniaus Apskritis); INNOVage General Secretariat, SVIM – Sviluppo Marche Spa (Ancona); Fundacion Intras (Valladolid); TNO (Delft); Rzeszow Regional Development Agency (Rzeszów, Podkarpackie) http://www.innovage-project.eu/

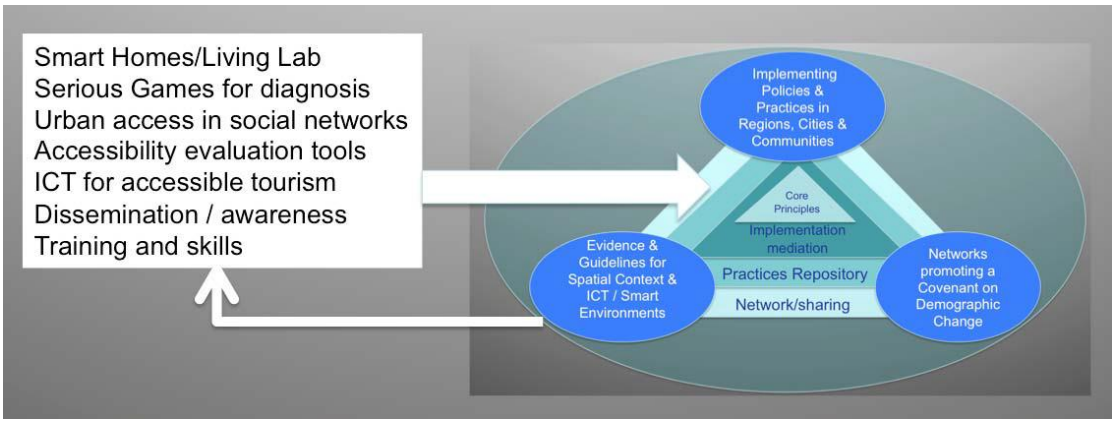
[68] http://www.nordregio.se/en/Nordregio-Research/How-can-Regional-and-Cohesion-policies-tackle-demographic-challenges/

[69] http://ec.europa.eu/research/innovation-union/pdf/active-healthy-ageing/d4_action_plan.pdf

[70] ec.europa.eu/research/innovation-union/...ageing/partners_conf_d4.pdf

IBM a global champion of the smart cities concept is working with a number of cities worldwide, through its Smarter Cities Challenge[71]. This covers a range of 'challenges' identified by cities. One of these is ageing. So, for example, IBM is working with Stravanger[72] on its ageing challenge in this context. Clearly technological solutions are central to IBM's thinking. The IBM approach illustrates both opportunities (for knowledge exchange and global learning) and threats (global templates rather than local solutions and exclusion of local SMEs) of working with external multi-national organisations, which are perhaps analogous to tensions associated with earlier forms of local development.

Figure 7.2: Innovation for AHA: Incorporating ICT and Smart Environments



Source: European Innovation Partnership on Active and Healthy Ageing 2012, figure 9 (p.14)

Other cities and regions are also positioning themselves as age-friendly cities (see **Box 9**), though an (admittedly cursory) analysis by the authors of this paper suggests that each is very different in terms of resources, political engagement, and approaches.

Box 9: Age-friendly policies in North of England (North West, Y&H, and North East NUTS 1 Regions) In England, cities in the North already aspire to be at the frontier of embracing the silver economy. Manchester has declared itself an Age-friendly City as the next step of its valuing older people strategy. Other Councils have taken sectoral approaches. For example, Doncaster, Sheffield and Wakefield are involved in housing innovation initiatives aiming to adapt housing for the needs of older citizens. In Newcastle, a strong collaboration between the University, the NHS and the Local Authority has seen the development of a strategy for innovation around the themes of ageing and health, linked to Newcastle Science City http://horizon2020projects.com/wp-content/uploads/2014/04/h2-Gov4-Newcastle-Uni-10563-Pro.pdf They are also involved with a number of European wide initiatives such the 'casserole club' or 'fix my street'. http://www.europecommons.org/

CHAPTER 8: CONCLUSIONS

Even though we identified social innovation (SI) as a concept and practice that could be complementary to technological innovation, this notion remains at this stage a suggestion

[71] http://smartercitieschallenge.org/smarter-cities.html
[72] http://www.stavanger.kommune.no/Global/IBM1459_SCC_Stavanger_Report%20(HR).pdf

rather than a reality. Based on our emergent findings, the concept remains unclear to policy makers, which allows them to either interpret it and use if freely, or to rebrand previous community development initiatives under a new heading. There is however very little indication that the inclusion of this concept in S3 guidelines has led to a significant reflection by policy makers about how they can use cohesion funds to deliver SI projects.

Regarding EU approaches to active healthy ageing our current knowledge suggests that they remain overwhelmingly dominated by technological solutions, despite several references to topics where SI could play a role. This includes issues such as better care, where horizontal approaches that include technological development, better public sector delivery of goods and services and community or end user involvement, would be essential to guarantee effective and tailored policies. SI could be a core concept in the design and implementation of such horizontal approaches, with its focus on need and the importance of social relationships as a complement to the traditional emphasis on the development and delivery of new products and services.

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Appendix 1: Mapping Europe's Ageing Population

Table 1

Population age structure by major age groups						
	0-14 years old		15-64 years old		65 years old or over	
	1991	2011	1991	2011	1991	2011
EU-27 (1)	19.3	15.6	66.8	66.9	13.9	17.5
BE	18.1	17.0	66.8	65.9	15.0	17.1
BG	20.1	13.2	66.5	68.3	13.4	18.5
CZ	21.1	14.5	66.3	69.9	12.6	15.6
DK	17.0	17.9	67.4	65.3	16.6	16.8
DE	16.2	13.4	66.8	66.0	14.9	20.6
EE (2)	22.2	15.3	66.1	67.6	11.7	17.0
IRL	26.8	21.3	61.8	67.2	11.4	11.5
GR	19.2	14.4	67.0	66.4	13.8	19.3
ES	19.5	15.1	66.7	67.8	13.8	17.1
FR	20.3	18.5	65.8	64.7	14.0	16.7
IT	16.3	14.0	68.6	66.7	15.1	20.3
CY	25.8	16.8	63.3	70.5	10.9	12.7
LV	21.5	14.2	66.7	67.4	11.8	18.4
LT	22.5	14.9	66.4	67.2	11.0	17.9
LU	17.5	17.6	69.1	68.5	13.4	13.9
HU	19.9	14.6	68.6	68.7	13.5	16.7
MT	23.3	15.3	66.2	69.2	10.5	15.5
NL	18.2	17.5	68.9	67.0	12.9	15.6
AU	17.5	14.7	67.5	67.7	15.0	17.6
PL	24.9	15.2	64.9	71.3	10.2	13.5
PT	20.0	14.9	66.4	66.0	13.6	19.1
RO	23.3	15.1	66.2	70.0	10.6	14.9
SI	20.6	14.2	68.6	69.3	10.8	16.5
SK	25.1	15.4	64.6	72.0	10.4	12.6
FI	19.3	16.5	67.2	66.0	13.5	17.5
SE	18.8	16.6	64.2	64.9	17.8	18.5
UK	19.1	17.5	65.2	65.9	15.8	16.7

(1) Excluding French overseas departments in 1991
(2) The population of unknown age is redistributed for calculating the age structure

Source: Eurostat, Statistics Explained, Population structure and ageing, 13.12.2013

Source: Saublens and Jepson (n.d.; 3)

Table 2

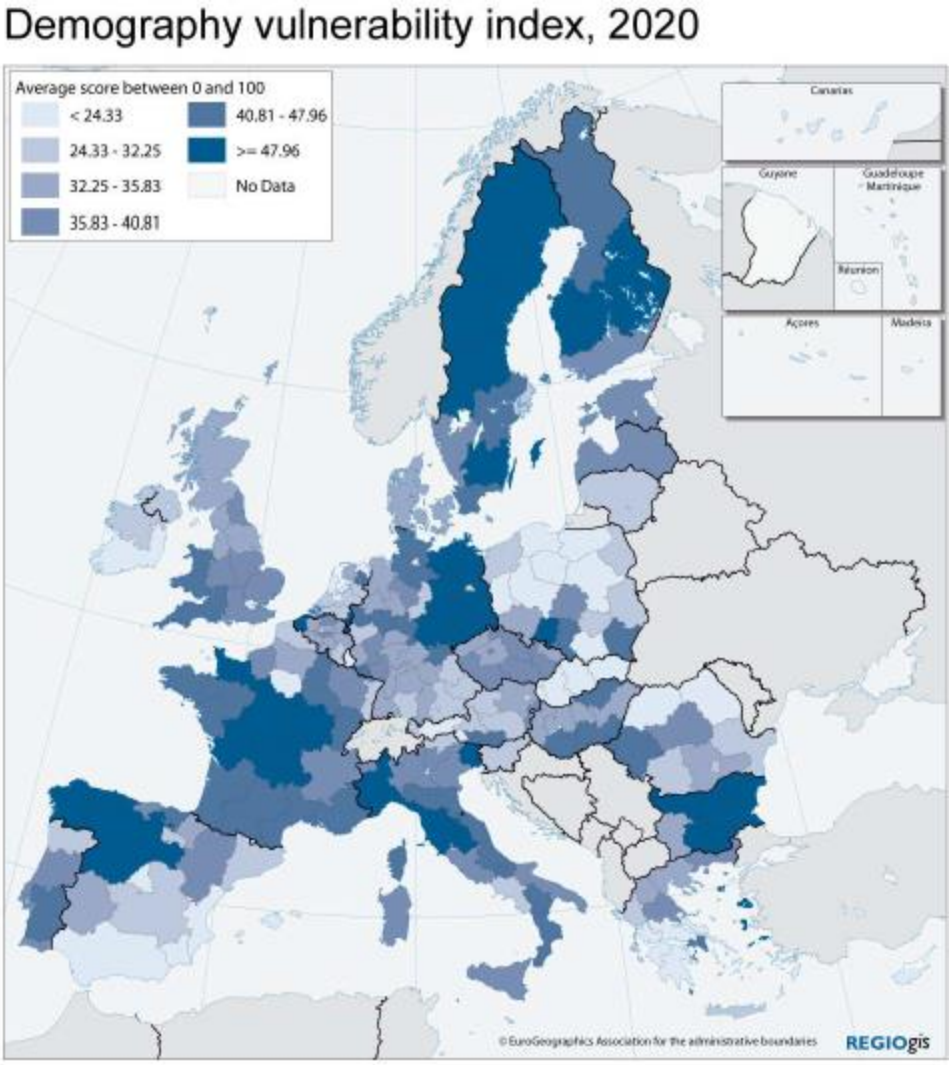
Population 65 years or over					
	2004	2011	2012	2013	Change between 2004 & 2013
EU-28	80 829 454	88 865 816	90 389 170	92 269 346	11 439 892
BE	1 780 10	1 883 182	1 924 934	1 959 654	179 534
BG	1 333 730	1 360 451	1 381 079	1 395 471	61 741
CZ	1 422 770	1 636 969	1 701 436	1 767 618	344 848
DK	804 578	933 781	968 084	999 801	195 223
DE	14 859 995	16 844 293	16 880 550	17 002 915	2 142 920
EE	218 784	231 922	234 851	238 233	18 449
IRL	447 744	526 865	544 201	562 405	114 661
GR	1 988 399	2 145 713	2 191 174	2 226 134	237 735
ES	7 146 678	7 982 995	8 128 041	8 262 393	1 115 715
FR	10 086 410	10 868 272	11 182 815	11 504 184	1 417 774
HR	735 333	760 655	765 355	773 141	37 808
IT	11 128 481	12 301 537	12 370 822	12 639 829	1 511 348
CY	86 112	106 510	110 441	114 442	28 330
LV	369 750	381 140	379 546	379 784	10 034
LT	524 142	545 307	543 333	542 198	18 056
LU	63 638	71 084	73 261	75 057	11 419
HU	1 567 090	1 671 135	1 675 914	1 701 675	134 585
MT	52 128	65 154	68 655	72 278	20 150
NL	2 251 154	2 594 946	2 716 368	2 824 345	573 191
AU	1 260 899	1 480 127	1 496 357	1 527 257	266 358
PL	4 951 319	5 190 409	5 325 015	5 487 713	536 394
PT	1 773 934	1 976 422	2 007 646	2 032 606	258 672
RO	3 178 865	3 250 502	3 269 688	3 286 414	107 549
SI	300 155	338 944	345 000	352 145	51 990
SK	621 273	678 448	690 662	710 222	88 949
FI	813 195	941 041	979 640	1 018 193	204 998
SE	1 541 254	1 737 246	1 784 668	1 828 283	287 029
UK	9 520 524	10 360 766	10 649 634	10 984 956	1 464 432

Source: Eurostat

Table

source: Saublens and Jepson (n.d; 4)

Map 1: Regional Exposure to Demographic Change over the Medium Term

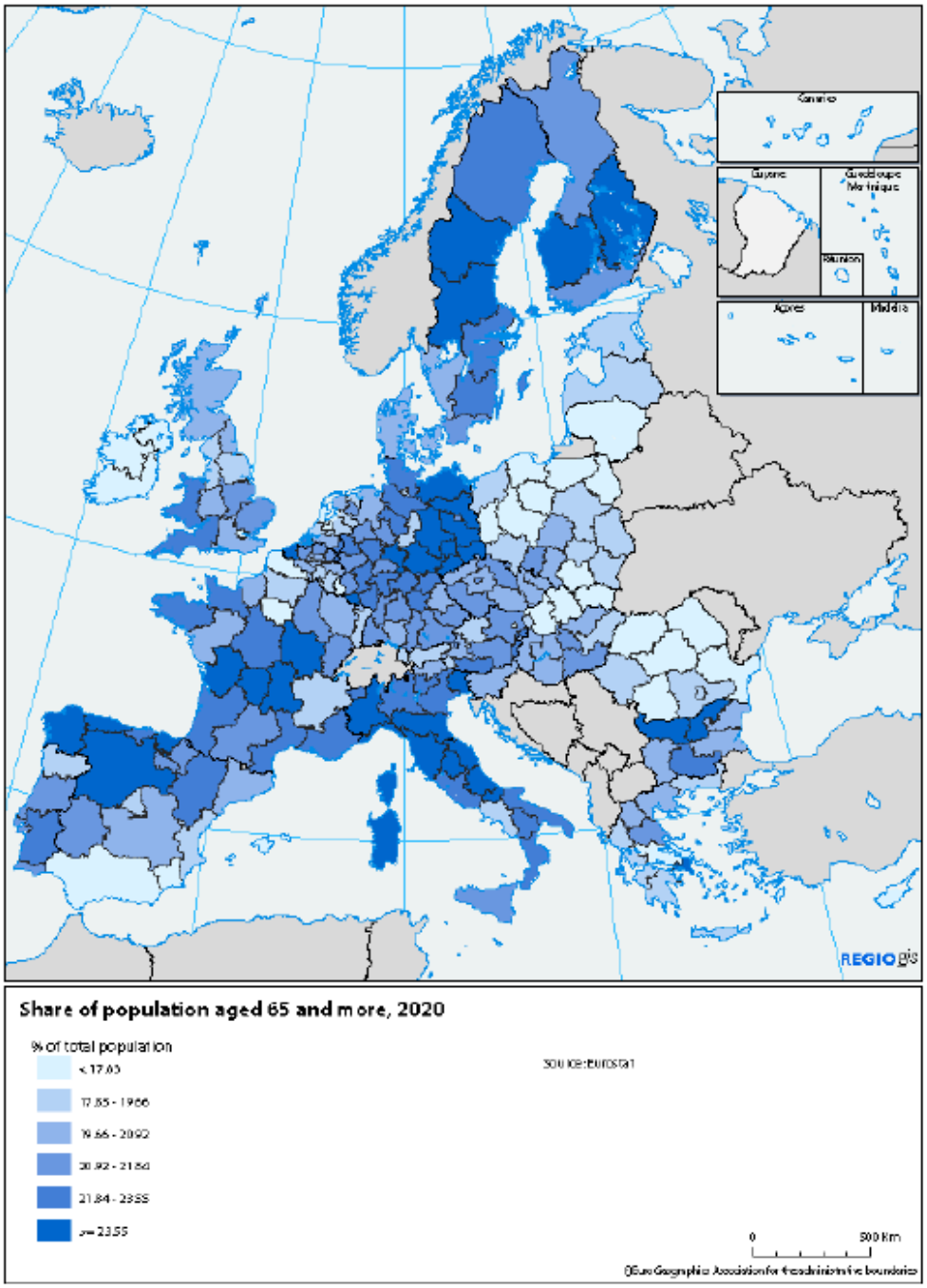


Note: *Index based on the estimated share of people aged 65 and over in total population, share of working age in total population and population decline in 2020*

Source: CEC, 2008, figure 2.1 (based on data from Eurostat)

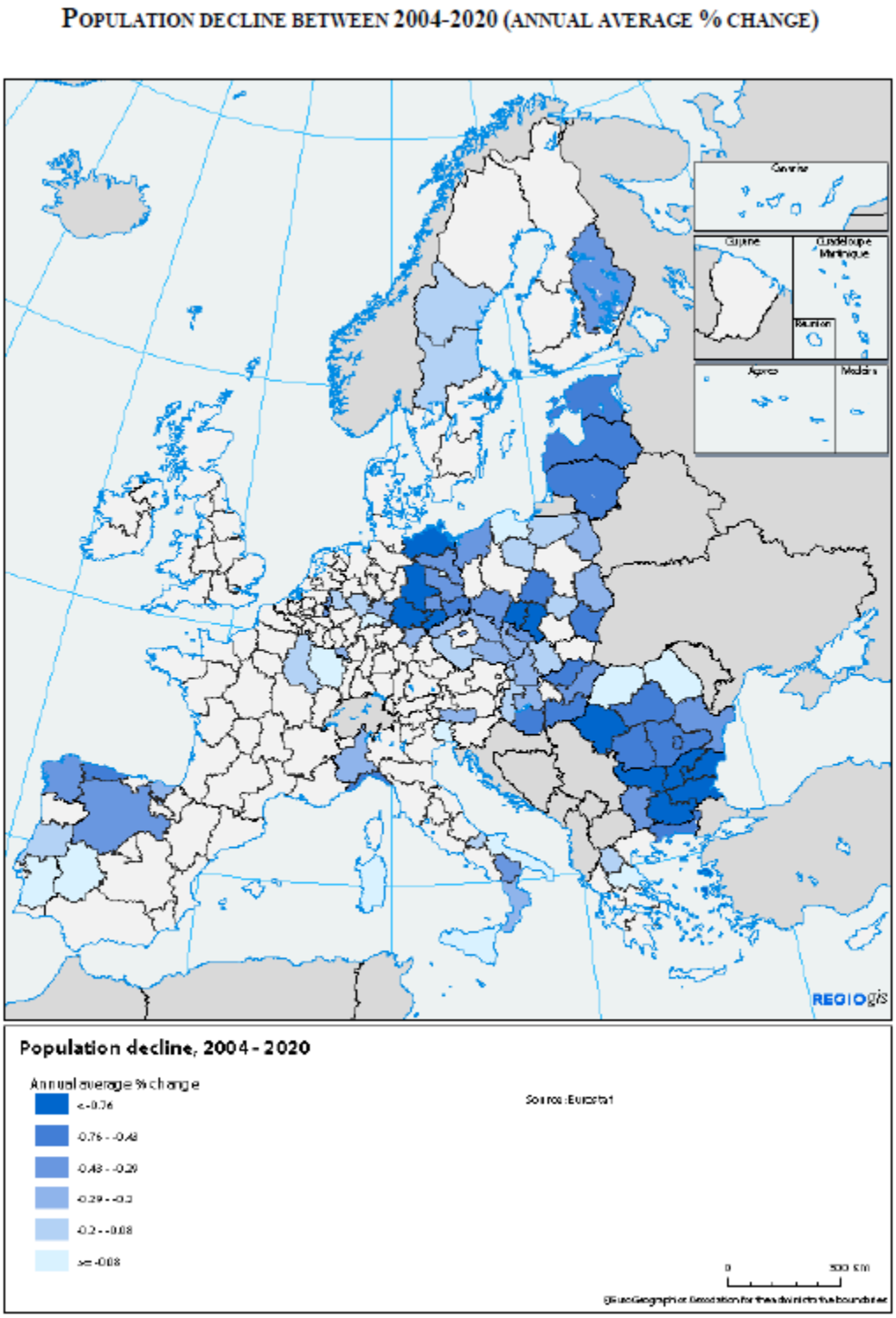
Map 2:

REGIONAL SHARE OF PEOPLE AGED 65 AND ABOVE IN 2020 (% OF TOTAL POPULATION)



Source: CEC, 2008, Annex 1, 1.3 Demographic Index Maps (based on data from Eurostat)

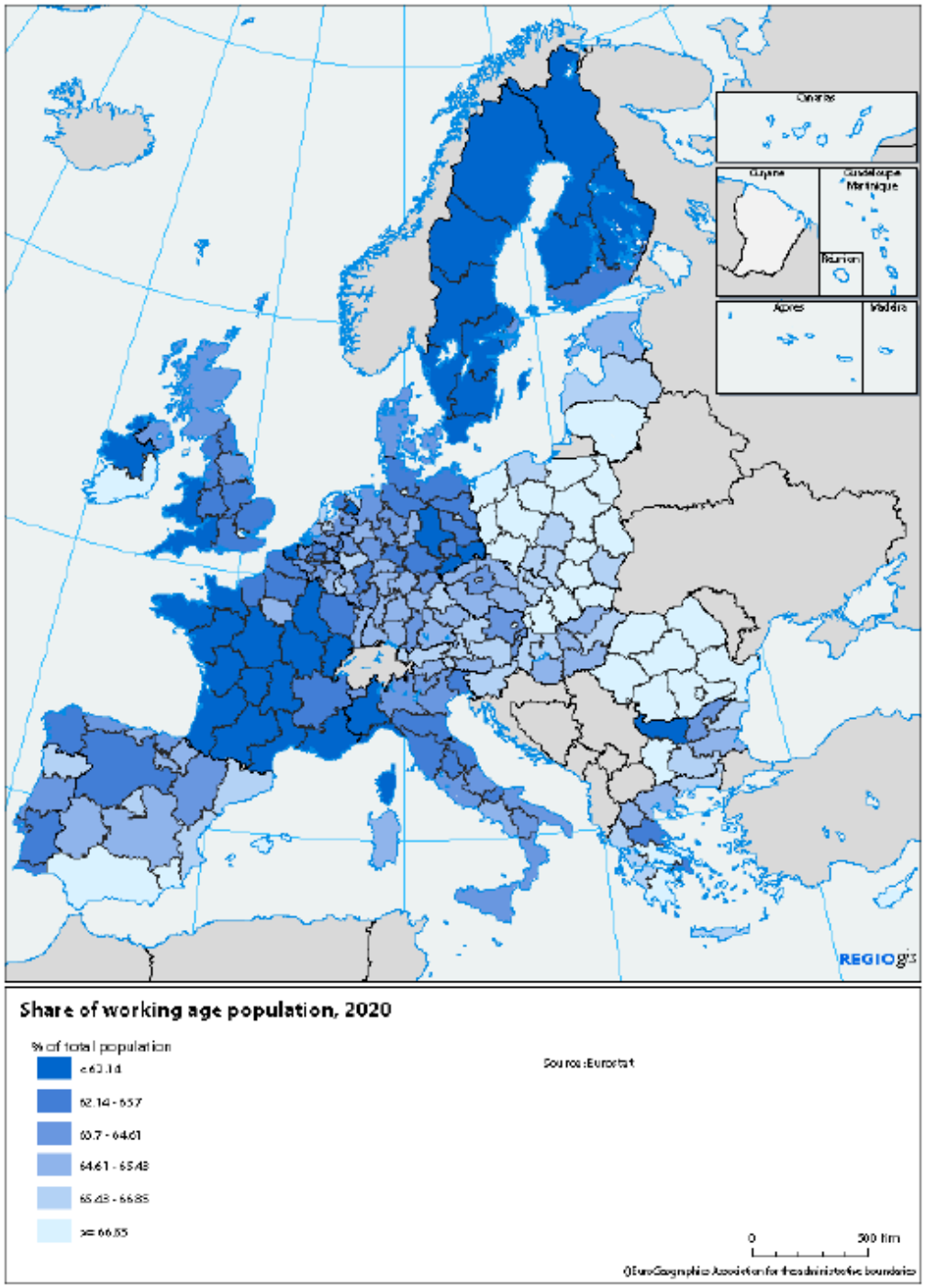
Map 3:



Source: CEC, 2008, Annex 1, 1.3 Demographic Index Maps (based on data from Eurostat)

Map 4:

REGIONAL SHARE OF WORKING AGE POPULATION IN 2020 (% OF TOTAL POPULATION)



Source: CEC, 2008, Annex 1, 1.3 Demographic Index Maps (based on data from Eurostat)

Appendix 2: EIP-AHA Reference Sites

https://webgate.ec.europa.eu/eipaha/index/site

• University Hospital Olomouc (Czech Republic)
• Region of southern Denmark (Denmark)
• City of Oulu (Finland)
https://webgate.ec.europa.eu/eipaha/static/Good%20Practices_Oulu.pdf
• Région Ile de France: Assistance Publique-Hôpitaux de Paris (France)
• Région Languedoc-Roussillon: Contre les Maladies Chroniques pour un Vieillissement Actif et en bonne santé en Languedoc Roussillon (France)
• Région Pays de la Loire: Centre D'Expertise National des Technologies de l'Information et de la Communication pour l'Autonomie (France)
• The Lower-Rhine Council (France)
• Saxon State Ministry for Social Affairs and Consumer Protection (Germany)
• Collaboration on Ageing (Ireland)
• Regione Liguria (Italy)
• Campania Health Care Authority (Italy)
• Regione Emilia Romagna: Agenzia Sanitaria e Sociale Regionale dell'Emilia-Romagna (Italy)
• Regione Friuli Venezia Giulia: Istituto Regionale Rittmeyer per i Ciechi (Italy)
• Regione Piemonte: Assessorato Regionale alla Tutela della Salute, Sanità, Edilizia Sanitaria, Politiche Sociali e per la Famiglia, Coordinamento Interassessorile per il Volontariato (Italy)
• University of Coimbra - Ageing@Coimbra (Portugal)
• Regional Ministry of Health and Social Welfare of Andalusia (Spain)
• Basque Country (Spain)
• TicSalut/InnohealthHub Catalunya (Spain)
• Galicia (Spain)
• Region de Madrid-Consejeria de Sanidad-Hospital Universitario de Getafe (Spain)
• Departamento de Salud Valencia-La Fe (Spain)
• Region Skåne (Sweden)
• Province of South Holland: Medical Delta (The Netherlands)
• Nijmegen: Health Valley (The Netherlands)
• Northern Netherlands Provinces Alliance (The Netherlands)
• Province of Noord-Brabant: Coöperatie Slimmer Leven 2020 U.A. Innovation network for Active and Healthy Ageing (The Netherlands)
• Region Twente: Municipality of Enschede (The Netherlands)
• The Ageing Well in Wales Programme (United Kingdom)
• Yorkshire and the Humber Digital Health Community (United Kingdom)
• Liverpool: Mersey Care NHS Trust on behalf of More Independent (Mi) partnership (United Kingdom)
• NHS24, Acting on behalf of the Scottish Government / NHSScotland (United Kingdom)
• Department of Health, Social Services and Public Safety, Northern Ireland (United Kingdom)