Final Report Summary - INNOVAGE (Social Innovations Promoting Active and Healthy Ageing)

Executive Summary:
AIMS
INNOVAGE was a 3 year project dedicated to social innovations which support active and healthy ageing. The project has developed and tested, as well as surveyed and catalogued, social innovation that will have a solid impact on improving the quality of life and well-being of older people. In particular the project has made a major contribution to the EU Horizon 2020 goal of extending healthy life years. The project’s objectives directly address the current major barriers to innovation and to the achievement of the extension of healthy life years across the EU. INNOVAGE has achieved impact in the public, private and third sectors and is built on the closest possible partnership with end users and stakeholders, including older people themselves.
The starting point for this ambitious collaborative project were the goals set by HORIZON 2020 concerning the demographic challenge facing Europe, the necessity of improving lifelong health and well-being for all and the promotion of social innovation, and also that of the EIPAHA to raise the average healthy life expectancy in Europe by 2 years by 2020.

ACHIEVEMENTS

Four SIs which have been being piloted as part of INNOVAGE and each have produced an evaluated and replicable intervention.

1) In Sweden, Lund University have built upon a scientific methodology based on the notion of person-environment fit to develop a Housing App, which is a tool making it possible for older people to understand and make predictions about housing accessibility in their present or future dwellings. It could also be used to understand how current housing stocks can be improved regarding accessibility to accommodate the ageing population of Europe.

1) Eurocarers (the European wide network for informal carers) and INCRA, Italy collaborated to develop, test and implement the InformCare web platform, which includes a package of internet-based support services for informal carers aiming at increasing accessibility to relevant information on caring. It has the potential to improve the health and wellbeing of both the cared for and especially carers in the long term.

2) A UK based partnership of University of Sheffield, Sheffield Hallam University and Newcastle University have produced iStep. It is a web based intergenerational social innovation which aims to bring people from different generations together to encourage culture change towards normalising exercise in everyday life, with the aim of reducing obesity and its complications which represent a well-documented risk to global health.

2) In Germany, Heidelberg University has completed the “Long-Term Care in Motion” (LTCMo) project. This created a social innovation to promote physical activity-related behaviour in a nursing home setting to reduce a decline in motor function and increase life-space use. Residents of long-term care are a long-neglected group and this is a non-pharmacological intervention with great potential.

The European Social Innovations for Healthy Life Expectancy webportal has been developed, representing a transformational approach to understanding and evaluating the impact of social innovations on health and well-being of older people. It includes:

1) An Innovations Database of 150 exemplars of social innovations which positively affect HLY and/or improve later life wellbeing have been evaluated and assessed

2) A system to evaluate the potential impact of any social innovation on HLY

3) Good practice for engagement of end users in social innovation development, especially older people.

These activities have been developed to stimulate a substantial step forward in the understanding and scaling of social innovations in this field; they represent the only work in this field so far.

Through our Stakeholder Forums the project has highlighted the areas where work still remains to be developed, thus identifying priorities for future research. The most pressing of these is effective evaluation of social innovation, which is required not only to evaluate social or health related impact but to inform effective policy and investment decision making.
Continued work in this field is likely to be particularly useful to support social innovation in the New Member States, where it has the potential to be a cost-effective way to transform services at a local and regional level. However these countries have more complex challenges stemming from historical and structural issues which require structured and specific investigation.

Project Context and Objectives:
The starting point for this ambitious collaborative project was the goals set by HORIZON 2020 concerning the demographic challenge facing Europe, the necessity of improving lifelong health and well-being for all and the promotion of social innovation, and also that of the European Innovation Partnership pilot initiative on Active and Healthy Ageing (EIPAHA) to raise the average healthy life expectancy in Europe by 2 years by 2020. INNOVAGE has been framed specifically to make a substantial contribution especially to this main goal of the EIPAHA.

There are five guiding principles behind INNOVAGE. First, a shared commitment to high quality science in the service of human welfare and well-being. This means science that is not for its own sake but applied to the improvement of human well-being, breaking new ground for a better life. Second, a conviction that research in the ageing field demands multidisciplinary and life-course perspectives. This is particularly the case where the focus is on Healthy Life Expectancy (HLE) because the multiple factors that determine it span many different disciplines as well as the whole of the life course. Third, in policy and practice terms, the knowledge that Europe is not at present maximising the use of its considerable resources in this field and, therefore, not improving well-being and quality of life (QoL) in old age as rapidly as it could do if a more concerted approach were taken. Fourth, the need to develop and disseminate a new vision of ageing in Europe, a new paradigm which emphasises the positive potential of older people rather than, as is common in all countries and across the media, the individual and societal deficits. Fifth, a belief that the great potential for social innovation in this field has not been exploited sufficiently, both in terms of the ability to assess their relative impact and, therefore, to spread more widely the most effective ones. In particular we are convinced on the basis of research evidence, that there is considerable scope for innovations that use the latest Information and Communication Technologies (ICTs) including interactive and hand held devices.

These ideas are shared by the team making and have long been held by us individually, as highly experienced researchers and social innovators and jointly through our previous collaborations. They have also found recent expression in both the HORIZON 2020 Programme and in the EIPAHA. Therefore INNOVAGE very precisely reflects the ambitions of HORIZON 2020 and the EIPAHA. INNOVAGE also answers the specific aims of the original Call by developing and implementing social innovations intended to improve well-being, quality of life and healthy life years (HLE), constructing a new paradigm of healthy and active ageing (hereafter active ageing) and engaging with a wide range of stakeholders. INNOVAGE has set out to make a lasting impact on these key issues by providing the basis for measuring effectiveness of social innovations, to identify the best targets for scaling and spreading and the methodology to compare their impact on HLE. INNOVAGE was dedicated to impact in the public, private and third sectors and driven by a group with a proven track record in achieving it.

The evidence on demographic ageing in Europe and the continents’ leading global position in this factor are too well known to repeat here. The same is true with regard to the linear progress of longevity and its
role in driving wider policy concerns about ageing Europe. Our detailed assessment of the state-of-the-art in this field identified four key areas where there are barriers to progress on extending HLE (and with it quality of life and wellbeing in old age) and the development of successful and lasting social innovations. These barriers stand in the way of the EIPAHA in achieving its aim of extending HLY by an average of two years by 2020 and, therefore, are a priority to be tackled by INNOVAGE:

- Improvement of HLE and wellbeing
- Development of social innovations
- Active ageing
- User or stakeholder engagement

The mission of INNOVAGE was to concentrate the highest possible quality of scientific expertise, together with stakeholders from all relevant fields (policy, practice, product development) and the active participation of older people, to produce and identify major innovative approaches to better quality of life and well-being as people age.

INNOVAGE had four specific objectives:

1. The development, implementation and evaluation of four potentially cost-effective social innovations focused on social innovation, well-being and quality of life, and HLE. Four social innovations (SIs) and data concerning their impact and effectiveness were the main target outputs. The four innovations focused on: housing and independent living; ICT and social supports for carers of older people; tackling obesity; and improving the well-being of older people living in long-term care settings (i.e. a group that has been rather neglected by social innovations designed to improve well-being). Each innovation was developed, implemented and evaluated by its own expert team, and cross-fertilised by INNOVAGE team meetings, project Stakeholder Forums and continuous knowledge interchange across activities.

2. The creation of a brand new social innovation web-based platform, consisting of model, state-of-the-art, innovations from anywhere in the world that have been evaluated to have real potential to contribute to extending HLE. The search for these exemplars entail a very comprehensive global survey for well-being in old age and HLE. Only those with a proven track record or really obvious potential have been entered on the European Social Innovations for Healthy and Active Life Expectancy portal - the first of its kind. Its emphasis is practical: what works with regard to HLE, their durability and acceptability. It has built on methods developed as part of the Joint Action EHLEIS. The new platform features a purpose built taxonomy of social innovations in the HLE field.

3. The tackling head-on of the critical barriers to the implementation of social innovations in this field by drawing on state-of-the-art research and experience in SI development and by adopting a novel approach based on the exploitation of recent technologies for addressing users’ needs in an optimal way. Nowadays, like never before, it is possible to take cost-effective innovations developed within societies and apply them to social purposes in order to strengthen the quality of services for end users and to guarantee the sustainability of the overall care and support systems. We have pursued a range of novel approaches, including good practice guides, interactive web-based tools, social web media, insights form older users and our research and stakeholder activities. The core of this objective was communication, to overcome well-known barriers to implementation and to contribute to the aim of translating social innovations into
accepted practice.

4. An emphasis on knowledge exchanges to and implementation especially in the New Member states (NMS). This objective recognised the very unequal experience of HLE across Europe and sought to prioritise the NMS and especially those in Central and Eastern Europe. The core of this objective is the need to reach into the NMS directly to understand the unique elements affecting social innovations for HLE. The application of social innovations in Europe has a lot of disparities that cannot be easily addressed only at the macro-level. INNOVAGE has identified social innovation interventions that aim to be easily replicated and transferred in other contexts by means of an international cooperation among relevant stakeholders in the field: the involvement of different kinds of actors from a wide range of European countries has been a necessary condition for assuring a broader perspective on social innovation development.

Work took place over three years involving nine partners to meet these objectives. Full information of our activities and accomplishments can be found on the project website: http://innovage.group.shef.ac.uk/

Project Results:

WP1 INCREASING HEALTHY LIFE EXPECTANCY
This work package focused on the potential of social innovations to support Healthy Life Years (HLY). Its aims were to gather evidence on successful implementation of social innovation on HLY and undertake a survey of prime examples of social innovation in health and wellbeing of older people, to create a taxonomy of social innovations in this field.

*Defining and conceptualising social innovation and active and healthy ageing*
Early work focused on understanding social innovation – a term with a wide range of interpretations – and the linkages between specific social innovation and active and healthy ageing. This established that research on social innovation and active ageing is still in a developmental stage even in relation to extending working lives which has received considerable attention from policy makers. Work in the field of social innovations to increase healthy life years and quality of life is in an even earlier stage of development but the need to identify examples of good practice and potential promise is similarly urgent.

Building on the WHO European Region Office’s comprehensive conceptualisation of active and healthy ageing informed INNOVAGE’s approach to grading social innovations. They operate across a wide range of activities, invariably involve a preventive approach, include all older people and emphasise inter-generational solidarity. Social innovations encourage activity, have a focus on equity, are likely to need a gender perspective and are part of a wider policy context that should involve health in all policies. They should be participative and empowering while respecting national and cultural diversity across and within nation states around Europe and the world while offering sustainability and value for money. Social innovations had to embrace several of these principles in order to be included in the survey.

*Collecting and grading social innovations using a balanced scorecard approach*
Social innovations were systematically gathered from a wide variety of sources including extensive internet searches, particularly of social innovation hubs and incubators as well as government websites.
All of the social innovations were included for consideration if they had reached sufficient maturity to show some clear relevance to increasing healthy life years and contained indications of real innovation rather than standard service provision. They also had to have a robust basis in terms of potential impact, which invariably involved stakeholder support from civil society and the public and private sectors, and to have some evidence across the four criteria of the balanced scorecard. Due to the lack of high quality outcome evaluations of social innovations, assessment of impact on active and healthy ageing focused on largely experiential knowledge, from practitioners and people who are engaged with the project, which can be linked to a theoretically plausible linkage with factor affecting health and wellbeing in old age. For example, social activity theory contends that older people’s health and wellbeing is maintained and improved by social participation in leisure and physical activities and role replacement when an established role must be relinquished. A review of 42 studies found that despite differences in definition and measurement there were methodologically rigorous studies that found positive associations between activity and wellbeing. However, it is difficult to determine the direction of causality between activity and health – are older people more likely to be healthy because of the activities they participate in or are they more active due to the good health they enjoy? There are likely to be multiple and complex pathways between activity and health that are difficult to untangle. Therefore, even though we do not completely understand the causal mechanisms if a social innovation promotes social activity, participation and interaction that reduces social isolation and loneliness then it is likely to be beneficial to people’s health and wellbeing.

Eight domains were identified for use in the Innovations Database which identified the key area of effect of each social innovation, from a social determinants of health perspective. They are: promoting physical activity among older people; improving access and provision of health or social care; the prevention and management of long-term health conditions; reducing social isolation and preventing loneliness; providing social support and building social cohesion; using Information and Communication Technology to connect; promoting lifelong learning, skills and paid employment, and; inter-generational activity promoting solidarity.

The process of assessing social innovations has focused on four balanced scorecard criteria: social and economic impact; sustainability; tolerance, and; implementation. Each innovation was scored on the four criteria using a 5 point scale (where 1 is weakest and 5 is best) to produce an indicative score out of 20. These preliminary scores were then subjected to rigorous peer review by an international panel. All social innovations needed to score at least 12 to achieve exemplar status. Over 150 exemplar innovations were passed by the panel, and added to the online Innovations Database (www.innovage.group.shef.ac.uk/innovation-database.html)

*Developing a typology to link HLY and social innovations*

Using disability as the underlying measure for HLY reflects the importance of restriction in daily activities in well-being and in maintaining social participation and independent living. Nevertheless other health expectancies can also be calculated across all EU countries, these being based mainly on self-rated health and chronic morbidity.

So how might a social innovation increase HLY? Two specific examples of social innovation are given in the Europe 2020 plan: coronary heart disease prevention schemes which target the whole community rather than just ‘at risk’ individuals; and social networks of helpful neighbours for old people living on their
Coronary heart disease is known to impact on both mortality and disability and the effect on disability-free life expectancy of elimination of coronary heart disease has been estimated. In terms of the second example however, the pathway of how increasing the social network of older people through helpful neighbours might increase HLY is less obvious. There may be an effect on reducing mortality though this is likely to be small. On the other hand there are established links between loneliness, depression and both self-rated health and disability. The second example highlights the problem that evaluations of social innovations may well not include activity restriction/disability as an outcome because it is felt that the intervention will impact on other outcomes. We can therefore separate evaluations of social innovations into three broad types:

A. Outcome is activity restriction/ADL/IADL/disability measure – the impact on HLY of innovations with this outcome can be estimated directly for all countries;
B. Outcome is self-rated health (SRH) or chronic morbidity/disease - the impact on HLY of innovations with these outcome can be estimated indirectly for all countries by relating how an improvement in these outcomes translates into an improvement in HLY using EU-SLIC data;
C. Outcome is none of the above health measures – to assess the impact on HLY of innovations with these outcomes a typology of outcomes needs to be developed and then suitable data sought to crosswalk between the outcome and HLY. Potential studies include EU-SILC, the Survey of Health, Ageing and Retirement in Europe (SHARE) and the European Health Interview Survey (EHIS). It is unlikely that this can be done for all countries in the same way.

Given that social innovations may impact on health and wellbeing, and therefore healthy life years, through a variety of means, it may be that evaluations of their impact are more ‘process evaluations’. Thus, rather than the immediate health and wellbeing measures considered in the three types above, we might identify a fourth group where the outcome is a proximal measure of health and wellbeing, for example lifestyles (weight loss, level of physical activity) or vulnerability (loneliness). Evaluations of this type cannot be assessed in terms of their impact on HLY.

We therefore examined evaluations of the exemplar social innovations and further graded them according to one of five types:

A. Outcome is activity restriction/ADL/IADL/disability measure – optimal assessment of impact on HLY;
B. Outcome is self-rated health (SRH) or chronic morbidity/disease – indirect assessment of impact on HLY (all countries);
C. Outcome is none of the above health measures – development of typology of outcomes then indirect assessment of impact on HLY (limited countries);
D. Outcome is proximal measure of health – no assessment of impact on HLY possible.
E. No evaluation of the social innovation could be found

Mortality may or may not be a separate outcome. However innovations that reduce mortality only and have no significant impact on quality of life will not increase HLY and, indeed, are likely to result in a decrease in HLY. In addition the evaluations were reviewed for information on:

1. By how much the social innovation will change the outcome.
2. Whether the social innovation will also reduce mortality and by how much.

A description of the subgroup targeted by the social innovation (for example a specific age group, older people living alone
To ensure that the social innovation can be rolled out wider, it is imperative that some form of evaluation of the innovation has been made. In many cases the usual optimal design for evaluating the efficacy of an intervention, the randomised controlled trial, will not be possible. In addition if we are to be able to assess social innovations on their relative ability to increase healthy life years, ideally efficacy should be measured in terms of health, rather than any proximal or process measures.

Each of the 150+ exemplar social innovations were subjected to more rigorous assessment of their evaluations in terms of the appropriateness of the outcome for translation to healthy life years using the four categories (A-E) described in the previous section. The majority of the 157 social innovations examined (this included a few which were ultimately not included in the database) had no formal evaluation and were graded E (69%, n=108) whilst a further 22% (n=34) had only proximal health and wellbeing measures as outcomes and were graded D. It was therefore impossible to assess the impact on HLY for these social innovations, which together formed 90% (n=142) of all the exemplar social innovations, and therefore rank them as to their effectiveness towards the EIPAHA target. Of the remaining 10% (n=15) only two had used a disability measure as the outcome of an evaluation, a further two had used self-rated health and the rest had used other health measures which are not available for all EU27 countries.

*Quantifying the effect of social innovations on healthy life years

To quantify the effect that a social innovation might have on healthy life years a ‘Healthy Life Years Modeller’ was developed in Microsoft Excel. The HLY Modeller allows users to explore and quantify the potential impact of a social innovation on population health. The user inputs to what extent an innovation reduces the prevalence of activity limitation and mortality for any or all of 16 age groups. The tool then outputs visually and numerically a number of quantities: life expectancy, healthy life years and unhealthy life years at key ages (birth, age 50, 65 and 75), as well as the potential changes in these quantities as a result of the social innovation. The underlying base population of healthy life years and mortality in the HLY Modeller are men in the EU27 countries in 2010 (JAEHLEIS 2015).

The HLY Modeller not only allows users to explore the effect that an innovation might have on healthy and overall life expectancy, but is also useful to further understanding of how changes in mortality and activity limitation impact on both life expectancy and health expectancy.

The HLY Modeller is easy to use if a social innovation has been formally evaluated using an outcome of activity limitation or one that can be mapped onto activity limitation. Currently the base population (HLY and mortality) in the HLY Modeller are men in the EU27 countries in 2010 sourced from the European Health and Life Expectancy Information System (JAEHLEIS 2015). The Monitoring or Assessment Framework for the European Innovative Partnership on Active and Healthy Aging (MAFEIP) is also developing a modeller to quantify the effect of social innovations. This model, based on a three state Markov model and a decision tree, uses QALYs rather than HLYs (Boehler and Abadie, 2015). The addition of the decision tree allows estimation of the potential effect of outcomes which are proximal measures, particularly those such as physical activity and obesity. However this model has considerably more assumptions than the HLY modeller.
The HLY Modeller is available for use online here:
http://www.innovage.group.shef.ac.uk/hly-modeller.html

*Barriers to social innovation*
The broad issues affecting the success of a social innovation – and thus also the potential barriers to success – are articulated in the four criteria used in the balanced score card. More detailed and specific feedback on these issues was gathered during the annual INNOVAGE Stakeholder Forums, which are summarised in three areas.
- Establishment and engagement: with stakeholders and users (especially minors, or those with reduced mental capacity)
- ICT-based social innovations: lack of digital literacy; security and trust issues, and; costs of both acquisition and service.
- Scaling and diffusion innovations: the heterogeneity within and between EU countries; the risks of highly localised initiatives reaching the economies of scale to generate a sustainable business plan, and; developing an evidence base of efficacy

*Challenges in the New Member States*
The New Member States (NMS) of the EU generally face more complex challenges than other EU members owing to historical and structural issues. The social innovation process has become increasingly attractive in the NMS as it is perceived to have the potential to bring profound change without requiring the scale of transformational and institutional changes experienced in the last 20 years. Social innovation is seen to be non-disruptive, gradual, flexible and supporting the green/environmental agenda. Moreover it can generate synergy with previous changes and fits easily into well-established innovation ecosystems.
The establishment of the EU Programme for Employment and Social Innovation (EaSI) in 2014 demonstrates the strong support for social innovation. However, in common with the rest of the EU, the key question is whether the social innovation process can deliver larger institutional change and have a sustainable stabilising impact on ageing studies.

The social innovation process has the potential to act as a trial laboratory in the EU-13 countries which can develop new and innovative initiatives to help tackle the rapidly developing challenges to care and healthcare systems and foster gradual change in relevant social policies. There is a large pool of successful social innovations to draw from, but these cannot simply be lifted up from one location and immediately implemented in the NMS. Scaling should combine evidence and experience from an existing social innovation with feasibility testing in the new location, and with the strongest possible focus on users – in the case the needs of ageing population. A new NMS-driven approach to social innovation is needed to tackle these issues, and to build social capital as a secondary output, for example through ageing cafes, discussion circles for older people, support for informal carers, digital skills training.

Public bodies in the EU-13 countries tend to experience high levels of personnel change which can hinder the social innovation process, as a ‘champion’ is often required at a local level to maintain momentum. The engagement of policy makers/politicians is essential for social innovation, as funding is always an issue (a problem common for social innovation across all EU). The role of third sector organisations and other volunteer networks will depend on the specific structure and shape of health and care services in a country. The involvement of both users and professionals is critical to success, and ideally social
innovation should be both top-down and bottom-up. Research needs to be connected to practice, to ensure that social innovations are evidence-based and have proof of efficacy. This enables public expenditure on both research and practice to be maximised.

The use of social innovations utilising mass and social media should also be embraced, as it has the potential to reach relatively large numbers of people quickly and in a cost effective way. Naturally the geographic reach of any online resource is limited by its language. However, this approach is limited by the connectivity infrastructure and digital skills, which is often severely limited among sparse rural populations in NMS. Indeed some of the biggest challenges in these areas may be related to maintaining provision to basic services – such as banking and government services – as these are moved online.

ICT initiatives should also be supported by the use of digital skills training, and there are a number of successful existing social innovations in this field – including those with a strong emphasis on intergenerational contact – which could be applied. Those countries which have access to EU Structural Funds may also be able to use these resources to prioritise investment to support social innovation initiatives, which could include digital infrastructure.

Sometimes social innovations which are so well established in Western EU countries that they are no longer regarded as an innovation, can be of an innovative nature for NMS. An example is social entrepreneurship which has a well-established institutional basis in Western Europe, and a broad spectrum of practical working forms. In NMS the formation of an institutional framework for social entrepreneurship and transformation of informal modalities into sustainable forms is an ongoing process, with increased urgency and attention as a consequence of the recent financial crisis.

Recommendations for success:
In summary, to fully exploit the potential of social innovation in the NMS, a range of factors should be in place:

• Advanced and expert training for teams undertaking social innovations; specialised training should be sought if required.
• User involvement in all relevant processes at all stages, as this is the key to success. In particular meaningful communication to users to ensure they understand what the social innovation is, what the value might be to them and how they can engage with it.
• Clear institutional ownership of processes from the very start with shared responsibilities and overlapping roles to provide extra knowledge and capacity to reduce the impact of frequent changes in personnel.
• Development of a technical platform to support social innovation and innovators in the NMS at all stages
• Use of alternative funding sources to maintain sustainability; use of wider EU funds to support
• Finally, better knowledge transfer and exchange between social innovators is needed. There are a range of existing resources which can be exploited for good practice but there is a gap in provision. It is recommended that the INNOVAGE Innovations Database is expanded with implementation reports and blogs to address some of these challenges.

WP2 USER-DRIVEN HOUSING FOR OLDER PEOPLE
This WP developed a social innovation to map housing accessibility and match it to residents’ needs. In four countries in the EU this innovation explored how older people across Europe express their housing
needs and expectations and also undertook a housing rating exercise to map accessibility within the housing stock.

Data on environmental barriers were collected in 400+ apartments in Sweden and Latvia, purposefully selected to represent a wide range of building types with different standard and design. Housing company employees were trained to conduct reliable data collection. To generate knowledge on how senior citizens express their own needs and expectations regarding housing options, research circles were conducted in four countries: Sweden, Germany, Italy and Latvia. Each research circle consisted of 12-15 participants and formulated user requirements for an ICT tool, including priority levels. A synthesized User Requirement Specification (URS) was prepared based on the research circle results, retaining requirements that were common, highly prioritized, technically feasible to achieve and within the scope of WP2. Based on the scientifically established Housing Enabler methodology and guided by the URS, an Android App (in English, Swedish and Latvian) was developed. The app was tested for usability by three test panels, with a total of 30 participants aged 65 years or older in Sweden and Latvia. The usability tests involved individual test sessions, using a think-aloud test protocol and standardized questionnaires. Group forums were also arranged. The usability test results served to improve and fine-tune the App, now available as a refined prototype.

The long term goal of WP2 is to actively involve senior citizens in housing provision as critical consumers and ultimately to influence housing policies and provision practices across Europe. The operative aim was to develop, demonstrate and evaluate a prototype of a novel computerized tool that will support senior citizens to compare and evaluate housing options with regard to accessibility issues. A main result of WP2 was the realisation of this operative aim, in the form of an Android App optimized for use on 10” surf tablets: the innovAge Housing App (hereafter referred to as the App).

The scope of the App is to help and guide the user to find housing solutions with the best possible accessibility. The methodological platform for the App is the Housing Enabler, a scientifically established methodology for assessment and analysis of housing accessibility problems. At first time use of the App 14 questions about functional abilities have to be answered. The responses can either reflect the current situation for the user or be a projection of a possible future situation. The answers about functional abilities then influence the results of the two main functions of the App: 1) to list potential environmental barriers in the current dwelling; 2) to search for a new apartment with the best possible accessibility, that is, the best match between the functional abilities of the user and the presence/absence of environmental barriers in the apartment. The two functions are broadly applicable to two situations: 1) the user wants to remain in his/her current dwelling and wants information on which environmental barrier need to be addressed in order to improve or maintain housing accessibility; 2) the user intends to move and is searching for a new apartment that meets his/her needs and requirements in terms of accessibility.

In order for the App to have a database with housing options to access, data on environmental barriers were collected in 400+ apartments in three municipalities in Sweden and one in Latvia, purposefully selected to represent a wide range of building types with different standard and design. Housing company employees were trained to conduct reliable data collection, using the Housing Enabler methodology. In follow-up interviews one year after training and data collection the housing company employees maintained that the Housing Enabler methodology was a valuable tool in their professional work. Their
experiences and evaluation of the training course was recorded and documented in order to improve the training format for future endeavours.

In the development process of the App, senior citizens in Sweden, Germany, Latvia and Italy were closely engaged as the targeted users. Public stakeholders involved in housing construction and housing provision also had an active role in the process. In order to generate knowledge on how senior citizens express their own needs and expectations regarding housing options, research circles were conducted. What is characteristic of this method is that the researchers and participants collectively develop new knowledge and learn together. That is, the research circle method made it possible for us to collaborate with the intended users, creating a forum where new insights were reached jointly. Each research circle had 12-15 participants who met four times at monthly intervals. Thematic analysis of the data from the research circles revealed three themes illustrating cross-national user priorities for housing provision and accessibility: “Information barrier: accessible housing”, “Information barrier: housing adaptation benefits”, and “Cost barrier: housing adaptations”. Based on these main results of the research circles, a co-authored manuscript entitled “Cross-National User Priorities for Housing Provision and Accessibility — Findings from the European innovAge Project” was published in the International Journal of Environmental Research and Public Health (March, 2015). In addition, researchers responsible for WP2 wrote a report on research with and about user participation that included findings from the innovAge research circles. The report was published by the Swedish Research Council for Health, Working Life and Welfare in 2015. It was published in both Swedish and English and can be downloaded in pdf-format at http://forte.se/en/wp-content/uploads/sites/2/2015/11/rb-userparticipation.pdf.

The research circles in each country also produced a list of user requirements for the App, prioritizing the specific requirements based on the level of importance to them. These requirements concerned content, functionalities and design and layout of the interface. Based on the national lists of user requirements, a synthesized User Requirement Specification (URS) was prepared, retaining requirements that were common, highly prioritized, technically feasible to achieve and within the scope of WP2. The URS included the following core set of minimum requirements:

• The App should detect, evaluate, and provide information on potential housing accessibility problems in the current dwelling or in dwellings available to move residence. The accessibility problems should be based on the individual functional limitations and use of mobility devices of the person using the App. This so-called functional profile can reflect the present or projected future functional status of the individual.
• The App should suggest or recommend possible actions to address the potential accessibility problems, for example, which environmental barriers are most important to remove, whom to contact for counselling and action, which dwellings of several available would provide the most optimal match between the individual’s functional abilities and the barriers in the dwelling.
• The interface of the App tool should be easy to understand and use, simple in graphical design, and possible to use for people with sensory or motor disabilities.

Subsequently, a first version of the App was developed, based on the Housing Enabler methodology and guided by the research circle generated URS. The URS also constitutes a main result of WP2, and was reported in a conference paper for the IAGG-ER 8th Congress, in Dublin, April 2015. A software professional was employed by ULUND in order to develop the App and give it a usable and attractive
interface. During the process of software development, there was a close collaboration between the software professional and the rest of the ULUND team; there were frequent and regular meetings where different and alternative functional and design solutions were thoroughly discussed and reviewed.

To evaluate the App for use by the targeted end users and to provide vital input for the further development and design process, usability tests were conducted in Sweden and Latvia with successive user panels. The user panels comprised in total 30 people 65 years or older. A combination of individual usability tests in the homes of the participants and follow up group fora were carried out. In the individual usability tests think aloud protocols, observations, questionnaires, rating forms and the Software Usability Scale (SUS) were used. The usability test moderators took field notes and all test sessions were audio and video recorded.

Analysis of usability test data showed that the App was considered to be useful in terms of raising the awareness of appropriate housing solutions and supporting decision making with regard to housing accessibility issues. The participants appreciated to evaluate their functional capacity in a structured way and to learn about possible environmental barriers and opportunities for finding housing solutions. The App was also appreciated because it was considered to be easy and fun to use. By comparing data collected in Sweden with data collected in Latvia – one of the new EU member states – some significant findings were also revealed. Though overall satisfaction was good both among Swedish and Latvian test participants, it appeared to be higher among the Swedish participants. Latvian participants also requested more technical support, more help and more explanations in order to understand how to use the App. This may partly be due to a higher previous familiarity with touch screens among Swedish participants. Differences in opinion among the participants elucidated that the national differences in housing situation between Sweden and Latvia influenced the perceived benefits of the App. The Swedish participants perceived the possibility to search for a new apartment as the major benefit of the App. The Latvian participants on the other hand found the function which provided them with a list for review of possible barriers in their current dwelling the most useful, as relocation was not considered a realistic option for them. A manuscript based on cross-national comparisons of the findings from the usability tests in Sweden and Latvia is currently in good progress and is planned to be submitted to the Journal of Usability Studies in early 2016.

With regard to the development process of the App, analysis of usability test data generated a list of perceived usability issues, and also specific and concrete advices on how to improve functionality and design of the App, which served as a basis for the solutions and further improvements of the second and third versions of the App. The iterative development and design process thereby resulted in a well-accepted App that is perceived to be awareness-raising and support decision-making about housing accessibility issues among senior citizens. Key results of the usability tests with a focus on design and user involvement perspectives were reported in a conference paper for the annual conference of the Gerontological Society of America (GSA) in Orlando, Florida, 2015. This conference paper will be expanded and elaborated on for scientific journal publication during 2016. App interface design preferences that emerged during the App development process and the recognised need to integrate the App in an ICT infrastructure in order to be useful were reported in the article “Combining apps targeting professionals and senior citizens to improve housing accessibility and influence housing provision policies”, published in Studies in Health Technology and Informatics (August 2015).
WP3 ICT-BASED SOCIAL SUPPORT FOR CARERS OF OLDER PEOPLE

This WP aimed to develop, test and implement the InformCare web platform, which includes a package of internet-based support services for informal carers of older people. The aim was to increase their accessibility to relevant information on caring and the possibility to get both peer and professional on-line support. Informal carers can indeed benefit from this social innovation, which addresses their information, self-awareness and support needs, and can have a positive impact on their quality of life during the life course. It also included, within WP6, wide dissemination of the platform at international and national levels. The platform is now available in 32 versions for 27 member states of the European Union (EU-27) in 23 languages: this result guarantees carers all over Europe to access to a minimum set of information (in the EU-27) and support tools (in selected countries) in their native language through the Eurocarers website (www.eurocarers.org/informcare).

InformCare was developed by the Italian National Institute of Health and Science on Ageing (INRCA) and Eurocarers, in collaboration with a wide network of non-profit organisations and stakeholders across the EU-27. Informal carers of older people in need have to face many different issues in their role, like health problems (e.g. stress, anxiety, depression), social isolation, financial burden, and difficulties to conciliate their personal life (including family and work) with caring activities.

The InformCare platform allows carers in EU-27 to access to a minimum set of information and support tools in their native language through the Eurocarers website (www.eurocarers.org). Furthermore, the issue of informal care was addressed also by perspectives of care professionals (e.g. physicians, psychologists, social workers etc.) dealing with informal carers and employers of working carers (e.g. owners and executive officers of organisations), with the aim to raise awareness on the topic among these two target groups and suggest strategies for a better collaboration with benefits for all parties involved.

The web platform developed includes both information resources and interactive services areas. In the first one (available for the EU-27 in 32 versions), users could read and access relevant information on several topics of interest, like descriptions of most common impairments in older age, indications of what public care services are available in the national territory, suggestions for coping strategies and care management, explanation of financial and legal issues connected to the older person’s status, and list of useful contacts and associations for getting further help. In the second one (available depending on capacity of each national organisation), users could interact with other carers in similar situation via different communication tools, like a dedicated social network, forum, private messages, chat and video-chat. Where interactive services are available, a moderator from an appointed national organisation will manage them and stimulate discussion and contact between registered users.

Overall, the INNOVAGE WP3 involved almost 200 among end-users and experts, and 32 stakeholders (user organisations, research centres or individuals), during its activity. The Italian National Institute of Health and Science on Ageing (INRCA) and Eurocarers were the main partners in charge of achieving this enterprise which was based on a continuous consultation with users, experts and stakeholders in the field, assuring indeed the final outputs would be helpful for informal carers (primary target group), care professionals and employers (secondary target groups).

*Development*
A pilot study was conducted with the goal of investigating usefulness, adequateness and impact of the web platform. Patterns of usage (and non-usage) of the platform were analysed with a consistent sample of users. The pilot test was designed as a one-group pretest-posttest study, aiming to make assessments both at baseline (T0) and at end (T1) of intervention, which lasted 3 months in the period April-August 2014. The web platform was piloted in three countries, i.e. Italy, Germany and Sweden. Each country tested all contents and services for informal carers, with slight differences. In Italy, an e-learning module was added to the platform, retrieved from an ongoing educational programme by the Italian non-profit organisation Anziani e Non Solo. In Sweden, the role of forum was emphasised with appropriate writing tasks assigned by moderator. In Germany, the role of video-chat was stressed by proposing a structured series of weekly group sessions were users could discuss and talk together, with the support of the moderator.

Recruitment process adopted a convenience sample approach, also using snowballing approach where needed. Overall, 123 informal carers of older people (60+ years old) were involved in the study for the whole period and were given the chance to use the web platform. Among them, we counted only 5 drop-outs (mainly because they did not feel to have time to follow the platform anymore or the older person died during the intervention).

The moderator of interactive services in each country was a professional (a psychologist in Italy; social workers in Germany and Sweden). Appropriate guidelines were developed for moderators on how to implement and manage interactive services and users, on the basis of guidelines and recommendations provided by high-level professional organisations in the health and social care sectors on on-line services.

Users attended, where possible, presentations of the web platform made by moderators in face-to-face meetings or at distance (video-communication interaction). They were provided a specific guide (both in copy and electronic format) explaining how to use the platform.

The study was conducted through a mix-methods approach. Quantitative measures concerned dimensions of the cared-for older person (e.g. demographics, dependency, health status) and of the informal carer (e.g. demographics, health status, quality of life, self-perception of carer's role, perceived social support), as well as characteristics of the web platform (e.g. usability, usefulness, appropriateness, navigation patterns). These data were retrieved mainly through structured, standardised questionnaires.

Qualitative measures included specific open-ended questions and focus groups in each country conducted at the end of the intervention with users (7 in Italy, 6 both in Germany and Sweden) with common guidelines.

An Expert Meeting was organised in Brussels after the intervention (October 28-29, 2014) with 5 external experts in the field in order to evaluate results from the pilot test and suggest further improvements of the platform.

*Findings*
Generally speaking, findings from the study indicated that the InformCare platform was well accepted by users, who reported benefits from the exchange with other carers and professional staff – psychologists or
social workers – made possible by interactive services offered. Users felt empowered because they became able to become more self-aware on their own situation, they could receive helpful advice from peers and moderators, and they could share own experiences and feelings with other people in similar situations. Indeed, quality of life of informal carers is positively influenced by this social innovation, which could indirectly contribute to better health status and an extension of their healthy life expectancy.

Some issues to be taken into account for the implementation emerged as well, including: the low level of digital skills of many informal carers; need for stimulation strategies for improving the active usage of web services; need for making carers more self-aware, especially in contexts where they have low or no social and cultural recognition.

Feedback collected from users gave the possibility to further refine the platform for the implementation process in the EU-27, which involved at least one non-profit or public organisation per country, engaged in developing tailored contents in the information resources area and, if possible, the implementation of interactive services even beyond project lifetime.

*Implementation*
The InformCare social innovation was implemented in the EU-27 during INNOVAGE project lifetime: it is now publicly available (www.eurocarers.org/informcare) with over 2,500 web pages for carers and 300 for care professionals and employers. For achieving this ambitious goal, there was need to establish a wide network of stakeholders active at national level in the field of support and advocacy of informal carers under the umbrella of Eurocarers coordination. Eurocarers took over the responsibility of the platform, involving member organisations and other stakeholders in the development of national contents for the platform, the final implementation and related dissemination at national level. Further steps for implementation includes a wide discussion within the established network for agreeing on a sustainability plan for InformCare, in order to assure it continues supporting carers in Europe well beyond INNOVAGE project lifetime.

*Dissemination*
A tremendous amount of work was done in order to carry out also a wide dissemination of the web platform in the EU-27 during months 29-36 (April-November 2015) (planned in task 3 of WP6). The core dissemination phase of the InformCare web platform concerned European and national events in the EU-27. Three activities were carried out according to a “multiplier” approach, involving representatives of each target user group at different levels. An European event was organized by Eurocarers and INRCA on May 6-7, 2015. There were 80 participants, including representatives from the network of stakeholders involved during the implementation process, as well as from non-profit organisations in the field and policy makers. The main aims were to disseminate the knowledge about InformCare and to build a common dissemination and exploitation strategy at national level. The event included dedicated workshops for discussing the potential of web tools for informal carers, care professionals and employers of working carers.

Furthermore, an animated video was produced and translated in 23 EU languages in order to boost the dissemination of the platform via the web (available at this link: https://www.youtube.com/watch?v=rtffeyKJhj8&list=PLr50Bh2p_bxd8yvlAKYStius7_rKsjJYf). At national level, a common leaflet was
adapted, translated and distributed by involved stakeholders in 20 countries, and dissemination events focused on InformCare were organised in 19 countries in the last 6 months of the project. Many national organisations managed also to disseminate the platform in other national conference and events dedicated to informal care. In total, it can be estimated that

In terms of accesses to the web platform in the period May-November 2015 (when it was publicly available), the tracking software allowed to produce some statistics of InformCare use. Over 5,100 accesses were made by around 3,900 unique visitors. On average, users visited 5.1 pages per session, navigating on the platform for almost 4 minutes. 54% of visitors navigated on more than 1 page.

Overall, a rough estimation of all dissemination efforts suggest that the InformCare platform was disseminated to around 13,800 contacts in Europe (counting only presentations, dedicated events and distribution of promotional materials), to which it should be added the number of web contacts to the platform (3,900 visitors) and the the number of contacts reached by on-line dissemination through partners’ (e.g. websites and Facebook pages of Eurocarers, INRCA and national organisations) and other channels (e.g. newspapers, webzines) (in this latter case, it is impossible to provided a real estimation, but partners could have reached more than 60,000 contacts via on-line channels).

WP4 IMPROVING OBESITY RELATED OUTCOMES IN OLD AGE

This WP focused on the development of a novel social innovation which will reduce the proportion of the European population who reach old age with problematic obesity. This will minimise negative health impacts and maximise functional health in old age. Activities focused around understanding the determinants of obesity and developing an intervention which is guided by user-centred design and evaluation.

A literature review identified existing intergenerational interventions targeting obesity and concluded that our social innovation should be personalised and highly involving. Potential targets for intervention include dietary intake, and activity levels. A quantitative analysis of the South Yorkshire Health Study characterised participants for a qualitative study of the social determinants of physical activity. Twelve older women living in Sheffield told us that a successful intervention should allow for individual capabilities, incorporate everyday activities, and encourage sociability, with realistic and feasible goals.

Participatory design workshops with 26 older people led to development of the iStep concept, resulting in a web based tool using open-source software components. iStep supports creation of partnerships between a younger and an older person to encourage both to increase physical activity through a shared challenge. The innovation can be personalised by providing different challenges. It incorporates everyday activities (e.g. walking) and encourages intergenerational sociability.

An iterative, qualitative testing process with 120 participants (12-60 years) and a modified co-operative evaluation with 10 women (65-80 years) found the iStep prototype was acceptable and straightforward to use and incorporate into daily routines. Key issues for further development were identified. Recommendations for implementation using the knowledge to action framework are made.

*Intergenerational interventions targeting obesity: a literature review*
Intergenerational exchange is an effective source of support for older people and their families. It is a potentially useful resource in the prevention and management of obesity and its complications. It is possible that interventions based on intergenerational exchange may be used or developed to provide benefit for older generations. The purpose of this review was to analyse the characteristics and effectiveness of intergenerational interventions targeting overweight and obesity in order to inform the development of social interventions which aim to harness or expand the potential of intergenerational exchange as a resource in the prevention or management of obesity in older age.

In our systematic literature review we asked “What intergenerational interventions have been attempted to reduce obesity”? We identified 4 existing systematic reviews. There were no additional randomised controlled trials which had not been included in the systematic reviews. A further 13 papers were identified.

The selected papers described interventions targeted at parents, parents and children, grandparents and their grandchildren, and older volunteers and unrelated children. The direction of desired effect was always down the generations. None of the intergenerational interventions had an upwards effect i.e. from child to adult. Personalised, intergenerational interventions which directly and actively involve participants tended to be more effective than interventions which lacked these characteristics.

We concluded that intergenerational weight management intervention(s) for older people will include new and untested form of social innovation. This conclusion is drawn from a synthesis of interventions largely directed towards preventing and managing obesity in children and adolescents, which may not be applicable to intergenerational weight management interventions with older people. With this caveat in mind, we recommend that the content of new intergenerational interventions for older adults should be able to be personalised and highly involving for the participants.

*Using an existing cohort to examine the determinants of obesity across the life course*

We carried out a qualitative study of the social determinants of physical (in)activity amongst older women living in Sheffield. Its aim was to examine attitudes towards and experiences of physical activity amongst older women (65-84 years) from low socio-economic groups and with different weight status across the life-course.

The results showed that physical activity was undertaken more purposefully for bodily maintenance / rehabilitation (including physiotherapy ), and socialising but physical activity can also be an indirect consequence (incl. dancing and shopping). It was tolerated and rarely enjoyed: experiences of physical activity were commonly discussed in terms of pain, frustration and displeasure. The reasons for not doing more physical activity included: being physically unable, fear / anxiety, not wanting to join a class, having no-one to do it with / for, having no time or interest, or already doing enough. It was likely that a successful intervention to increase levels of physical activity will: allow for individual capabilities, incorporate everyday activities, encourage sociability, work towards realistic / feasible goals and focus on protecting / caring for bodies.

*Adopting a user centred design approach with cohort participants to develop a new social innovation*

Design Approach: To supplement the results from the literature, contextual analysis examined relevant
social and technical innovations relating to obesity, including personal activity monitoring technologies (e.g. Fitbit, MyFitnessPal), social networking technologies (e.g. MeetUps.com) and distributed group activity programs (e.g. parkrun). The analysis also covered localised initiatives within the South Yorkshire area that would impact on the sustainability of any intervention in context. A series of six participatory design workshops were held involving 26 participants aged 55 and over. Based on results from the literature, postcode selection was used to encourage involvement of participants from less affluent socio-economic areas, and BMI was considered so that each workshop included people with a range of needs and experiences. Using these inputs a range of design concepts were developed and presented as storyboards to stakeholder groups in order to select the most promising idea for further development. The chosen innovation was iStep.

The iStep concept: iStep is a service that supports the creation of partnerships between a younger and an older person to encourage both partners to increase their levels of physical activity. Each partner is given a pedometer to track how much physical activity they do. Each day, both participants will report to the iStep website to record the number of steps they have taken. A combined score is calculated taking into account the activities of both partners. Users of the system can then see how much activity they have done, compare their progress with other dyads teams, or work towards collective goals. An example activity for individual dyads (i.e. an older person & a younger person together) could be: the round Sheffield walk (a circular 24km walk through greenspace). In this exercise, the dyad log their steps each day, and this is mapped against the walking route. As the dyad progress around the route, they will pass key landmarks which could be represented by images or multimedia content that allow the young person to learn about their home city, and give the older person an opportunity to share their knowledge. Other activities that can be supported the iStep system include longer walks such as from Lands End (Great Britain’s most South Western point), to John O’Groats (Great Britain’s most northerly point) or to walk to 2014 Tour de France route. The technical platform has been developed using open-source software components (WordPress and established plugins), and a range of additional bespoke plugins have been developed to support the specialised functionality. The system is currently deployed at: http://www.istep.org.uk

User acceptability evaluation of the iStep prototype: Four phases of initial prototype testing were carried out over a 12 month period in order to understand its usability and acceptability. The initial pilot phase was carried out during the development of the iStep prototype, with 29 children, 15 parents and one grandparent using the system. This study is reported in (Leitao & Reed, 2015).

Findings: The pedometer was considered a useful motivational tool which helped raise participants’ awareness of their physical activity levels. The website was thought to be simple and relatively easy to use even by those who were less IT literate. Walking was deemed inclusive and accessible to most and setting a target goal was considered useful, so long as it was realistic and achievable. Engaging in physical activity with a partner, either actual or virtual, was considered a good way to provide support and encouragement. It was also thought to be a good way of combating social isolation to some degree. However finding the most appropriate partner for specific individuals was crucial. Sustainability of physical activity levels is an issue and barriers and facilitators to this would need to be explored further.

Conclusion: The iStep prototype was considered to be acceptable and straightforward to use and can be incorporated into daily routines. However modification to the website is required followed by further testing
and evaluation. Future evaluation needs to consider the barriers and facilitators to uptake of novel interventions and also behaviour change techniques. In addition outcomes that measure activity levels and BMI should be included prior to scale up and implementation.

Towards an implementation strategy: The user acceptability evaluation of the iStep prototype clearly identified modifications that need to be made to the website to increase user acceptability and uptake of the different components of iStep. Once relevant changes are made further testing of iStep will be required to evaluate the impact of the changes on the intended user.

The evaluation identified the need to undertake further testing of the intergenerational element of iStep in a range of different settings and using different models of intergenerational collaboration. A number of barriers were also identified which influenced user acceptability and uptake of iStep. Strategies for addressing these barriers will need to be consideration prior to further testing of the innovation. Some of the challenges of wider implementation include:

- There is a need to identify target group(s) / individuals who have potential to benefit from and engage in iStep.
- The intergenerational potential of iStep needs to be identified and exploited
- Awareness of potential of iStep should be raised among potential users and/or professional groups who may promote its uptake (health/social care, public health, education etc.)

WP5 LONG-TERM CARE IN MOTION (LTCMo)

The main goals of LTCMo were to:
1. Examine the potential of PA interventions among nursing home residents based on a systematic review evaluating previous studies in this field.
2. Develop, implement, and establish a multidimensional intervention program addressing nursing home residents and staff in two nursing homes in Heidelberg (Germany).
3. Explore an innovative mixed-method assessment strategy to reflect PA behavior and life-space as well as potential intervention effects among the vulnerable population of nursing home residents that may become a model for the examination of social innovations in this area in general.
4. Broad dissemination of findings to relevant stakeholders and users through different channels.

Main results of LTCMo
1. Review: There are very few randomized control trials with focus on PA promotion in nursing home residents; cognitively impaired persons were often excluded; most available studies reported positive intervention effects on PA; multimodal approaches were most promising.
2. Implementation of the intervention: The assessment and intervention program were successfully implemented to a large extent.
3. Intervention effects: Support of the overall hypothesis that our social innovation is able to retard further decline in motor behavior and extend life-space area of nursing home residents.
4. Article in the local newspaper “Rhein-Neckar-Zeitung”, a TV clip in the statewide evening news addressing the state of Baden-Württemberg as well as detailed information on different websites were launched to broadly disseminate and present the program and its components and to efficiently
communicate our findings and their social innovative potential.

*Systematic review*
In the context of our focus on the potential of physical activity (PA)-based interventions among long-term care residents in nursing homes, we published a systematic review paper (Jansen, Claßen, Wahl, & Hauer, 2015, European Journal of Ageing) summarising the existing evidence regarding the effects of PA interventions in the subgroup of nursing home residents and evaluating the respective assessment methods in a critical manner. A summary of the main findings is below.

There are very few randomized control trials (RCTs) addressing PA promotion among nursing home residents (≥65 years). Only eight studies met the inclusion criteria. Among those, there was only one study with the main focus on a modification of PA behavior. However most studies were not designed to promote and assess PA as a primary outcome. We found positive effects of interventions on PA in NH residents. Most of the included studies support or at least partially support this finding. With PA as a secondary study focus, the significant increases in PA emphasize the potential and feasibility of interventions for this highly vulnerable population of NH residents. Consequently, effects might be substantially increased in future studies with primary focus on PA promotion. The implementation of interventions involving different forms of activities, exercise, and behavioural interventions seems feasible and valuable in the very frail NH population, regardless of cognitive status. Interventions including enhanced individualized contact may be the most powerful tool in eliciting remaining physical and motivational resources as well as in promoting PA in sedentary NH residents. Therefore, the inclusion of staff into the process of PA behaviour modification was found very useful. With the exception of one study, results were derived from RCTs in which activity promotion was not the major focus. Therefore, we recommend concentrating on such a behavioral perspective in future studies.

A large variety of heterogeneous PA assessments was used, which impedes an overall interpretation of results. Additionally, psychometric quality of assessments was inappropriately addressed, as only three of the studies provided sufficient information on reliability and validity of PA measures. Overall, PA assessments showed heterogeneous results and they were not stated to be developed for and validated in cognitively impaired subjects, although these were included in most studies.

*Intervention*
In nursing home 1 (target intervention facility), the 12-week intervention phase was conducted from June to August 2014. In nursing home 2 (waiting control facility), the 12-week intervention phase was run from March to May 2015.

Physical exercise training approaches for residents:
1. Supervised group sessions and specific individual training. A major goal of the project was to include as many participants as possible requesting a tailored approach for subgroups with specific demands for each group. Based on motor function and absence or existence behavioural problems a, participants were assigned to high-, or low-functioning groups or an exercise group for residents of code-secured living units, resulting in six groups in total (for more details see our Guidebook). For each group 45-minute sessions were offered twice a week over a 12-week period in small groups of 4-8 residents. Training intensity was increased according to individual progress. As a special training solution two of the six
exercise groups were offered for residents with advanced forms of cognitive impairment and behavioural problems who resided in the protected area of the facility and were still able to perform in a group. All exercise components were fully tailored to the participants’ restricted capability to follow exercise instructions. Exercise sessions were supervised by experienced and skilled sports scientists to strengthen motivation/adherence and prevent adverse events such as falls. Trainers were instructed to use communication strategies able to address patients with cognitive impairment. Residents with severe motor impairment or distinct aggression-related behavioural problems were excluded from exercise group sessions. However, residents with severe motor impairment were eligible for individual training in a one-to-one training situation (specific individual training) which was based on exercises used in the group training but specially adapted to the individual abilities of the participants.

2. Serious Games approach. In general, exercise training was based on repetitive and standardized training tasks, which guarantee effectiveness, but may fail to attract all participants. The serious games approach provided an alternative mode to motivate these persons to be active by use of a “serious”, evidence-based virtual gaming exercise task. The game was specifically created for use in older people by partners from ETH Zurich with whom a research cooperation was established in the beginning of the project. The standardized program has been adjusted to the performance level of frail older adults with and without cognitive impairment in pilot testing prior to the intervention. The Serious Game task can be used as exercise as well as assessment tool and basically operates according to a dual motor/cognitive paradigm. Participants had to alternately perform 10 levels of 90 seconds duration each. Difficulty was individually tailored as the program adapts to previous individual performance level to prevent overtaxing of users. The Serious Game used in LTCMo was the “Dividat Step Plate”. For further information please visit http://www.dividat.ch/trainingsgeraete/dividat-step-plate/.

PA enhancing competence training for staff: this aimed to enable staff members to interact with residents in a way that encourages their PA as much as possible. The staff training’s conceptual background was based on established models of person-environment interactions in long-term care institutions and the significant role of staff as well as on psychological models of health psychology, self-regulation theory, and life-span motivational models. Staff training consisted of 12 weekly in-house-training sessions with two major parts: (1) eight introducing sessions of 60 minutes containing especially theoretical aspects, (2) four so-called intervision sessions (group sessions dealing with how to treat specific residents in terms of motor behaviour motivation) of 30 minutes including case-oriented discussions and feedback-loops. Each session was offered twice a week to facilitate staff attendance. Staff members were informed intensively about the role and evidence related to PA in later life and on the role of negative aging stereotypes and concomitant underestimation of residents’ remaining competencies. The importance of barriers and facilitators of being physically active was also emphasized as well as ways to overcome such barriers creatively. To achieve this goal, staff learned how to use communication and interaction techniques able to encourage residents to be more active (e.g. positivity, motivational interviewing). Based on role-plays, staff intervention was also enriched by extensive practice opportunities. In addition, the practical application of communication strategies in caring routines—with the goal to develop strategies for upcoming challenges and to monitor the achievement via feedback-loops—was a major issue in the later part of the training program and intended to increase the transfer of what has been learned to day-to-day interactions with residents.
First, we started with analyses of data that was drawn from the first measurement occasion to describe and better understand fundamental dynamics of residents’ daily life before intervention. This focused on Depression and Life-Space interaction. At the descriptive level, one quarter of the residents showed symptoms of depression according to the GDS 12R cut-off criterion. Descriptive data analyses also support the very restricted life-space of nursing home residents: On average, more than half of the day was spent within the own living unit, about 40% was spent in the own room, about 9% was spent outside the own living unit. 54% of the nursing home residents left the own unit and 12% left the facility at least once during the two measurement days. Gait speed and cognitive status were the strongest determinants of ‘time outside own room’.

*Intervention findings*
We are able to empirically verify that our assessments as well as our intervention program were well received by the majority of participating residents (nursing home 1 and 2) and staff (only nursing home 1).

At baseline, 71% (186/262) of nursing home residents (in the case of severe cognitive impairment, their legal representatives) provided written informed consent. Among those with written informed consent, 73 nursing home residents participated in the physical training (nursing home 1 and nursing home 2). Drop-out rate was low (nursing home 1: n=2., nursing home 2: n=2), adherence was 86.0% in nursing home 1, 83.4% in nursing home 2.

63% of the staff members (52/83) in nursing home 1 participated in at least one of the twelve training sessions. However, regular attendance was quite low. Only 13% of staff visited more than half of the sessions. Within each session, the number of participants varied between 11 and 21. The immediate feedback on the single sessions as well as the overall feedback was consistently very positive in nursing home 1.

Emergent evidence also indicates that our social innovation is effective with respect to primary and secondary outcomes measures. Prevention of further decline or even enhancement of PA behavior (e.g. time spent in activity) as well as extension of life-space area (e.g. life- space score; primary outcome measures). Stabilization or even improvement in motor function (e.g. maximum gait speed, timed-up-and-go test; secondary outcome measure) among residents of the target intervention facility compared to residents of the waiting control facility.

In summary, we regard our effect report as first substantial evidence that the social innovation LCTMo is effective and may stimulate future research based on classic RCT methodology, which we were not able to apply in this model project. In addition to previous analysis, we plan intensive advanced data analyses examining differential effects of the intervention on primary and secondary outcome measures including physical activity assessment.

*Implementation/Sustainability*
To ensure sustainability of intervention components, responsible institution members were integrated at an early stage and successively incorporated under regular supervision of the research team (expertise of psychologists and sports scientists). The supervision was kept up until the end of the project to reach an
appropriate continuation and sustainability of the program.

Our setting analysis evaluating activities prior to the intervention revealed that existing PA training mostly contained unspecific sit and stand exercises offered only once a week for a large group of about 10 to 12 participants. However, a maximum of eight participants should not be exceeded to ensure the safety of participants. After the completion of our project’s intervention, the number of training groups (offered twice a week, comparable to intervention groups as established in the project) has significantly raised and six groups have successfully been implemented. Group size of the newly established groups varies between six and a maximum of eight participants ensuring suitable training conditions.

Regarding the PA-enhancing competence training in nursing home 1, following the intervention there was a training session for staff members to conduct the intervention groups in staff’s shift changes (e.g. explaining role of a moderator, discussion of organizational conditions). The research team supervised the implementation for several weeks to ensure the establishment of regular intervention groups. The project successfully promoted the sustainability of intervention components. The leading management still actively supports the project’s goals including funding of newly established training groups and training of staff.

WP6 USER ENGAGEMENT
Knowledge exchange and transfer is one of INNOVAGE’s four central objectives. It is given such a high priority because of the strong commitment to knowledge exchange and transfer held by the project consortium and because it is the essential route to the widespread implementation of the Social Innovations (SIs) generated by INNOVAGE and, therefore, their impact on older people’s well-being.

The mission of INNOVAGE is to concentrate the highest possible quality of scientific expertise, together with stakeholders from all relevant fields (policy, practice, product development) and the active participation of older people, to produce and identify major innovative approaches to better quality of life and well-being as people age. The project prioritises strategic knowledge exchange and transfer activities with stakeholders in a position to influence its work and implement its outputs. In such a frame, the involvement of stakeholders is essential, and in the light of the INNOVAGE project, the engagement of the older part of the population is key.

In response to this requirement, a report was produced as part of INNOVAGE, “Guidelines on involving older people in social innovation development”. This presents some common practices and suggestions for allowing the genuine participation of seniors in social innovation process. The document highlights the complexity of dealing with users and of engaging with them, while suggesting useful methodologies for user involvement, taking into account the inter-disciplinary approach needed when discussing and implementing social innovation.

Involving older users in the planning and development of innovative approaches is essential when developing new goods and/or services. Transforming users into partners ensures relevance and adequacy of new approaches and will help them to be implemented and adapted to different contexts.

Therefore, these guidelines aim to present a strong recommendation for involvement of older people in the planning, development and implementation of social innovations, new ideas meeting social needs and
creating new relationships or collaboration. They also provide social innovators with practical tips to incorporate users’ perspectives in the social innovation processes.

The guidelines are based on literature findings and also on AGE Platform Europe’s experience of working with older people in the framework of INNOVAGE and other European research projects. Since its foundation in 2001, AGE Platform Europe has participated in many European funded research projects aiming to promote a society of all ages, to foster active and healthy ageing and to protect the wellbeing and dignity of older persons. They are intended to serve project managers, researchers and social innovators by supporting them in engaging users in the social innovation processes. They provide basic concepts, principles and tools to plan user involvement as well as practical step-by-step procedure to engage users in the social innovation process, drawing from the experience gathered through various European research projects, including INNOVAGE.

Potential Impact:
WP1 INCREASING HEALTHY LIFE EXPECTANCY

Through the activities of this WP, INNOVAGE has proposed a transformational approach to understanding and evaluating the impact of social innovations on the health and wellbeing of older people. The work particularly addresses: understanding of the social innovation process; the relationship between social innovation and the EIPAHA goal to increase by an average of 2 years HLE in Europe; assessment and evaluation of social innovations, and; measurement of impact of social innovations.

Three specific elements have been developed to stimulate a substantial step forward in the understanding and scaling of social innovations in this field; they represent the only work in this field so far. All the work is available on our website and have been widely dissemination through our knowledge exchange plan, and may be extrapolated, used developed by other interested parties.

Firstly, a new assessment process has been developed and tested to understand which social innovations have the potential to effect really change in healthy life years. A four-criteria balanced scorecard has been developed and tested by a group of experts; this is a reliable and effective tool to grade social innovations which could plausibly support active and health ageing.

Secondly, the results of this grading process have generated a database of over 150 exemplar social innovations, the most exceptional interventions, which will act as a repository of good practice for people seeking social innovations for their own locality. This process also established a categorisation system for social innovations which reflects the lifecourse element of ageing.

Thirdly a system to evaluate the potential impact of any social innovation on healthy life years has been developed. This remains live on the website and allows anyone to explore the linkages between mortality and activity limitation on both life expectancy and healthy life expectancy. Any users who have data about mortality and/or activity limitation by a rigorous evaluation of their innovation can generate specific projections about the impact on life expectancy and health life expectancy.

Through our Stakeholder Forums the project has highlighted the areas where work still remains to be
developed, thus identifying priorities for future research. The most pressing of these is effective evaluation of social innovation, which is required not only to evaluate social or health related impact but to inform effective policy and investment decision making.

Continued work in this field is likely to be particularly useful to support social innovation in the New Member States, where it has the potential to be a cost-effective way to transform services at a local and regional level. However these countries have more complex challenges stemming from historical and structural issues which require structured and specific investigation.

**WP2 USER-DRIVEN HOUSING FOR OLDER PEOPLE**

As senior citizens of today and tomorrow can be expected to demand more active involvement in decision-making regarding housing options, the App developed in this WP can be used to empower them in this regard. With the aid of the App senior citizens can evaluate and compare the accessibility in available housing options themselves and thereby become more critical consumers and thus exert pressure on housing practices and policies towards improved housing provision and better options with regard to accessible housing. In practice, however, this requires implementation of routines among housing companies aiming to systematically survey the housing stock by means of employing digitalized assessment forms, that can link up to the App. It could also involve professionals, such as occupational therapists, who are assessing the accessibility of the housing in the context of housing adaptation practices. A common platform where housing companies or professionals such as occupational therapists collect and maintain updated information on the ordinary housing stock and which the App users can access has the potential to facilitate communication between senior citizens and actors in the housing provision sector. In addition, the collection of systematic knowledge from, for example, occupational therapists on housing adaptation needs combined with an increased knowledge on how environmental barriers are perceived among senior citizens themselves, could contribute to improving national standards and guidelines for accessible housing. This new, interactive and user-oriented service is also highly competitive in the European context, in particular since the existing methodological platform already is available for application in several countries, and among them also new EU member states.

Better conditions for how current housing stocks can be improved regarding accessibility to accommodate the ageing population will benefit the community across Europe. The use of research-based methodologies has the potential to inform professional knowledge and generate nationally comparable data on environmental barriers and accessibility problems in the multi-family housing stock. Nationally comparable and research-based data will support policymakers in different countries to plan for actions that can improve the housing situation on a larger scale. Using an internationally established methodological platform will also allow for valid comparisons of the housing situation between different countries.

Making accessibility improvements is a crucial part of a strategy for better housing for older people. Ultimately, a better fit between individuals and dwellings will have positive effects on activity, participation and health among senior citizens. Refurbishment of apartments to arrive at attractive and appropriate solutions for senior citizens is an essential strategy to create positive moving chains and overcome a housing market with major shortages. Lessons learned about a new ICT tool and its usage will create conditions for scaling up and implementation of practice, which is synonymous with coordinated change at
system, organization, program, and practice levels. The essential future outcomes for actors in the housing provision sector include increased knowledge and improved skills of key staff members, changes in organizational structures and cultures, and changes in relation to senior citizens and other stakeholders; it will influence and change the perspective of actors in the housing provision sector to incorporate end user perception to a higher degree.

WP3 ICT-BASED SOCIAL SUPPORT FOR CARERS OF OLDER PEOPLE

Previous evidence in the field showed how web-based support services can contribute to address informal carers’ needs via on-line resources and individual or group support. However, many initiatives in Europe are small-scale projects and low-funded services (Schmidt et al., 2011; Carretero et al. 2012). Furthermore, many countries in Europe experience (a) a low penetration of low-cost broadband internet connection and/or (b) a small (or even no) cultural and social recognition of carers’ role (like in some Mediterranean and Eastern European areas).

The INNOVAGE WP3 goal was to contribute to improving informal carers’ quality of life and health status, with a consequent increasing in the long-term of their healthy life expectancy, as well as to empowering carers in the provision of better care for older people. This overarching goal can be achieved in the long-term through a wide dissemination and adoption of InformCare and similar technology-based tools by European citizens. In fact, it is possible to state that the following benefits can contribute to informal carers’ quality of life and quality of care provided:

- Possibility to receive reliable information, advice and counselling through interpersonal and/or group communication channels;
- Company, social and emotional support by peers, as well as solidarity and mutual learning;
- On-line safe environment tailored to and flexible for own needs;
- Self-empowerment and awareness concerning carers’ role and needs.

Now that the InformCare platform is on-line and implemented for 27 EU Member States, Eurocarers and its networks of user organisations and stakeholders will play a major role in the dissemination of this tool and its potential. The expectation is to reach a good portion of informal carers living in the EU, estimated to be between 32 and over 120 million people (Glendinning et al. 2009). Furthermore, even if digital skills for using a computer might be lacking in the mature age groups of ‘sandwich carers’ (45-65 years old), the wide availability and usage of smartphones and mobile devices (e.g. tablets) makes the possibility to access InformCare even easier for target groups with lower digital competences.

At societal level, InformCare will have a deep impact on social, cultural and legal recognition of informal carers throughout Europe. The web platform will allow stakeholders to:

- Exploit the already existing on-line contents and services, adapting them according to users’ and country needs;
- Add new versions of the platform for new countries (new member states or extra-EU countries) and linguistic minorities, including other target groups like migrant care workers, with a greater chance to promote their recognition;
- Lobby and advocate informal carers’ rights at national and European levels;
- Connect informal carers within and between countries for building the widest community on-line.
dedicated to them;

- Develop a strong network of stakeholders in all European countries engaged with the issue of informal care and aimed at implementing initiatives for them at all levels.

The empowerment of individual informal carers and national/international stakeholders will give them the adequate motivation and tools for addressing the issue of informal care and calling for new actions from public institutions, health systems and society in general. The InformCare represents a unique opportunity to raise the voice of informal carers at European level, showing the wide differences between different countries, and to provide to all carers in the EU-27 a common tool for the first time available in all languages.

WP4 IMPROVING OBESITY RELATED OUTCOMES IN OLD AGE

Obesity is a major global health issue, defined as a Body Mass Index (BMI – weight/height of greater than 30. By this measure, according to the World Health Organisation in 2014 the prevalence of obesity in most of the developed countries of the world was between 15 and 25%. In some European countries, the United States and Australasia the prevalence exceeded 25%. This has been described as a global challenge, requiring sustained and concerted international attention and action, if the potential adverse consequences of rising levels of obesity are to be avoided.

Obesity is a major risk factor for disease in older age, including Diabetes, Hypertension, Coronary Heart Disease, Osteo-arthritis and Cancer – all of which can have significant effects in reducing longevity and causing activity limitation which together affect the potential for years of healthy (active) life.

In a study of the relationship between BMI prior to old age and disability in old age, it has been shown that mid-life obesity is a significant contributing factor to the development of disability in old age. Compared to people whose BMI was in the 18.5-25 range in mid life, subjects whose BMI was over 35 had 2-4 fold higher risk of developing disability in old age. Further, estimation of the impact of obesity in old age show that obesity has a rather small effect on lifespan in the over 70s, while contributing to the development of disability in old age. This is important because it demonstrates the impact of obesity on healthy life years.

It is therefore a matter of global importance to find ways to help people avoid obesity and avoid its disabling consequences following them into old age. In this regard, Physical activity contributing to weight loss is associated with significant health benefits, both in managing / preventing health consequences of obesity and in contributing to longevity.

For example randomised controlled trials of lifestyle interventions which included 150 minutes of physical activity and diet showed reduction in body weight (of 5-7%) and reduced the rate of progression from a pre-diabetic state to type 2 diabetes by 58%. Weight loss achieved by diet alone, exercise alone or both combined is equally effective in reducing the progression of pre-diabetes.

A very large observational study (661,000 subjects), identified a substantially lower mortality risk (the Hazard Ratio was 0.69 – a 31% reduction in risk) among subjects who take part in regular physical activity (150 minutes a week) when compared to those who reported no leisure time physical activity.
The WHO Regional Office for Europe currently recommends that adults aged 65 years and above: should carry out at least 150 minutes of moderate-intensity aerobic physical activity per week, or at least 75 minutes of vigorous-intensity aerobic physical activity per week, or an equivalent combination throughout the week, and in addition strength training and balance exercises, for the prevention of falls (which are a particular problem in the older age groups). If an older person cannot achieve the recommended amounts of exercise, they are encouraged to be as physically active as conditions allow.

The prevention of obesity in middle and old age is therefore a plausible mechanism for improving population health and longevity and impacting directly on wellbeing and healthy life expectancy.

The achievement of change in behaviour, increasing activity levels to contribute to the development of obesity across the life course is an important and legitimate focus for innovation to achieve public health priorities.

To the extent that the adverse impacts of obesity are determined or attenuated by physical activity, social innovations which increase physical activity levels hold the potential to affect the healthspan and lifespan of citizens. The INNOVAGE project has included the development of a process for comparing social innovations in terms of their impact on Healthy Life Expectancy. The INNOVAGE portal identifies and categorises over 150 social innovations, a number of which targeted physical activity levels. Of nine social innovations promoting physical activity among older people, there was no evaluation of the impact of 3 of them, a further 4 were evaluated without the possibility of linking the evaluation outcomes to healthy life expectancy. Two innovations were evaluated with outcomes which could indirectly link to healthy life expectancy and no innovations measured Healthy Life Years directly or could be linked indirectly to healthy life years through self-rated health or morbidity.

In the language of the innovation framework that was used to develop social innovation in the INNOVAGE project, iStep was an early stage innovation, and as such would not be expected to have reached the stage of evaluation for impact directly on health outcomes, including healthy life expectancy. Rather, the iStep project served to demonstrate an approach to innovation. An assessment of its potential to influence longevity and activity limitation in old age would be an extrapolation from existing evidence about the impact of existing social innovations in this regard.

Critical examination of the evidence supporting an impact on health or disability, reveals that the majority of interventions had either no evaluative evidence or at best, evidence at the level of secondary outcomes (such as BMI). Therefore, while it is reasonable to claim that developing a social innovation to impact upon exercise levels among older and younger populations holds the potential to affect healthy life expectancy, it does not appear possible, in the current state of knowledge about the impact of social innovation promoting exercise on healthy life expectancy, to provide a quantitative expectation of the potential of the iStep approach to influence healthy life expectancy directly. Rather we aimed to illustrate the early stages of the innovation process: prompts, proposal and prototyping. One of our motivations was to explore the potential of intergenerational exchange as a resource for improving healthy life expectancy and the focus of our work was to develop an intergenerational social innovation focused on improving health through increasing physical activity levels.
Intergenerational solidarity is itself a target for social innovation, with numerous examples found in the INNOVAGE database. Intergenerational exchange is a rich and potential resource. For example a major study of health and retirement in Europe found that the intergenerational exchange of time and resources showed consistent patterns across Europe and demonstrated substantial transfers of resources within families. In general the net flow was from the older to the younger family members including both financial transfers and social support including from the over 70 year age group to younger generations.

In developing iStep we have demonstrated the innovation process in a project which aimed to target a significant global challenge by harnessing inter-generational good will in a way that is both personalised and involving for participants, allows for individual capabilities and incorporates everyday activity, in a way that has not been done before. These aims have been achieved but the iStep innovation process is not yet sufficiently advanced to demonstrate impact on population healthy life expectancy.

WP5 LONG-TERM CARE IN MOTION

The primary objective of LTCMo within the project INNOVAGE was to create a social innovation with the potential to promote PA-related behavior in the nursing home ecology. It represents a model project based on a natural lab approach (i.e. investigation of a maximum number of NH residents in their “real ecology”).

Although we are well aware that our study design is faced with methodological challenges (e.g. rather small sample size by a simultaneously high data density; non-randomized controlled trial), we believe that our comprehensive and individual tailored intervention has a high potential to contribute to the enhancement of nursing home residents’ quality of life. Furthermore, we hope that this project will stimulate further PA-related research with vulnerable populations at large. Two main results have emerged in our first data analyses and will be documented based on more profound and complex data analysis strategies using sophisticated mathematical algorithms (e.g. combining micro- with macro-level measurement):

Firstly our intervention program can successfully be implemented in the nursing home ecology, although this is associated with high personal (trainer with experience in working with physically and mentally frail older adults), temporal (e.g. detailed setting analysis before the implementation of such an intervention program), and organizational (e.g. training equipment) resources. There of course appears not a picture of full acceptance of all assessment strategies used in this intervention program (sensor-based measurements versus self-reports) but we are able to provide a detailed description of differential feasibility, which may later also serve to improve the usability.

Secondly, in the context of social innovations (SI), ambitious data assessment strategies are required to appropriately (high psychometric quality) analyze SI effects.

*Target groups and their potential benefit*
The primary target group of LTCMo includes nursing home residents and professionals engaged in activities with the residents. Furthermore, LTCMo may be attractive for nursing home leading personnel and other research groups as well as organizations / institutions / initiatives interested in promoting active and healthy aging at large. In addition, we hope to sensitize researchers in different disciplines of aging
research (e.g. gero-sport science; geriatric medicine; geropsychology) to now available and promising assessment strategies, when interventions in highly vulnerable populations such as long-term care residents are the target group.

As a next step, we want to integrate all intervention components of our model project, which have scientifically been proven in this project, in the care routine of other interested nursing homes. Therefore, two-day training courses via AGAPLESION Academy—a well-established care and health educational institution in Heidelberg with nation-wide outreach is offered in February 2016. A German version of our Guidebook, which is envisaged for early 2016, will facilitate the implementation procedure.

*Cross-national impact (value for other European countries)*

One of the major questions we raised in the LTCMo project was, whether our social innovation also has potential for other European countries. In our case, we would argue that there is no indication to assume that our successful social innovation, i.e. a PA oriented training in long-term care settings, will not also work in other countries including the new member states. All available research supports quite consistently that the enhancement of PA belongs to the most powerful tools to improve quality of life in old and very old age. The underlying mechanisms are likely a complex interaction of bodily, brain, and behavioural processes (in this context particularly motivational dynamics) and these inter-systematic processes stimulated by PA training might work in principal terms in every culture / country. We would also underscore that not big money investment is required to enhance PA-programs in long-term care facilities. However, it is true that training of staff is needed to unfold the best effects of enhancing PA as well as to offer a scientifically proven and safely applied training program to highly vulnerable older adults. We expect that our Guidebook provides a first major step into this direction. As a second step, we have installed a respective two-day training course via Agaplesion Academy. If sufficient interest appears, a third step might be to offer courses in English language to external professionals able to attend the Academy’s program in Heidelberg (Germany).

At the more general level, it is our strong opinion that the kind of non-pharmacological intervention our program offers has the potential to become an asset in the further development of the health and care system in the new member states. It is obvious that a strong interdisciplinary liaison between geriatric medicine, psychology, sport-, rehabilitation-, and care sciences will and should be the future in all European countries due to its potential to enhance healthy life expectancy even in multi-morbid and frail old populations. In addition, health economy research in this area suggests that such interventions might also contribute to lower health expenditures (e.g. costs related to higher care levels; avoiding fall events).

**PROJECT WIDE DISSEMINATION**

Over 250 dissemination activities have taken place reaching an estimated audience of 100,000, plus a feature on local television in Sweden with a potential audience of 1.2 million. These are listed separately. This is supplementary to the formal programme of knowledge exchange activities which have taken place and are summarised below.

*Three Stakeholder Forums*

These annual Forums, with an audience between 60-80 people, are an essential part of the impact and
engagement of the INNOVAGE project and they provide a unique platform for each scientific WP to present their research activities and future plans to non-academics and gain feedback on specific and general issues. They are scheduled to occur during each of the three years of the project to ensure that the project and its outputs are useful and relevant to a wide range of stakeholders – end users, older people (and their representatives), NGOs, charities, policy makers, practitioners. The Forums were also used to gather input from NMS participants to generate, with expert input from INNOVAGE partners LCS, a better understanding of the specific challenges for these countries. Each Forum was structured to present latest results from the INNOVAGE activities during the morning, allowing participants to provide their feedback in discussion groups during the afternoon. Guiding discussion questions were provided for all group discussions, but input was encouraged on all relevant issues, drawing on participants’ expertise and ideas to provide recommendations to help the research teams develop their activities over the subsequent year.

*Final INNOVAGE Conference*
The final project dissemination conference was staged in Brussels on 14 October 2015, and attracted over 120 participants from 29 countries. The aims of the event were to
• Share the project’s activities and results
• Highlight the great potential of social innovations to both improve wellbeing and quality of life
• Help to neutralise the negative aspects of ageing at the individual and societal levels

The conference was opened and closed by two MEPs who are members of the InterGroup on Ageing and the programme included presentations about all of our project activities. In addition two of the exemplar social innovations included on the Innovations Database described their activities and challenges and an overview of the EU’s activities for social innovation for active and healthy ageing was provided by a representative from DG CONNECT. In addition a panel discussion allowed for wider discussion of the challenges of social innovation in this field. Interactive displays for two of the social innovations (WP2 and WP3) and the Innovations Database (WP1) allowed participants to directly explore and test them and the whole event was videoed and is available on the project YouTube channel.

Delegates also received printed summaries about all three key aspects of the project:
• Findings from each of the social innovations (WPs 2, 3, 4 and 5)
• A system to evaluate social innovations and to assess their potential impact on Healthy Life Years report (WP1)
• Guidelines on involving older people in social innovation development report (WP6)

*Website*
A project website was developed and acts as a central hub for dissemination for the project. It is complemented by social media including Facebook, and a very successful Twitter account. The website is used as the key source of information for the project, and all information uploaded here – project overview, updates, deliverables (when appropriate) and news & events. It will remain as a depository of the project’s activities long after INNOVAGE has ended.

*Social and video media*
Twitter has been particularly powerful as the audience is self-selecting meaning Tweets are sent direct to interested parties. Throughout the life of the project USFD, on almost a daily basis, updated Twitter and
scanned for new and useful contacts and projects and has also live tweeted during events. This has had multiple benefits: identification of invitees to Forum events; identification of other EU projects in the same field; developing a broad understanding of trends and key actors in the social innovation field. In addition the Twitter feed is embedded in the INNOVAGE website and shows constant action, which means that it is clear to all visitors and surfers that the project is active even during these early months when there is no substantive news. By the end of the project the INNOVAGE Twitter account had 1,640 followers and had sent 1,695 tweets (an average of 1.5 per day over the whole three years). YouTube and Flickr channel have been established to host video and images from INNOVAGE events.

*Newsletters*
Two formal printed newsletters were produced during the first 18 months of project activities, followed by nine e-newsletters, sent directly to a mailing list of almost 1,800 people. As well as sharing project activities the newsletters included items on general social innovation news as well as social impact and the role of innovation in active and healthy ageing in Europe.

*Publications*
An information leaflet was created in the first few months of the project, outlining our aims, activities and partners. In addition the content was refined to the key project facts in order to a one-page A4 size file, which our partners could easily print on demand if they needed it. Both items were added to the project website.

At the end of the project, for the final conference, the leaders of the four social innovations generated by INNOVAGE were asked to create a 2 page summary of their findings, aimed at a lay audience and answering these questions:
- Who will benefit from this innovation?
- How has the social innovation been tested?
- What were the findings?
- What is required to implement the social innovation?
- Where can I learn more?

In addition a full report on the activities of WP1 was created. Both this, and the report on user involvement guidelines produced by AGE were professionally designed and produced.

List of Websites:
http://www.innovage.group.shef.ac.uk/