



Report on best practice at firm level on active ageing/green solution D6.2

*GRAGE: GRay And Green in Europe: elderly living in urban areas*

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## INTRODUCTION

### **The ageing challenge in Europe**

The European Union has to face many challenges in achieving a more balanced regional development and sustainable economic recovery. Many of those challenges have to do with the ageing population trend, urbanization and an environment under distress.

Europe has one of the largest elderly populations in the world, accounting for nearly 24% of the world total; over the next two decades, the on-going demographic shift could put a significant strain on the European economy, society and the sustainability of public finances.

More liveable and efficient communities is a target to be reached in Europe, where the “silver hair” trends can become a challenging opportunity, from a social, economic and cultural perspective, as policies towards the “silver economy” adopted by some Member States can demonstrates. The Innovation Partnership on Active and Healthy Ageing of European Commission, under the Innovation Union, is one of the major steps forward in this field ([http://ec.europa.eu/research/innovation-union/index\\_en.cfm?section=active-healthy-ageing](http://ec.europa.eu/research/innovation-union/index_en.cfm?section=active-healthy-ageing)).

Ageing society challenge is strictly linked to urbanization and environmental issues. Main threats to the European urban development model includes demographic decline and the depletion of natural resources (Cities of Tomorrow – Challenges, visions, ways forward, European Commission, DG Regional Policy 2011). A 0.6 % annual increase in urban areas, although apparently small, would lead to a doubling of the total amount of urban area in a little over a century. Thus, urban sprawl is one of the major common and cross-cutting issues facing Europe. Despite the relevance of urbanization, this issue is frequently tackled from a mere technical perspective, without paying due attention to the social process underlying urban trends and without specific links to European citizenship and to the needs of elderly citizens (European Commission, DG Regional Policy 2011).

Researchers within GRAGE have been working to provide a comprehensive overview on suitable urban solutions for an aging society, with a high impact on relevant stakeholder of the project, including the business sphere.

Indeed, EU Member States stand at very different stages of development and urbanisation. Nevertheless, these states share many commonalities, and there is significant scope for joint research and collaboration in the search for pathways to sustainable urban futures and elderly inclusion.

In this context, GRAGE intends to develop winning ideas to promote an active, harmonious and inclusive citizenship for elderly people living in urban contexts.

### **The focus of the deliverable**

This deliverable address one of the key issues analysed by WP6, ie opportunities for Europe in the businesses sector related to products and solutions for elderly people. Specifically, the deliverable is focused on the analysis of expertise matured by European firms in the “green for grey” sectors to match them with potential needs of foreign countries that could be tackled to boost commercial and investment opportunities for European firms (SMEs, in particular).

Researchers working on this deliverable identified some best practices deriving from already funded European projects on active ageing and green issues, with a specific attention to green buildings and urban agriculture. At the same time, some “best in class” cases have been identified for firms operating in Europe.

In the light of the analysis of European excellences, researchers focus on industrial policy suggestions and operative suggestions for European firms to promote internationalization and gain market share in those countries facing the ageing and environmental challenges (such as China). The idea behind this Deliverable is that Europe could gain new competitive advantages at international level, focusing on technologies, products, solutions already developed for European citizen. Analysing best practice on active ageing issues and solutions, considering both European firms and European projects developed so far, we intend to understand implementation/exportation opportunities at international level.

Specifically, the deliverable aims at mapping the most interesting and promising examples of European firms that are leveraging the ageing and green challenges to boost their competitiveness in the international markets. Several industries are involved, because of the adaptability of the active ageing business field and its multifunctional applications.



All partners of GRAGE project were involved to select companies eligible as best practices. This gave the chance to consortium members to enlarge their own network and also strengthen cooperation among partners. The non-academic partners were strongly involved during the research activities. We selected three companies and related products/services that GRAGE consortium deemed interesting example of concrete applications with a high business values.

## METHODOLOGY

In this paragraph we describe our research design strategy as well as methodology we used.

The method of research, in general, is the strategy or the plan which determines the decision regarding certain research methods being adopted (Crotty, 1998, p. 3). The research methods can be explained as posing questions on how researchers investigate what they considered important and deemed possible to be investigated (Guba & Lincoln, 1994). Therefore, the research methods can be considered as to do with the *why, what, from where, when and how* data is collected and analysed (Scotland, 2012, p. 9). Methods are the chosen research techniques and procedures to collect and analyse data in a research project (Crotty, 1998, p. 3). The choices of methods adopted for research depends on the methodology, epistemology and the ontological position the researchers are orientated to, and their preferences. Researchers need to decide if qualitative or quantitative research is to be conducted and the specific data type to be collected, as all research paradigms can accommodate both qualitative and quantitative data (Scotland, 2012, p. 10).

There has been much debate on quantitative versus qualitative research methods amongst researchers (Miles & Huberman, 1994; Miles, Huberman & Saldana, 2014). While there is merit for both methodologies, it has been suggested that qualitative research methods are more suited and even necessary to gain a more in-depth understanding of a complex topic and to extract rich data for analysis (Berg, 2007; Berg & Lune, 2012).

In comparison to quantitative research, qualitative research can be employed to study the less concrete aspects such as the 'meanings, concepts, definitions, characteristics, metaphors, symbols and possibly the description of things'. Accordingly, the use of a qualitative research method for this research is deemed more suitable for examining experiences of the firms and their involvement into the active ageing field, in order to gain a deeper understanding. This research adopted a constructivist and interpretivist approach, and, accordingly, the qualitative research design was deemed the most suitable. This is because the interpretive methodology aimed to understand the phenomenon from an individual's perspective and examine the interactions between individuals, whilst taking into consideration the historical and cultural contexts (Creswell, 2009; Scotland, 2012). Accordingly, the approach chosen for this research needed to provide flexibility to the participants to enable them to have a voice to share their respective experiences. Many different qualitative

methods can be used in the social sciences. Berg (2007) discussed seven methods: interviewing, focus groups, ethnography, sociometry, unobtrusive measures, historiography, and case studies.

Semi-structured interviews through questionnaire (Rubin & Babbie, 2012; Merriam, 2001; Nieswiadomy, 2002; Berg, 2005) was the chosen qualitative research method for this research, as the aim was to examine the reflections of the managers' experiences when facing businesses related to active ageing, and to gain an in-depth perspective of their thoughts.

The methods needed to provide a deep understanding of people's behaviour and explain actions from the research participants' perspective.

Given the dynamic nature of cross-cultural research questions that need to be answered, open-ended interviews were chosen (Scotland, 2012, p. 12). For the purpose of understanding why semi-structured in-depth interviews were chosen as the preferred method for this research, an overview of the different approaches to interviews is presented below. The interview structures are often referred to as 'the family of qualitative interviews' (Rubins & Rubins, 1995; Berg, 2005, p. 78; Rubin & Rubin, 2011).

Different forms of interviews can be utilised to gain rich data using the qualitative research approach (Creswell, 2009, 2014). The three main interview types are: the standardised (formal or structured), the un-standardised (informal or nondirective), and the semi-standardised (guided semi-structured or focused) interview (Fontana & Frey, 2000; Rubin & Babbie, 2012; Merriam, 2001; Nieswiadomy, 2002; Berg, 2007). The difference between these interview structures is their degree of formality, in terms of how rigid or structured the interviews are. The first interview type is the standardised interview, using a schedule of interview questions that are formally structured. Interviewers ask the research participants to answer every question, with no variation in the wording of the questions. There is no follow-up on interviewees' responses and the interviewer moves on to the next question to maintain the structure. There is not much flexibility for the interviewer or the interviewee (Berg, 2007). The logic behind this approach is to standardise the method by giving every interviewee the identical prompts, which helps with analysis and comparability (Rubin & Babbie, 2012; Berg, 2005, p. 78). Researchers employing these interviews need to have a clear understanding of the nature of the problem they are investigating, and what questions will deliver the information they require to provide a deep understanding of the research question. The assumption is that the questions planned in the interview are clear enough to draw

out the pertinent information from the Interviewees. Furthermore, the wording of the questions is clear to the interviewees and they are able to understand the questions and respond accordingly.

The opposite to the formal rigor of the standardised interviews are 'unstandardised interviews' which have no structure or schedule of questions of any kind. That is not to say there is no theory underpinning their adoption, which is that un-standardised interviews have their own assumptions too. The first difference is that the interviewer does not know what the essential questions are, therefore, the interviewer must be able to: 'develop, adapt, and generate questions and follow up probes appropriate to each given situation and the central purpose of the investigation' (Berg, 2005, p. 80). It is argued that the necessary and suitable questions will come up as a result of interactions during the interview (Schwartz & Jacobs, 1979, p. 40).

As highlighted before, the semi-standardised interview, alternatively known as the guided semi-structured or focused interview, was employed to collect data. This interview type occupies the middle ground between the opposites of the completely standardised and the completely un-standardised interview structures.

A researcher employing a semi-standardised interview technique generally develops a list of predetermined questions and prompts or identifies topics upon which to ask questions. In this format, the interviewers ask the interviewees predetermined questions in an organised, consistent, and sequential manner.

However, in contrast to the structured interview the interviewers have the flexibility to deviate; therefore, the interviewers are allowed to 'probe' further into the answers offered by the interviewees to their predetermined questions (Berg, 2005; Seidman, 2013; Brinkmann, 2014). The assumption underpinning this interview approach is that the questions are prepared using words recognisable to the people being interviewed and which are in the subjects' vocabularies (Berg, 2005).

However, the questions employed in a semi-standardised interview will be individually interpreted by interviewees, and there can be variation in the way that the interviewees respond to them. Interviewers must bear in mind that they are capturing interviewees' viewpoints. In light of the overview provided above, the semi-structured interview is therefore the form of interview that better adapts to the case-study tool employed in this work.

Given its organization, it still allows to collect information which can be compared, as it is necessary when mapping examples of best practices, while it lets a certain degree of freedom: since it considers interaction during the interview, information gathered with follow-up questions and deviations from the predetermined structure enable each case considered to highlight its own peculiarity and strengths.

In sum, the analysis led to the decision to adopt a methodology research which consider the direct interviews as main means of interaction with the intercepted companies in Europe. Specifically, the interviews followed the guided semi-structured or focused typology which has been described above.

The methodology described above has been applied on two out of the three cases chosen for this research. In particular the VTT and Hartela cases followed the guided semi-structured interviews, where the researchers have the possibility to directly question the companies.

A different methodology has been used to Hooba case study as there were not the chance to directly interviews the firm.

It led to the analysis of the main features of the company through websites and articles, thus avoiding the direct interview. It gives more quantitative results instead of qualitative ones because of the missing direct interview with the entrepreneur.

Therefore, the methodology adopted for investigating the Hooba case provides the use of three fixed questions - Who, Where, What – that can give a clear and simple understanding of the company and its products/services.

As matter of fact, the information collected have been clustered under these categories as implemented also for the other cases.

The decision to carry on the investigation even if there wasn't the chance of conducting the interview lays on the high relevance of the product realized by Hooba and the significant impact of the products on elderly as well as the innovative kind of company in itself.

However, the objective is to keep working on the collection of the interview, thus integrating the data obtained so far. Hopefully it could be accomplished by the end of the summer and then published on the website and social media with a specific post.

Anyway, even if the three cases have different methodology (two with interviews and one without) homogeneity on the organization of the answers has been maintained, thus improving the analysis of the results as well as their categorization and dissemination.

Therefore, the ESRs involved in the task decided to follow a fixed list of questions for all the cases: who, what and where along with other three queries: problem, implementation and results. As mentioned, this structure enabled researchers to coherently collect and analyse data as well as to provide consistency with the project objectives. The two interviews were held both personally and by skype calls which allowed researchers to get the data with different timing and in more than a one-shot interview.

#### **SELECTION OF BEST PRACTICES AT FIRM LEVEL**

The case studies come from the joint research activity of the ESR dott. Silvia Leoni (Unimc) who gathered interviews and data during her mobility in Finland and the ERS and task leader dott. Massimiliano Gatto (UniMc) during his mobility in Germany. Therefore, the deliverable has also been used as a means of communication and interaction among different researchers from diverse institution.

The aims of the interviews were addressed towards three main aspects of GRAGE:

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- the relation with GRAGE topics and focus;
  - the product/project proposed for elderly;
  - the possibility to internationalize product/projects.
- 

First of all, the questions posed during the interview aim to investigate to which extend the company's core activity is relevant to the issues analysed within GRAGE and, more specifically, if it is really addressed to solve the challenges brought by urbanization and ageing society. Second, questions are formulated in such a way to stress the functionality of one product/service or project in particular in answering specific problems and to understand how well the implementation of the project has worked.



Finally, questions try to assess whether the product or project could be a promising example in solving elderly problems and could be exported and employed in other contexts, such as China or the USA. The cases selected refer to ICT, buildings and food for the Elderly.

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ICT for elderly

Best practice

## VTT Technical Research Centre of Finland

### WHO

VTT Technical Research Centre of Finland is a non-profit research centre with a national mandate in Finland, that is it is sustained by Finnish government to a great degree.

It is one of the leading research and technology organisations in Europe, with 75 years' experience, serving both the private and the public sector.

One of their motto "We create technology for business – for the benefit of society" perfectly summarizes their core activity as well as values and mission: VTT aims at creating a better future through scientific innovations and help society grow and renew through applied research.

In practice, VTT contributes to develop already existing technology and creates new smart technologies, profitable solutions, production processes, methods, and innovation services, thanks to a team of multidisciplinary experts and on the bases of ongoing research. They provide customized solutions for their customers, as well as access to the best existing knowledge in the world given their broad partners' network.

All this helps promoting sustainable development, employment and well-being.

Some Figures:

Financial information

- Net turnover 163 M€
- Government grant 77 M€ (47 % of turnover)
- Revenue from abroad 59 M€ (36 % of turnover)

Personnel

- Personnel 2,128
- University degree: 81 %
- Doctors and licentiate: 28 %



## WHAT

The services and solutions offered by VTT cover a wide range of fields that could be grouped in the following categories:

- Bioeconomy and circular economy
- Health and wellbeing
- Digital society
- Low carbon energy
- Smart industries
- Sustainable and smart cities
- Business development
- Pilot plants and R&D infra

All these services respond to challenges that are strictly interconnected among each other, nevertheless it is worth to highlight two of the above-mentioned field, health and wellbeing and smart cities, as they especially consider the issues analyzed within GRAGE.

VTT development activities in these fields focus on health monitoring, human data analysis and application and service design. VTT is also committed to develop technologies enabling hi-tech functionality in wearable devices through the use of novel sensing capabilities, energy harvesting technologies and software algorithms.

## WHERE

VTT has several locations across Finland, in Espoo, Tampere, Oulu, Jyväskylä, Kuopio and Kajaani, as well as many contact points abroad to support its foreign operations and also the mobility of their researchers. Locations abroad include Brazil, China, South Korea and Belgium.

VTT's reference market is mainly Finland; their activity supports Finnish economic growth by improving competitiveness, profitability and networking of Finnish companies. In addition, VTT also cooperates in the international growth of technology-driven companies.

In figures, VTT customers could be listed in the following way:

- 1,500 customers
- 840 domestic companies



- 410 foreign companies
- 250 public organisations in Finland and abroad

Ultimately, VTT's addressees are citizens and society at large. Nevertheless, a specific focus is dedicated to elderly as a consistent segment of the technology developed by VTT is ageing technology, specifically created to face the challenges of ageing population.

### **PROBLEM**

As population is slowly growing and living increasingly longer and in better health conditions, ageing is one primary issue, especially for European countries.

Several necessities coming from this issue must be taken into account. For instance, it is necessary to support living independently at home as longest as possible and improving the quality of life of elderly.

This can be referred not only to the physical conditions of elderly but also to their psychological state. Most of the times, a feeling of loneliness and insecurity can build up and generate isolation, which is a common problem among elderly.

This certainly undermines the quality of life of the elderly but also of her/his family and relatives and, in general, of all the people who are concerned with the living conditions of somebody they care for. This problem can be addressed through the use of technology.

### **IMPLEMENTATION**

Buying the technology from the US, VTT has developed a project which tries to place this existing technology into a new healthcare system, which is the Finnish one. So, in this example an already existing and operating technology is positioned into a new reference market and, most of all, is adapted to a different healthcare system.

Remote controlled robots have been installed in a nursing home hosting elderly people who need 24/7 care and assistance. The technology allows the elderly to communicate with their families through a call request and then a video-call.

The robot is also able to move while keeping the video-call on so that it becomes important not only for reducing elderly's feeling of loneliness, but also for relatives to check on them and understand potential emergency or dangerous situations.



## RESULT

A field trial was conducted to test the interaction between the robot and the resident of the nursing home and investigate how the experience could influence the sense of security.

The test was attended by an elderly resident together with her daughters and nursing staff of the community. Preliminary results show positive effects of the technology, improving the sense of security and reducing solitude. The users also felt that the communication was easy. The project is ongoing and it is going to be tested also in private homes.

## INTERVIEW

Most of the information collected to structure the case study can be found on VTT's website. In addition, a Skype interview with a researcher of VTT helped having a deeper insight on the projects that VTT is successfully carrying on.

The interview took place on 20/02/2017 thanks to the cooperation of Senior Scientist Niemelä Marketta, who is directly involved in the project described in the case study.

*1. GRAGE stands for "Grey and Green in Europe: elderly living in urban areas". It is a EU-funded project in which researchers from all over Europe work together in order to identify possible solutions to the challenges of urbanization, ageing population and sustainability. Could you give a brief overview of your business? Is it connected with the issues analyzed by GRAGE?*

VTT is a research centre, not a company. It is a non-profit organization heavily sustained by government, which supports companies in their business.

VTT provides technology for citizens and elderly and collaborates with companies in many ways. Most of the research includes technology development which is then included in companies' business, but in some areas VTT buys existing technology already on the market. For example, in my team we always use already existing technology.

VTT deals with issues like urbanization, sustainability and circular economy, but my work is related to ageing technology only. Within this field research compares existing practices and existing technology.

We monitor whether with the adoption of technology there is a change in the practice. We focus on understanding the needs of users and on Finnish healthcare issues. For example, there are not enough workers in our healthcare system.

*2. What are the problems that your products/solutions solve?*

Loneliness and the feeling of insecurity are a common problem among elderly. This project implemented a technology in a nursing home in order to help elderly communicate with their families and come out from their isolation. Elderly could video-call their families and the robot would follow them in their movements keeping the call on. The project is going to be tested at home as well.

*3. Describe one or more products responding to these issues. What challenges (if any) have you met in implementing your product/solution? How did you overcome them?*

I can give you three projects as example.

1. <http://www.vtt.fi/medialle/uutiset/helppok%C3%A4ytt%C3%B6inen-robotti-tuok%C3%A4ihmiset-ja-omaiset-yhteen-v%C3%A4limatkoista-huolimatta>

In this project VTT bought the technology from US and tried how it could fit into Finnish healthcare system.



*Teknologian tutkimuskeskus VTT*



2. Metese project: Meaningful Technology for Seniors.

<http://www.vtt.fi/sites/METESE/>

It is a collaborative project between VTT and AIST, a Japanese research centre. It involves comparative studies between Finland and Japan in healthcare.

It is a multidisciplinary project:

- It identifies conditions on which we can use robots for healthcare
- It involves both technology development and research related to users needs acceptance
- It also faces ethical issues: which robots and how can respect elderly, how job markets will change.

3. The third example is given by the project BeWell, which monitors solutions for people with memory disorders, people which are still in condition good enough to live home. The project implements the use of sensors to help these people live home and to detect whether they are in danger.

All these projects use home robots. It would be great to think about urban robots and use them outside but weather conditions are challenging. Projects 1 and 2 are explorative projects, not connected with particular diseases, thus they have a broad perspective.

In general, our projects have many perspectives:

1. What is the acceptability of this technology among workers and in the health sector;
2. Make technology familiar, get users to know about the existing technology in healthcare;
3. Increase quality of life;
4. Support living independently at home as longest as possible;
5. Collect users' needs and understand which solutions they could use. Many times they could benefit from existing technology but they just don't know it.



*4. Does your product/solution has a potential to be adopted all over Europe?*

Ageing and the need to support people at home is all over Europe - in several countries in EU at least - and Japanese population is ageing even faster than in Finland.

*5. Would it be reasonable to expect your product to be exported to China in the future?*

We cross test this technology, not necessary in field trials, we try in different cultures. Working with AIST, we know that Japan is much more interested in social robots. Finland maybe is more similar to the rest of EU. I do not have much cultural knowledge about China, but I have no information against it. I would say it is reasonable to think about exporting these solutions to China if there is a need.

## Buildings for elderly

### Best Practice

#### Hartela

##### WHO

Hartela is one of the largest construction companies in Finland. Its history dates back in 1942 when it was founded as a family-owned company based in Turku, in a time in which the great need for housing that followed the war was boosted by industrialization.

Since then, Hartela has grown in a more-than-300-million-euro company with a variety of project areas under its belt.

Hartela provides construction and project development services, with professionalism and customer-orientation as its main values.

##### WHAT

Hartela's initial focus was building housing. Over the years this expanded to include commercial, institutional, and mechanical, electrical, and plumbing (MEP) systems.

Currently, Hartela is building apartment buildings, assisted living buildings, shopping centres, offices, schools, hospitals, factories, wastewater treatment plants and nuclear waste sites.

The company's mission is to create good living spaces, buildings and areas, with a special focus on the design and implementation of ecological and sustainable products. In designing its business premises, Hartela genuinely implements environmentally-friendly items, realizing the most energy-efficient office buildings in Finland.

In this way, their customers have been actively involved in the reduction of socially harmful environmental impacts. As a whole, ecology in construction is the sum of many factors, which concern the planning, construction and operational phases.

In particular, the planning phase should include:

- Location and site selection
- Priority for public transport
- Optimization of cooling and heating needs



- Utilizing daylight and minimizing the need for lighting with façade design
- Design and selection of energy-efficient technical building systems

The construction phase should include:

- Material choices
- Minimization and recycling of site waste
- Minimizing building energy consumption
- Preservation / protection of surrounding nature

During the operational phase, Hartela considers:

- Knowledge-based remote management of the building system
- Extensive energy and water consumption measuring and consumption monitoring
- Targeted energy production

## WHERE

The company's main business areas are Southern Finland, Päijät-Häme, South-West Finland, Satakunta, Pirkanmaa and Oulu.

The Group includes Hartela Länsi-Suomi Oy, which operates in Satu Mare and Länsi-Uusimaa, Hartela Etelä-Suomi Oy, which operates in Lahti, and Hartela Pohjois-Suomi Oy, which operates in Oulu, Turku and Tampere regions. Their offices are located in Helsinki, Lahti, Turku, Tampere, Rauma and Oulu.

## PROBLEMS

People have several needs and among them having a good health is a priority. This is even more important with an ageing population as Europe currently has got, subject to a variety of health problems.

From this situation, it comes the necessity to keep the own health status under control and the demand for the availability of structures which can respond to specific health needs, by guaranteeing accessibility to all groups of population.



## IMPLEMENTATION

Hartela is currently working on a multi-field project, partly construction. 11 buildings will be built on a certain chosen site, and old buildings renovated. The objective is to create a new eco system for tests and demo in the buildings, and digitalization services close to people's needs leaving in the compound. The normal construction groups will work alongside a Business Lab, that is made up of a co-working network including different working groups specialized in different issues. The compound includes an old school comprising a sport hall.

The implementation of digitalization services will allow people to check for the availability of places in the gym in a given moment as well as the collection of health data belonging to people living in that area, such that they could receive suggestions and proposals for sport activities targeted to their specific health status and physical needs. The project intends to exploit the maximum potential from the compound chosen and from the possibility to renovate.

## RESULTS

Construction will start in 2018 and all the 11 buildings will hopefully be completed in the following 7/8 years. The project is still in its starting phase, an idea that must evolve and be shaped in a more tangible work.

## INTERVIEW

The information comes from the company website and from a Skype interview with Helena Moring, Project Manager at Hartela (Oulu), held on 12/04/2017. Helena is directly involved in the work of the Business Lab, that represents a showroom for possible future housing solutions.

*1. GRAGE stands for "Grey and Green in Europe: elderly living in urban areas". It is a EU-funded project in which researchers from all over Europe work together in order to identify possible solutions to the challenges of urbanization, ageing population and sustainability. Could you give a brief overview of your business? Is it connected with the issues analyzed by GRAGE?*

Hartela is now working on a partly construction project. 11 buildings will be built on a certain site. The normal construction groups will work alongside a Business Lab: several groups will be solving different issues.

The objective is to create a new eco system for testing in the buildings, and digitalization services close to people leaving in the buildings. Ageing people are of course one of the groups to which the project is addressed, but it is not meant especially for this group. Services included in the project, demo and simulations are addressed to families, couples, single people living in the compound, etc. Only a certain percentage of them is made up by seniors.

Digital services and solutions involved want to make the living easier for everybody in that compound, not just the seniors. Construction will start next year and all the 11 buildings will hopefully be completed in the next 7/8 years.

*2. What are the problems that your products/solutions solve?*

People's needs are so many, we try to work on very tangible things. For example, the compound includes an old school to be renovated together with a gym/sport hall. We would like to offer as much as possible from what we have.

We want to offer a digitalized service which, for instance, can allow people to see available places in the gym, and so on.

The general aim is to collect and quantify health data from people living nearby the gym and propose sport activity. Our first focus is to get 100 % potential from that sport hall.

*3. Describe one or more products responding to these issues. What challenges (if any) have you met in implementing your product/solution? How did you overcome them?*

There are lots of things not solved yet. The project is a starting idea that we want to narrow down to something more concrete.

At the moment, I only see challenges. It is necessary to find somebody who really believe in this project such that to make it a business.



4. Does your product/solution has a potential to be adopted all over Europe? 5. Would it be reasonable to expect your product to be exported to China in the future? (common answer)

This is something that has to do with how innovative the project is. The only innovative part here is the data collection about health and the pro-active provision of choices and offers in terms of sport/health activities. I do not know if this is unique. If it is unique then the concept and its application could be sold abroad.

A big part of the project is related to how the different technologies can help people. For example, 5G networks are involved; in this case, what mobile technology can give us might be unique. In that case it would be possible to multiply the concept.

## Food for elderly

### Best practice

#### Hooba

As mentioned above the analysis conducted on Hooba has no semi-structured (guided) interview as there was no chance to organize a direct interview with the entrepreneur or other representative of the company.

Therefore, it provides an investigation following the matrix explained into methodology paragraph: a fixed list of questions who, what and where along with other three queries: problem, implementation and results. Anyway, the data collected show interesting results and give a clear perception of the products potentialities into the market as well as the mission and vision of the company.

#### WHO

Hooba is a company operating into the production-food business. Its mission is to reduce global meat production and at the same time improve the health of the nation (UK) by producing tasty, meat-free food.

Therefore, Hooba range of products are firmly aimed at meat-eaters. Not exclusively vegans and vegetarians (just 11% of the population) but meat-eaters, because getting meat-eaters to eat less meat will result in the biggest impact on meat production and health. The company believes that reducing meat consuming will help the environmental protection and healthcare system and moreover paid attention on the quality of a good life-style.

The slogan used at Hooba is “eat LESS meat”, because they say that even cutting out a little can do a lot of good. Hooba Foods can ease its clients gently and nutritiously into reducing the meat eaten. The headquarter is placed in Darlington, County Durham, where the company is targeting meat-eaters across the country and beyond.

Among the potential customers Hooba is particularly interested in young people as it is vital that they develop good, healthy eating habits. It means that also the educational perspective is a crucial



element for the company. Therefore, Hooba staff is building-up strong relationships with schools and universities as to provide insight into a world most unknown by young generation. Of course, the objective is to generate awareness in the youth with a long-term impact on society.

Moreover, the Hooba products are addressed to elderly people living in the urban area as they have few chances to easily get healthy food.

Therefore, different products have been developed keeping in mind this segment of market which will increase in the next years. Another relevant aspect is the supplying other food producers and caterers, so that they can include Hooba in their products too. Last but not least, Hooba aims at intercepting the majority of

British Public in their homes and kitchens. This is part of the company' mission to become the supplier of the most part of the british families entering into their kitchens and lives.

To this purpose Hooba produces family-favourites such as sausages, burgers, meatballs, mince and sausage rolls with our totally meat-free Hooba range.

## WHAT

Hooba provides a wide range of food products aiming at intercepting a wide range of public and different kind of people.

As already stated the meet-eaters are the main target, thus giving to Hooba the chance to be free of limits in terms of gender and age; the only firmly point is the urban area as the food needs to be consumed not a long time after the purchase. Below is the list of the products currently available at Hooba catalogue:

- Bamper Family Pack
- Large Sausage Selection
- Hooba meet-free breakfast
- Hooba meet-free Chorizo
- Meat-Free Apple and Sage Flavour Sausage
- Meat-Free Cumberland
- Meat-Free Harissa
- Meet-free Burger



- Meet-free Balls
- Meet-free Mince
- Meet free Loaf

The clients can buy the products directly online with no need to move to the head-quarter or go to shops. In this way everyone can comfortably order the food and receive it directly at home. This service has been thought to facilitate the purchase of elderly people with a basic knowledge on the information technology that in UK is currently at a good level.

In this way they can order the food directly from home. Of course, the young generation covers the great majority of clients because of their confidence in the ICT and online e-commerce.

## WHERE

Hooba Foods is placed in Darlington, County Durham. United Kingdom. Its main market refers to the urban area.

## PROBLEM

The need on which Hooba built its business is clearly summarized by the dedicated page on the Hooba website where the company provides a wide perspective of the problem they are fighting against. Below is the extrapolation of what can be deepened on the website:

*“7 billion people live on planet Earth. We rear 70 billion farm animals to feed us. That’s us well and truly outnumbered! Do we really need all these farm animals?”*

*The truth is that we don’t. We ‘grow’ enough food to feed 12-15 billion people. However, 1 billion people are starving each day. How is this possible?*

*It’s possible because 50% of the grain and vegetables we grow is used to feed farm animals, not people.*

*There’s more. The 7 billion people on the planet drink 5.2 billion gallons of water each day and eat 21 billion lbs of food.*

*The 1.5 billion cows alone drink 45 billion gallons of water each day and consume 135 billion lbs of food!*



*It takes... wait for it... 2,500 gallons of water to produce a 1lb beef burger!*

*When it comes to greenhouse gases we're all told that fossil fuels are to blame, aren't we? Well here's the truth of the matter. All transport; cars, trains, buses, trucks and planes put together are to blame for 13% of greenhouse gases. Animal agriculture is responsible for 51%! So, you can see why something needs to be done to improve our prospects for the future.*

### ***Did you know...?***

- *Animal agriculture consumes 1/3 of all the planet's fresh water.*
- *45% of the Earth's land is used for farm animal grazing.*
- *91% of rainforest destruction is due to clearance for grazing land and growing crops for animal-feed.*
- *In the USA alone, domestic water use is 5%, whilst animal agriculture uses 55%.*
- ***Every second***, *1 acre of land is cleared to graze animals and grow the crops to feed them.*
- *It takes 1,000 gallons of water to produce 1 gallon of milk!"*

### **IMPLEMENTATION**

Hooba carried out a multilevel range of activities that involve young generations, elderly, entrepreneurs and policy makers. One of the great example of implementation is the Hooba Urban CIC (Community Interest Company). Hooba Urban CIC (Community Interest Company) is a project set up to put something back into the community.

The idea came from the relation and the network develop by Hooba with one of its most relevant client: Virgin Trains East Coast. As matter of fact, working with Virgin Trains East Coast and local coffee shops, Hooba created an opportunity for young people that helps them learn skills whilst earning money; run a business and most of all develop their self-esteem and confidence.

The need is that to make the Hooba products the company needs od supply of a particular strain of Oyster Mushrooms, therefore Hooba decided to start Hooba Urban.

In other words, the company is working with a number of partners to grow mushrooms using waste used coffee grounds (that would normally go to landfill) in unused urban spaces and prisons.

The partners in the scheme collect the coffee grounds locally, we supply the mushroom spawn, and the growing happens under Newcastle Central Station in an area provided by Virgin Trains East



Coast, and at HM Prison Kirklevington in recycled shipping containers. The products only require the stems of the mushrooms, leaving the caps to be sold fresh locally, or dried and sold on the website. Hooba Foods are contracted to buy all of the stems produced, making the ventures economically viable and sustainable whilst providing training and education to the people within the prisons. This has a great social impact.

Another GRAGE partner - Food Nation - is also very involved in the project, using Hooba Foods to help educate people about the benefits of a reduced meat and meat free diet for their personal health and also to the climate for us all. Currently the company is looking to expand this great scheme out of the North East.

## CONCLUSIONS

The work carried out aimed at showing some examples of firms at European level that are proposing innovative products and services that can impact positively on elderly and civil society at large. The best practices selected come from the stimuli received by GRAGE' partners incentivising participation and engagement of staff in several deliverables and other scientific productions. Thanks to researchers' mobility encouraged by GRAGE, it was possible to collect interviews and information to frame the best practices selected.

The examples provided are mostly based in Finland and, nevertheless the field of work of the companies analysed as case studies are very different, they show a strong high-tech orientation and attention to nutrition.

As a common element, they share the ability to use technology and research at service of human beings and of the most challenging issues that population faces today. In particular, the application of technology and digitalization results transversally in all companies examined as a simple everyday tool that everybody, including elderly, would be able to use.

This aspect cannot be underestimated: the ability to deliver a solution to its users is as important as the solution itself.

Hence, a first conclusion that can be drawn in a context of best practices identification is that the examples provided excel in the application and delivery of technology to elderly and, thus, should be considered as a benchmark from European firms aiming at approaching the problems coming with ageing and urbanization.

A second consideration that can be made from the information collected is the potential for the suggested solutions to be exported abroad. Even though the interviews do not let emerge a definite position on the topic, they leave a door open for a possible replication of the solutions abroad. It is surely recognized that the products here described could possibly solve or at least face issues that are common all over Europe and outside the EU as well. Ageing population is a global phenomenon and so are the problems that come along with it.

And as long as these issues concern the whole population, the products listed in this report could find large application and, as a consequence, become of interest for the market related to products and services for elderly.

As highlighted in the first example, this has to come with the capacity to adapt to different cultures, meaning to different interests and different levels of development of technology.

Yet, among the examples described, there are projects already established with extra-EU partners. Partnerships with companies and research units based outside the EU could encourage the elaboration of solutions responding to the needs of different cultures, enlarging the market for services for elderly or even creating one where it does not exist yet.

At this regard, integration and exchange of knowledge occurred with the researchers involved in the realization of D6.3 - Report on policies to be developed at European Level because of the great investigation on the Chinese market and related issues and opportunity to enter that market. Particularly relevant is the analysis carried out on *Urbanization and demography* which gives precious information to the services and products commercialized both by VTT and Hartela. In particular the latter, building smart Houses and ambient assisted living solutions, should take into strict consideration the trends of Urbanization and demography changing in China.

On the other hand, VTT could find of deep interest the investigation realized on Healthcare and aging as well as the digital Healthcare which represent the core business of the company. Moreover, also Hooba foods should pay attention on the potentialities of the Chinese market, even if they are currently more focused on gaining market share into UK. Anyway, the internationalization strategy could be a next step to be considered also by Hooba.

This interaction and integration among the work carried on by several ESRs into diverse deliverable it's extremely relevant as it generates further research activity and foster innovative and unexperienced research questions as well as the creation of new relations with companies and stakeholders.

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