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Consolidated Vision of ICT and Ageing

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Bridging Research in
BRAID
Ageing and ICT Development



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Executive Summary

The **Bridging Research in Ageing and ICT Development (BRAID)** initiative aims to responding to the radical changes in Europe’s demography and addressing many challenges which are raised consequently. The main product developed during the BRAID initiative is the comprehensive RTD roadmap for “ageing well”, which further to identifying advanced ICT-based approaches and mechanisms to support ageing citizens of Europe, also addresses other perspectives of this problem area and specifies their challenges. The starting point of BRAID was the four previous roadmapping projects, namely **AALIANCE**, **CAPSIL**, **ePAL**, and **SENIOR**, the so-called feeder projects, which are each focused on different specific aspects of ageing and technology. The BRAID roadmap consolidates the results of these feeder projects and creates one holistic roadmap for ICT & ageing challenges in European society.

In this deliverable, the results achieved during the second phase of the work in WP4 of the BRAID initiative are documented. WP4 establishes the vision for BRAID. Building on the results from the first phase (documented in Deliverable D4.1), during the second phase the **five BRAID vision statements** are systematically validated & enhanced through presenting them to stakeholders. Through the systematic approach, the five vision statements are first internally discussed and **validated** within the BRAID consortium. Then they are presented and processed at a number of consensus building activities involving different groups of external stakeholders. These consensus building activities included a number of working sessions, e.g. **in-depth consensus building workshops, external stakeholder consultation, discussion visioning workshops**, as well as **remote surveys participated by experts** involved in the vision validation process. Finally, at the last step of this phase, the collected feedback are analyzed and used to enhance and extend the vision statements. The results of phase 2 constitute the final BRAID vision statements which are documented in this deliverable, including the **core BRAID vision** (Figure 25) and its instantiations to the **four life settings for ageing population**, i.e. the visions for: **independent living** (Figure 26), **health and care in life** (Figure 27), **occupation in life** (Figure 28), and **recreation in life** (Figure 29).

The core BRAID vision specifies its: Core ideology, envisioned future, and main desired facets. The envisioned future part of the core BRAID vision states the following: “By 2020, in the pursuit of Europe’s vision of smart, sustainable and inclusive growth, and in response to the challenges and opportunities raised by a rapidly ageing demographic profile, on the basis of advanced ICT developments, complemented by societal, organizational, economical, and regulatory developments, Europeans, individually and collectively, will align their efforts and means to empower all citizens to age well particularly those who fall into other vulnerable groups (e.g. as a result of gender, ethnicity, religion, economic power, disabilities, sexual orientation, etc), promoting their well-being and encouraging the pursuit of their fulfillment, contributing to the continuous development of European society and community and all levels.”

This document first summarizes both our systematic visioning approach, which is applied to building the consolidated well-conceived vision for BRAID, based on its four feeder projects, as well as the main components developed in the **phase 1** of WP4. Furthermore, it documents the main work of the **phase 2**, i.e. the process of organizing validation workshops and surveys, collecting of feedback on the 1st vision statements of the BRAID, and developing the enhanced final BRAID vision statements. This is followed by a closer, more focused analysis of the final core BRAID vision and its instantiations, presenting different perspectives to visualize it, and further discussion of the relevance of communities to vision achievement.

The BRAID vision which is the final result of the WP4 of BRAID constitutes a main input into the roadmap development of WP6. The roadmap process defines the detailed steps that need to be taken in order to implement and achieve the stated aims within the BRAID’s vision, starting with the present state of the society related to the BRAID’s environment.

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1 Introduction

It is a commonly known fact that the population of Europe is ageing. It is estimated that by 2020, the number of people aged 65 or older will reach about 20% of Europe’s total population. Until 2060 this percentage is estimated to raise to about 30% (see Figure 1). Figure 2 shows that the form of the population is slowly transforming from a “pyramid” to a “kite” with the older population outweighing the younger population. Calculating the “old age dependency ratio”, expresses the significance of the change more clearly. The ratio describes the number of people aged over 64, representing the older “dependent” non-working population, versus the population aged between 15 and 64 years, representing the working population. This ratio is predicted to shift from approximately 1 over 4 in 2009 to 1 over 2 in 2060.

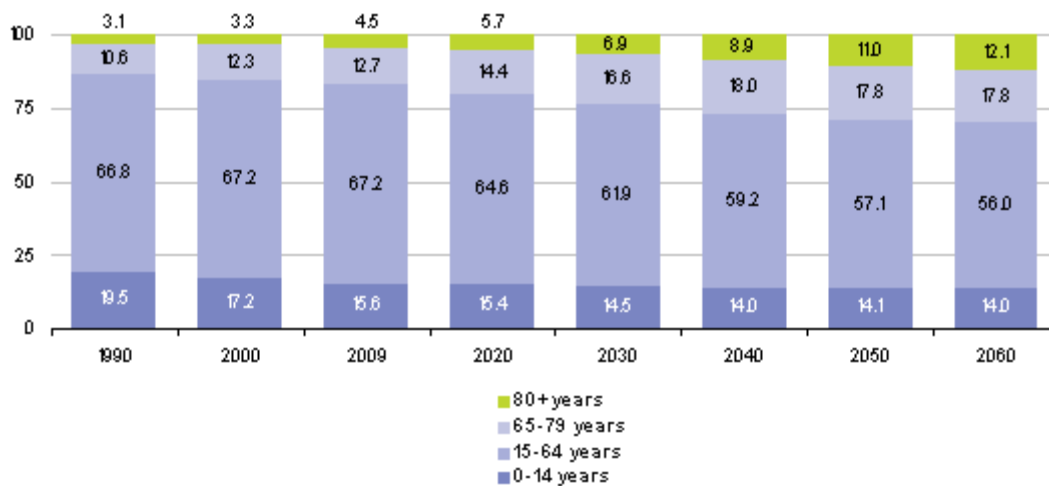


Figure 1: European population structure [Eurostat, 2011]

The radical shift in demography clearly presents a large number of challenges. Some of these challenges include: First, and most obvious from the old age dependency ratio, social security systems will have to deal with a much higher number of people depending on pension payments or care compared to the working population than at present. Second, fewer workers will be available to help the economy while many more people are needed to provide care services to the growing group of ageing people. Third, there are more healthier people over the retirement age who wish to make the best of their final stage of life and to age well, participating in community life, and ideally being able to choose what they wish to do, but possibly having the need to find an extra income in addition to the retirement pension. There are many challenges raised in this context, in different parts of Europe which also differ depending on the perspective of the ageing person vs. the social system.

At the same time, there are many new developments and innovations in technology which can assist alleviating some of the burdens. These innovations can be beneficial in supporting senior citizens (e.g. giving them new ways of communications or assisting with their daily life activities), but can also bring disadvantages (e.g. exposing them to the danger of misuse of their data, or putting barriers on their use of these innovations when they are not able to adapt to new systems quickly enough). Several past and ongoing research and development initiatives have been looking at different aspects of ageing and technology. Most projects have addressed senior citizens past the nominal retirement age of say 65, as the recipients of mostly health and care assistive services. Nevertheless, a few projects have also perceived and addressed ageing well as an enabler for senior citizens, considering them as providers of some sort of services within the community, and/or as contributors to their social and economic wellbeing. A few other projects have investigated specific aspects related to ageing, such as leisure, ethics, work, etc. Due to the above mentioned narrow focuses, the pre-existing defined visions for ageing well cover only partial or specific aspects of ageing well in Europe, while all varieties of perspectives are in fact important and need to be consolidated and realized together within the European society in order to comprehensively address and achieve the goal of ageing well.

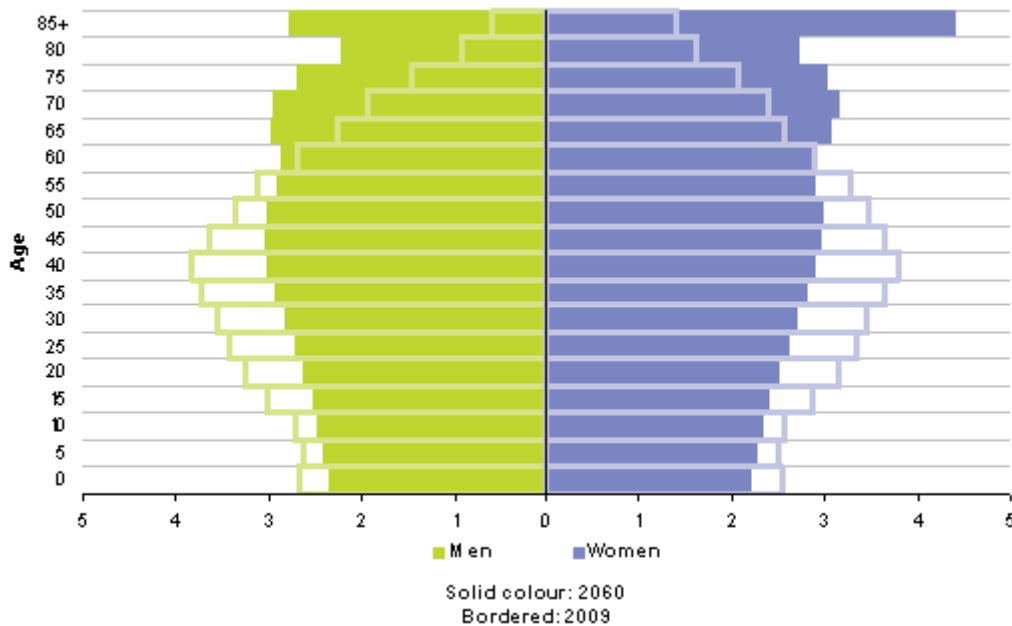


Figure 2: European population pyramids in 2009 and 2060, in % of total population [Eurostat, 2011]

The Bridging Research in Ageing and ICT Development (BRAID) project aims at having a holistic look at how ageing well can be realized, including support for all aspects of life (the so called “life settings” in this report) of an ageing person (e.g. independent living and health). It considers how this goal can be reached employing the main forces that in one way or another influence the life of individual senior citizens and can therefore drive the development of a better future for ageing population in Europe (the so called “driving forces” in this report). In other words, the rapid demographic change in Europe shall be studied and supported from its technological, organizational, economic, societal, and regulatory perspectives, as addressed in this deliverable.

The goal of the BRAID initiative is to develop a comprehensive RTD roadmap for “ageing well”, and fostering approaches and mechanisms supportive in the ageing process. It builds on the results from four previous roadmapping projects which looked at different aspects of ICT and ageing. AALIANCE focused on ambient assisted living; CAPSIL focused on health and solutions to independent living; ePAL focused on continued active professional life; SENIOR focused on social, ethical and privacy issues of ageing. BRAID’s roadmap consolidates the results of these four projects, and extends their horizon with comprehensively addressing of different aspects of life from the perspective of an ageing person (i.e. Independent Living, Health & Care in Life, Occupation in Life, Recreation in Life, as addressed in this report) as well as supporting them through the relevant driving forces.

An important part of the roadmapping process and final roadmap document is its strong consolidated and audacious vision. The vision descriptively specifies and sets the goals to be reached by the plan of actions of the roadmap. Therefore it is developed in the first steps of the roadmapping process and needs to be recognized as the desirable yet achievable future, through consensus among relevant stakeholders and experts in ICT & ageing. A consolidated European vision for its ageing citizens provides an image of how this society intends to grow and serve all its relevant stakeholders.

As described in section 1.2, a systematic approach has been applied for developing the BRAID vision. During the first phase of the visioning process, the first vision of BRAID was established as documented in BRAID deliverable D4.1. During the second phase of the visioning process, as described in the deliverable at hand, this first vision has been internally tested and validated (see chapter 2), then subject to external consensus building activities (see chapter 3), and finally refined and documented as the final vision for BRAID (see chapter 4).

In the following sections of the introduction, an overview is given of the role of the visioning process in BRAID (section 1.1), followed by the visioning approach summarized (section 1.2), and an overview of the main components and results of the first visioning phase (section 1.3).

1.1 Role of the BRAID Visioning

As previously introduced, the BRAID vision is a main element of the BRAID roadmap. In this section, the concept of “visioning” as well as the vision’s role in the roadmap, and the relevance of the visioning process are briefly described. Moreover, a metaphor for the vision as a castle on top of a hill is introduced.

What is a vision? A vision is a deeply held picture of where a group of people in an organization or society wishes to reach in the future. It is the most inspiring future that a society can imagine, and thus creates meaning and purpose which catapults the individuals’ aim at high levels of achievement [Donald, 2003]. A vision primarily provides the following:

1. a compelling view of the future;
2. a credible and attractive view of what is potentially feasible for a group or society;
3. unifying guides to what a group or society wishes to, and can become, and
4. an inspirational focal point for the spirit of a group or society and its members.

A well-conceived vision according to Cummings [Cummings, 2005], consists of the following two elements:

1. The *core ideology*, being composed of the *core values* which are the essential and enduring tenets of a group of people or a society and the *core purpose* which points to certain fundamental reason for society to exist.
2. The *envisioned future*, consisting of a *long-term audacious goal* and a *vivid description* of what it will be like when goals are achieved.

Within the roadmap, the vision defines the ultimate goals to be achieved through applying a number of “planned actions” (which is often itself called the “roadmap”) to the “baseline” (which is the current state of society), as shown in see Figure 3.

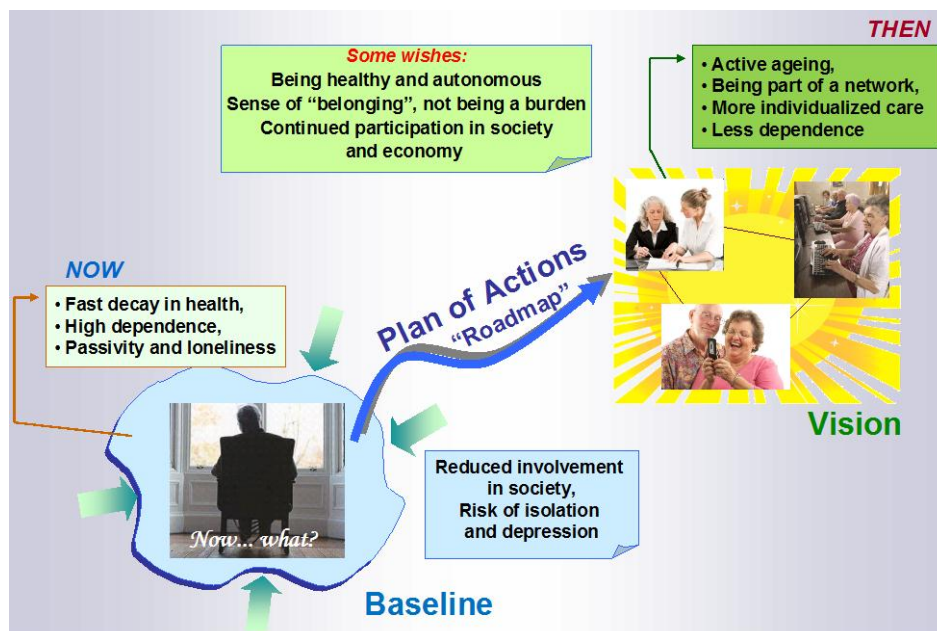


Figure 3: Role of the vision in the roadmap

The process of visioning, i.e. building a vision, is one of those least straightforward, yet one of the most important steps for roadmapping. Visioning is an important method applied for leadership, for strategy implementation, and change [Laubacher & Malone, 1997]. In the process of visioning concepts that enable citizens’ ability to influence the future are presented

that inspire successful groups and societies. It is essential that a vision provides a clear image of how the society will satisfy its important stakeholder needs. Therefore, the vision must be built from what its primary stakeholders, in the case of BRAID especially the senior citizens, perceive as necessary for satisfying their needs, and crossed with what is feasible to achieve, and not simply what the service providers (governments, industry, civil society organizations, regulatory bodies, etc.) like to provide and think that these will satisfy the primary stakeholders [Afsarmanesh et al, 2009].

Metaphorically, the visioning process can be seen as the process of designing a dream castle on top of a mountain. This castle is far away, consequently at the start of the process both its structure and elements are unknown as well as how we can reach it. So the process starts as an idea of what a good, but plausible, future may look like, if we start walking towards it from the present state of the society (see Figure 4).

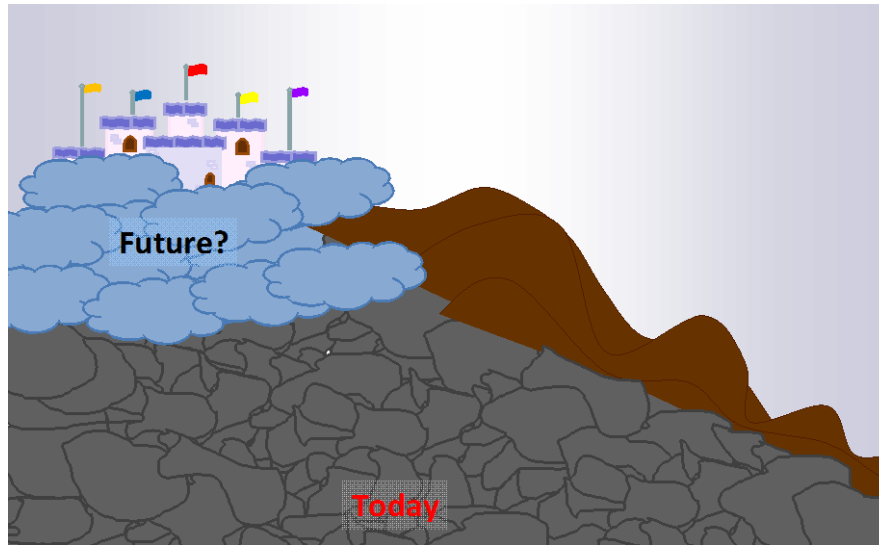


Figure 4: Vision as a dream castle

However, during the process of visioning, the castle is incrementally defined, specifying the envisioned future through its structure and components. Once achieving a clear well-defined image of the vision castle, the roadmapping process starts with its planning of how to pave the way to the castle, by defining the actions as the roadmap elements, leading to this desired future castle. Furthermore, if the design of the vision castle is achieved through consensus with all its future inhabitants then building the road to the castle is motivated, and the inhabitants will eagerly work together to build and walk this path to reach the castle (see Figure 5). We will return to discussing this metaphor later in Section 4.3.1 of this deliverable.



Figure 5: Planning the way to the vision castle

One important step of the visioning process is to identify the main drivers which have substantial influence on the achievement of the vision, as well as identifying the current trends related to these drivers which will in turn either support or inhibit this achievement. Moreover, another important step is to better characterize different settings which must be supported by the vision and building of scenarios as an important tool for communicating ideas for the envisioned future with different stakeholders. These steps are part of the systematic visioning approach of BRAID as also addressed later in this deliverable.

In the following section, the approach for building the vision of BRAID is introduced. For a more detailed discussion of the visioning process, please refer to BRAID deliverable D4.1, sections 1.1 and 1.2.

1.2 Approach to Building a Consolidated Vision for BRAID

For developing a vision to address a particular aspect in a society, and in order to transform it into a concrete specification of the desired future, two base approaches may be considered. On the one hand, there is the top-down approach, when vision building is seen as the responsibility for the leadership of the society. On the other hand there is the bottom-up approach, when in a supervised manner, the stakeholders together develop, and therefore support, what a society desires to achieve in the future. We believe that there are good arguments for the role of leadership in developing and articulating a vision. At the same time, we believe that all stakeholders must be included in the process to tune and refine the vision, incorporating some of their interests, in order to commit themselves to providing support towards achieving the defined envisioned future. [Senge et al, 1994]

In our visioning we pursue the second approach above, and in a supervised manner involve the stakeholders in a structured development of a well-conceived vision. One challenge is the identification of and reaching agreement on the fundamental components that need to be included in the vision. Therefore, it is necessary to follow a systematic approach to guide all steps which must be performed and for including the stakeholders which must be involved in such a process.

In our visioning approach applied for building the BRAID vision, different stakeholders are involved for consultation, and validation of the vision statements at different stages. The approach guides the process of building a vision for the European society in a structured manner, along the following steps, also depicted in Figure 6:

1. Consolidation and discussion of visionary ideas for the BRAID environment,
2. Development of the 1st vision of BRAID,
3. Testing and validating the elaborated vision,
4. Consensus building through consultation and workshops,
5. Documenting and finalizing the BRAID vision.

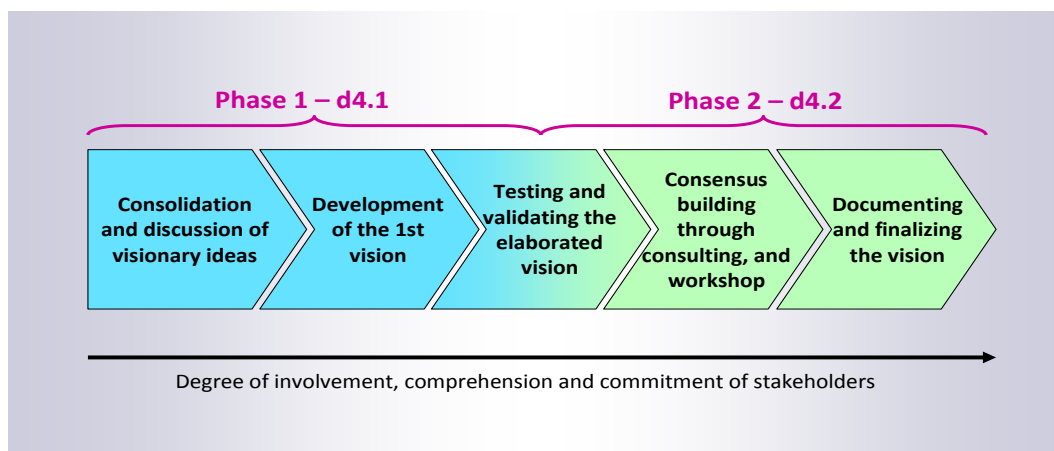


Figure 6: Generic steps in the process of building a vision, involving main stakeholders

The first two steps constitute the main work in the vision development, as they lead to the specification of the first version of the vision statement. The other steps serve to revise, enhance, refine and finalize the vision. As shown with the two colors used in Figure 6, in the first phase of BRAID, the first two steps were conducted, as well as a part of the third step. This work is documented in D4.1. The main subjects of the deliverable at hand (D4.2) are the last three steps. In the following sections, an overview all of the steps is given.

Step 1: Discussion and generation of visionary ideas

The first step starts the process of vision building when the need for systematic changes in the society is detected. In this first step, visionary ideas are generated and collected. Usually a variety of people, such as decision makers and leaders, experts, research community, etc. are involved in the discussion of what elements must be addressed and/or included in the vision for the targeted environment.

One main goal of BRAID is to consolidate four existing roadmaps which are the results of previous projects. Figure 7 shows that the major focus of consolidation determined the main input materials for the generation of visionary ideas: the documents of the previous projects. Similarly, in this step the role of the stakeholders was taken by members of the previous projects.

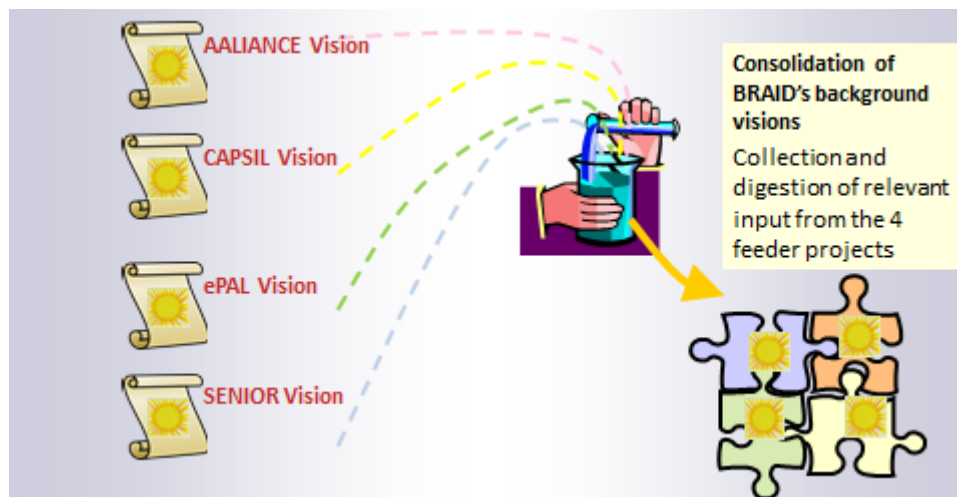


Figure 7: Generation of visionary ideas from previous projects

In the following, the main findings related to the vision from the four feeder projects are described. More details can be found in BRAID deliverable D4.1, section 2.

AALIANCE (“The European Ambient Assisted Living Alliance”) focused on ambient assisted living (AAL), i.e. intelligent systems of assistance for a better, healthier and safer life with a focus on elder persons. Related to the BRAID vision, AALIANCE analyzed current trends and identified barriers for deployment from the perspectives of different stakeholder groups. The vision of the project itself is stated by a number of scenarios which describe what the use of different technologies could look like in the future. [AALIANCE, 2010]

CAPSIL (“International Support of a Common Awareness & Knowledge Platform for Studying & Enabling Independent Living”) developed a roadmap for EU research with the goal of achieving effective and sustainable solutions to independent living based on an in-depth analysis of both clinical requirements and the ICT scenarios under development in the EU, as well as the US and Japan, and finally disseminated the results to stakeholders. The vision of CAPSIL is captured in a set of futuristic scenarios which describe in a vivid way how a number of different characters in different settings manage to deal with certain limitations by the help of technology. [CAPSIL, 2010]

ePAL (“extending Professional Active Life”) developed a roadmap for better assisting senior professionals in continuing/extending their active work life, using advanced ICT solutions. A systematic approach similar to the one of BRAID was applied for developing the roadmap. The ePAL’s vision is illustrated by a set of scenarios and explicitly worked out and stated based on both the developed scenarios and the analysis of relevant drivers and trends. In

discussing the solutions and action points towards achieving the vision, besides technologies, the social and organizational perspectives were considered. This research discovered that different forms of communities play an important role in enabling senior professionals to stay active in their communities for a longer time. [Afsarmanesh et al, 2009; Camarinha-Matos et al, 2009a, 2009b, 2010; Msanjila et al, 2010]

SENIOR (“Social, Ethical and Privacy Needs in ICT for Older People: a Dialogue Roadmap”) provides a systematic assessment of the social, ethical and privacy issues involved in ICT and Ageing, in order to plan strategies and for governing technology trends according to EU legal and ethical standards. The vision of the project is implicitly stated in the description of already existing best practices for “e-inclusion” of ageing citizens, and the final ethical recommendations. Publications related to the projects can be found in [Mordini et al, 2008, 2009a, 2009b, 2010; Wright et al, 2010; Wright 2010a, 2010b].

Step 2: Elaboration of 1st vision & its preliminary acceptance

In the second step, the vision building consortium identifies and generates the main elements related to the vision and establishes the 1st vision statement. This step constituted the main work for the first phase of vision building of BRAID (see Figure 6). As shown in Figure 8, in BRAID this process is based on the following three main groups of tasks:

Task Group 1 - Establishing life settings (subsection 1.3.1) *and scenarios* (subsection 1.3.2): The life settings are established as a framework for the following actions and then scenarios are developed for the life settings as tool to create an image what the envisioned future should look like.

Task Group 2 - Establishing drivers (subsection 1.3.3) *and trends* (subsection 1.3.4): The main driving forces influencing the lives of ageing citizens are identified and then for these driving forces trends which support or inhibit reaching the vision are analyzed.

Task Group 3 - Elaboration of the 1st BRAID vision (subsection 1.3.6) is the goal and last part of this step. A core vision for BRAID is elaborated which is then instantiated into the four life settings.

The tasks are described in more detail together with an overview of the most important results of this step in section 1.3. For a detailed description, please refer to BRAID deliverable D4.1, section 3.2, and chapters 4, 5, and 6.

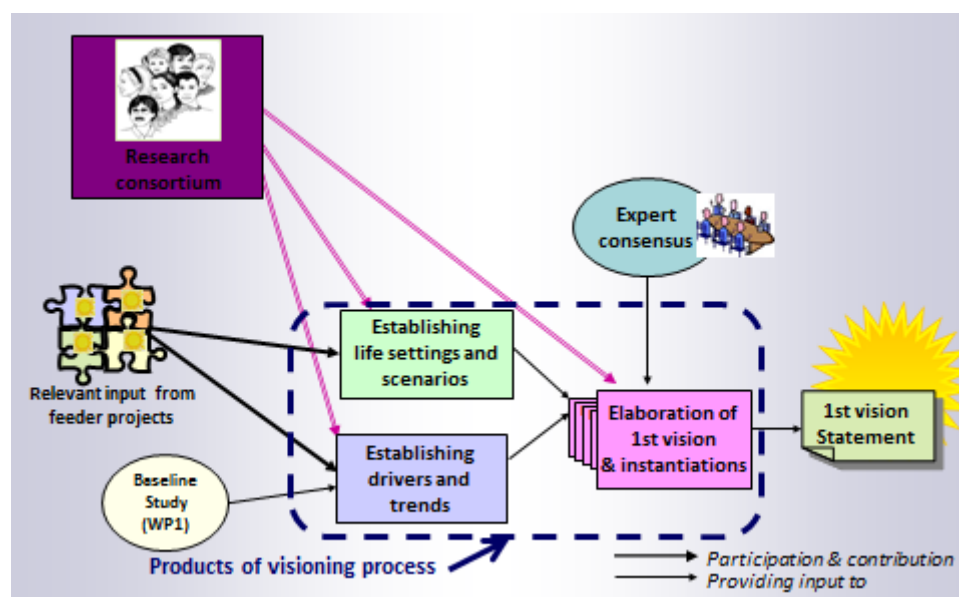


Figure 8: The main tasks in establishing the first vision statement

While these first two steps were completed in the first phase of the visioning process, the next three steps are conducted in the second phase (see Figure 6). They serve for processing the 1st vision statement by validating it, reaching consensus on it, and changing it to the final vision. Following, these three steps are introduced. The details and results are described in chapters 2, 3, and 4.

Step 3: Testing and validating the elaborated vision

To ensure that the society will be moving in the right direction once it implements this vision, the vision needs to be validated. Representatives from each group of stakeholders must be involved in this step, assessing the vision and after that providing improvement and extension suggestions. Details about the activities done for this step in BRAID as well as results are presented in chapter 2.

Step 4: Consensus building through consulting and workshops

In order for the vision to get full support by all stakeholders, it needs their acceptance, which can be gained by involving them in the decision making process. This process of building consensus through involving stakeholders in the discussion about the BRAID vision is described in chapter 3.

Step 5: Documenting and finalizing the vision

In the final step, feedback from steps 3 and 4 is analyzed and incorporated into the vision statement for improving it. The analysis and its results as well as the final vision statement are documented in chapter 4.

While BRAID deliverable D4.1 contained the results of the first phase of the visioning process, i.e. steps 1 and 2 (and partly 3), the deliverable at hand is about the second phase of the work done for the visioning, i.e. steps 3, 4 and 5. Accordingly, a short overview of the visioning results from the first phase is given in section 1.3. In chapters 2, 3 and 4 the steps of the second phase will be discussed in detail.

1.3 Summary of Components of BRAID Visioning

Following a systematic process in establishing the first vision, step 2 of the overall visioning approach (see section 1.2 with Figure 6), ensures that the vision is built on up-to date knowledge, experience and understanding available or gained during the visioning process within the consortium. In this step, the main elements related to the vision are identified and generated. These elements are the foundation of the vision, and therefore are extremely important. They are summarized in the following section to give insight into the ingredients of the vision. For a detailed description, please refer to BRAID deliverable D4.1.

Figure 9 presents an overview of all the results from the visioning tasks, as briefly indicated in the Figure 8 of the previous section. Furthermore, the following subsections discuss these three main task groups and their results:

- ◇ **Task Group 1** – Establishing Life Settings and Scenarios (Sections 1.3.1 & 1.3.2)

- ◇ **Task Group 2** – Establishing Drivers and Trends (Sections 1.3.3 & 1.3.4)

- ◇ **Task Group 3** – Elaboration of the 1st BRAID Vision (section 1.3.5)

Furthermore, in Section 1.3.6, the relevance of establishing communities to supporting ageing citizens with their well beings are addressed.

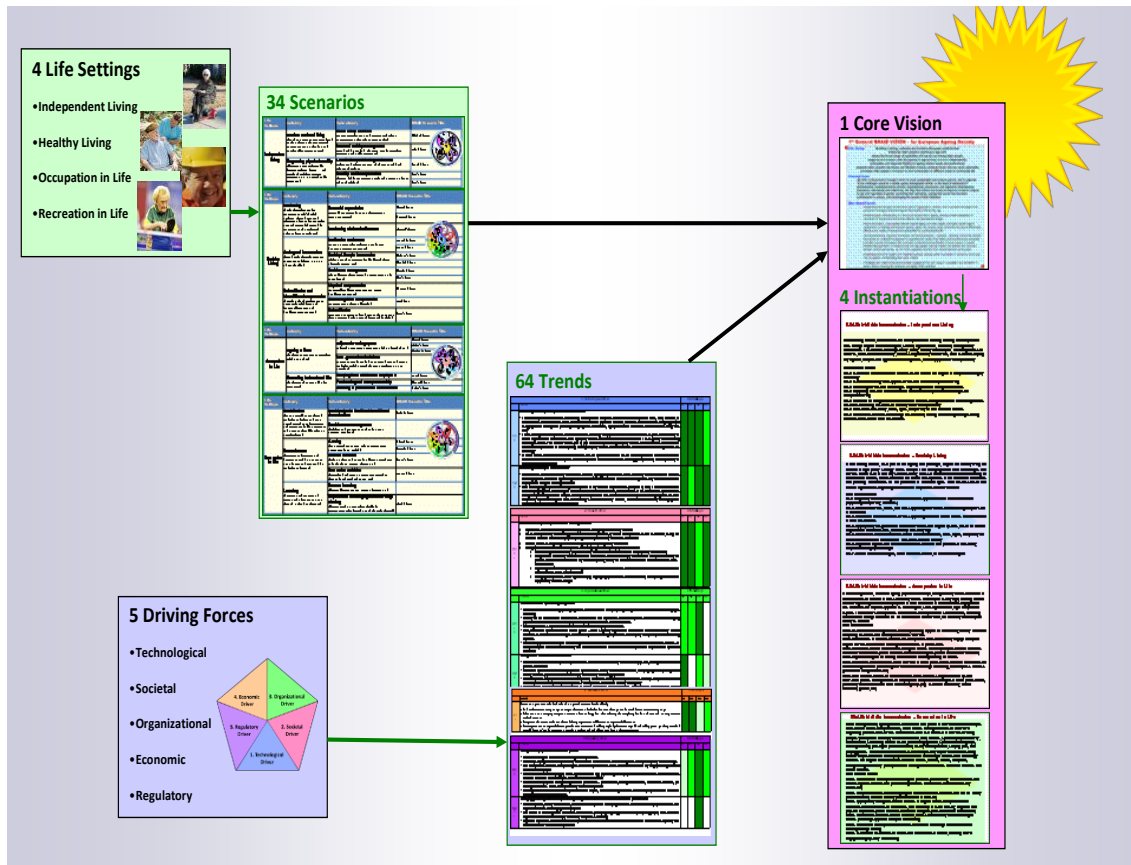


Figure 9: Products of the visioning process

Task Group 1 – Establishing Life Settings and Scenarios

This task group aims at creating a complete image of what the future that BRAID is envisioning should look like, structured by the life settings (subsection 1.3.1) and illustrated by the scenarios (subsection 1.3.2).

1.3.1 Life Settings for Ageing Population

BRAID is aimed at developing a roadmap that covers all areas of a person's life. The goal of developing such a holistic roadmap is in contrast with the preceding projects of BRAID which each focused on one aspect of ageing. The "life settings" established for BRAID are a tool for ensuring that the vision and roadmap of BRAID cover all desired aspects.

Built on the work done in the four feeder projects of BRAID, especially noted in the categorization shown in AALIANCE [AALIANCE, 2010], the life settings of BRAID serve as a framework for sorting the visionary ideas collected and created during the first step of visioning, as well as further developments in the process of creating the BRAID vision and roadmap.

The four life settings defined in BRAID describe different aspects of either interest or necessity for every ageing person. When getting older, extra support might be needed for these areas of life. The following four life settings are distinguished and also shown in the Figure 10:

1. Independent Living,
2. Health and Care in Life,
3. Occupation in Life,
4. Recreation in Life.

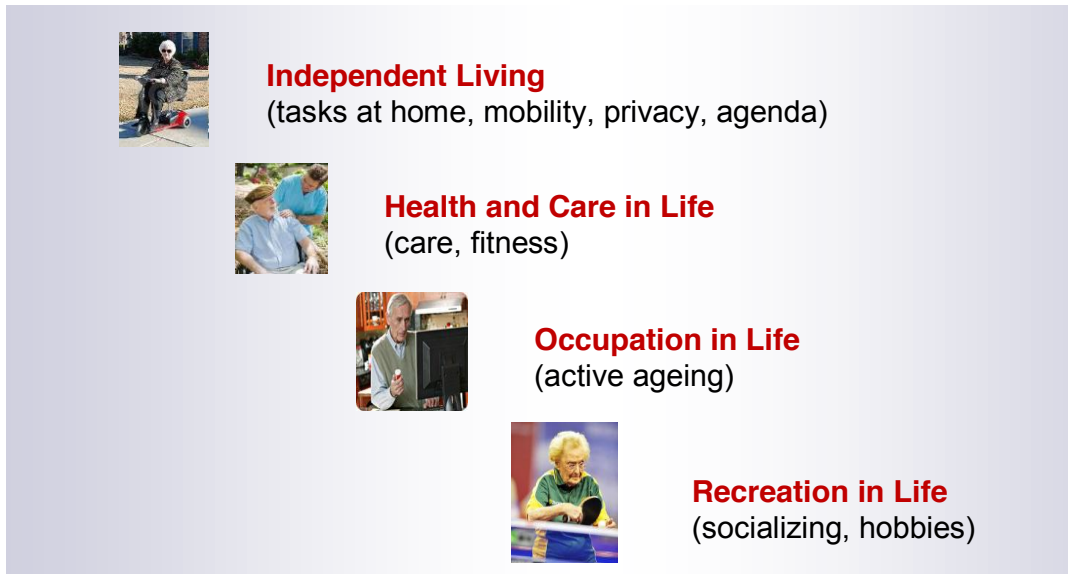


Figure 10: The Life Settings of BRAID

Figure 11 visualizes the materials that were collected for each life setting from the feeder projects. The thickness of arrows gives an indication of the amount of information adapted from the connected project in relation to each life setting that the arrow is pointing at. The figure shows that each of the feeder projects of BRAID had a different focus. Each of them either covered only some of the life settings (CAPSIL and ePAL) or paid attention to a certain topic crossing all life settings (AALIANCE, SENIOR). It can be seen how establishing the life settings gives more insight into the materials at hand and supports the holistic approach of BRAID.

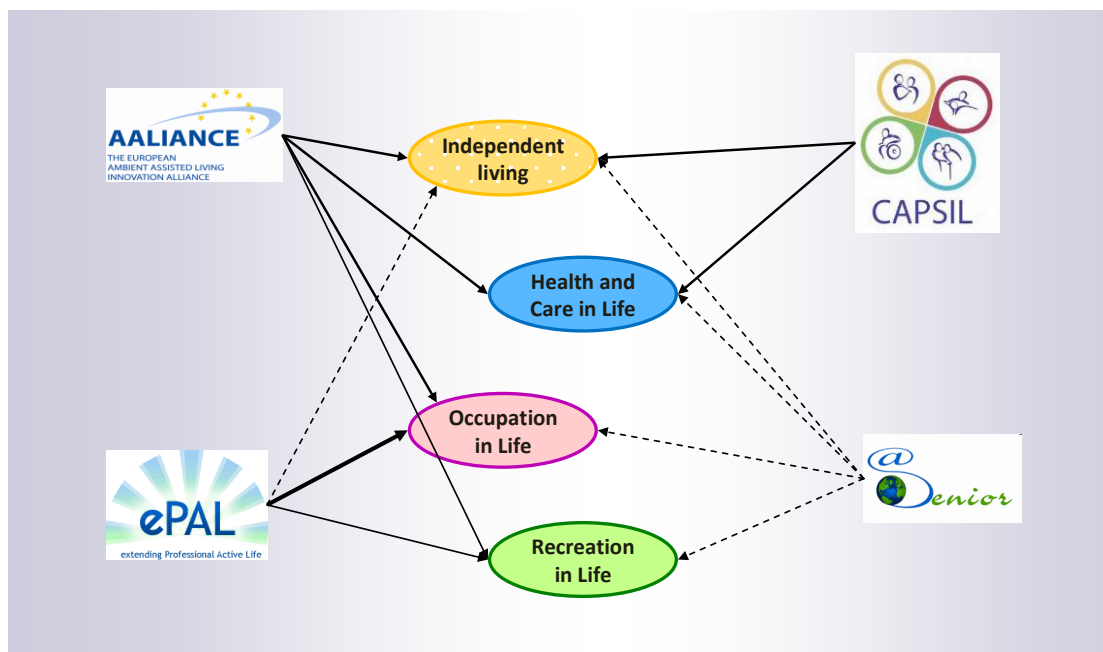


Figure 11: Feeder Projects and their Input to the Life Settings

In the following paragraphs, each life setting addressed in BRAID is described.

1.3.1.1 Independent Living

“Independent Living” is identified as an important life setting for any ageing population. This life setting is about the very basic needs of a person in everyday life activities that are easily taken for granted. BRAID is looking at how technology can be of support once assistance is needed for these activities. Examples of aspects of independent living include:

- Access to relatives, carers and the community,
- Daily life activities, such as house-keeping, buying food, and personal hygiene care among others,
- Mobility and transport,
- Privacy, security and safety and a suitable environment.

It should be noted that “independent” living by no means advocates being isolated. However, we believe that an ageing citizen as much as possible should be supported in living independently and autonomously, in order to have the choice how much to depend on others.

Figure 12 shows a smart home, a topic that is intuitively associated with this life setting. The main examples of technologies to be applied for independent living include:

- Assistive Technologies at home,
- Living status monitoring,
- Agenda manager,
- Companion robots,
- Mobility assistance (e.g. driving),
- Well-designed human-machine interfaces that facilitate the use of technologies in general.

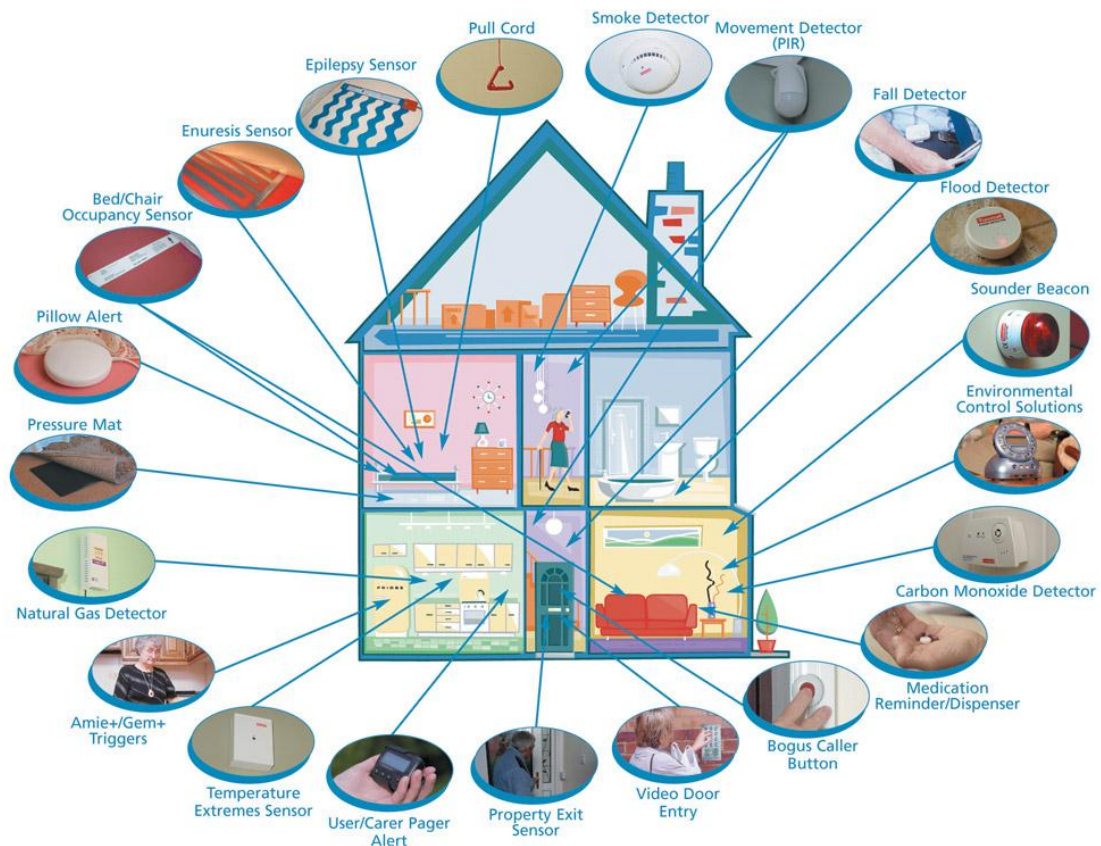


Figure 12: A smart home [LifeLink, 2011]

Beyond the “living” itself, another important need is to be cared for and to stay healthy or to preempt and counter sickness. This need is covered by the next life setting discussed, the health and care in life.

1.3.1.2 Health and Care in Life

The next considered life setting is “Health and Care in Life”, which addresses how technology can assist in health and care-related activities. This life setting has been renamed from “Healthy Living” (in D4.1) after discussions with stakeholders, because its main topic is not only leading a healthy life style but also to care for elderly’s physical and mental well-being, e.g. to exercise, and preventing sickness as well as interventions related to health issues. The activities of concern are again very individual for every ageing citizen. Example areas include:

- Self-management and/or neglect (e.g. exercise, nutrition),
- Engagement with primary care (e.g. carers, pharmacist),
- Engagement with acute care (e.g. emergency admission, stay in hospital).

Following are some example applications of technologies for this life setting:

- Remote health monitoring (see also Figure 13),
- Prescriptions reminder,
- Exercise assistant,
- Emergency assistance.

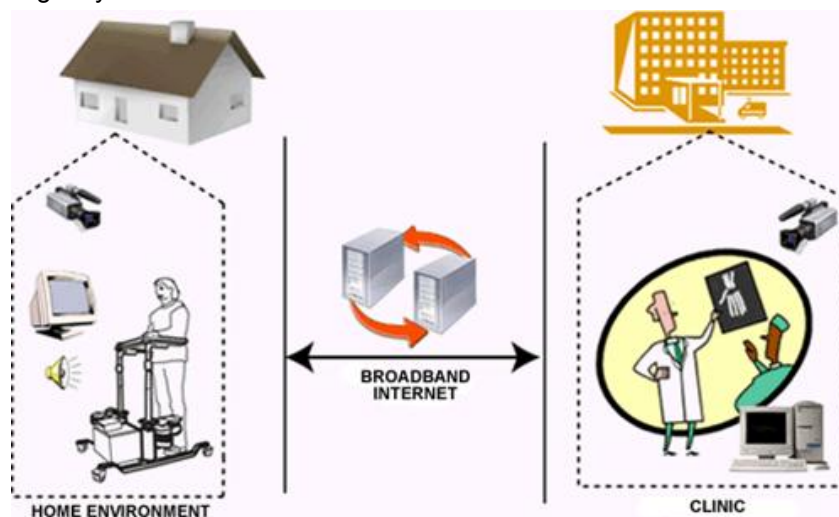


Figure 13: Remote health monitoring

Given an independent and healthy life, the next life setting is occupation in life.

1.3.1.3 Occupation in Life

“Occupation in Life” is the third life setting considered. It addresses how technology can support the continuation of professional activities either with a salary or on a voluntary base. Similar to the other life settings, occupation in life can look very different for each individual, depending on the background work structure, sector, individual goals, capabilities, flexibility, opportunities, and functional ability. Some examples of cases to be considered under this life setting for BRAID include:

- Adaptation of working conditions,
- Mentoring / Coaching / Consulting,
- Team work,
- Inter-generational team work (see Figure 14),
- Leaving a legacy.



Figure 14: Inter-generational team work

Obviously, there is some overlap between this and other life settings, as for example a certain level of independence (e.g. mobility, communications) and health (e.g. cognitive abilities) are required as the base for extending professional life of seniors. Moreover, activities in this life setting also feed back to the other life settings, e.g.: Maintaining partial involvement in the society through a profession helps to create a more balanced life and a sense of social belonging. Both of these points are also valid for the next considered life setting, the recreation in life.

1.3.1.4 Recreation in Life

The last considered life setting is “Recreation in Life”. It addresses how technology can facilitate socialization and participation of ageing citizens in leisure activities. This includes a big range of activities where technology can be applied, as for example including:

- Crafts and hobbies,
- Sports and physical activity,
- Entertainment, taking part in cultural life and playing games,
- Family interaction and socializing (see Figure 15),
- Travel & leisure,
- Political engagement,
- Spiritual and faith groups,
- Life-long learning & passing on personal wisdom.



Figure 15: Using the computer for socializing

In the following section, the subject of scenario building is described. Building scenarios plays an essential role when it comes to understanding the challenges of ageing citizens in Europe that should be addressed by the BRAID vision.

1.3.2 ICT & Ageing Scenarios

This section summarizes the development of scenarios for BRAID. A detailed description of both the scenario building process and the results can be found in section 4.2 of BRAID deliverable D4.1.

Scenarios are widely used by organizations of all types to understand different ways that future events might unfold. They can help people explore what the future might look like and the likely challenges of living in it [Shell International BV, 2008]. Developing scenarios is most often applied in policy planning, organizational development and generally when organizations wish to test some strategies against uncertain future developments. Usually, scenarios are fictitious descriptions of actions and events. They project an image of the future, using a foreseen course of actions, events or situations.

BRAID scenarios are built to provide understanding, orientation, direction and consensus on diverse future possibilities regarding the active life of ageing citizens for the life settings that have been identified. According to the scenario typology by Börjeson et al (2006) (see Figure 16), the BRAID scenarios are “explorative”, helping to provide answers to what can happen in terms of future development related to the life of ageing citizens. They are also of “normative”, transforming, nature, as for instance they help to visualize how targeted visions, e.g. in elderly independent living, could be reached. For details about this taxonomy of scenario types, please refer to BRAID deliverable D4.1, section 4.2.1.

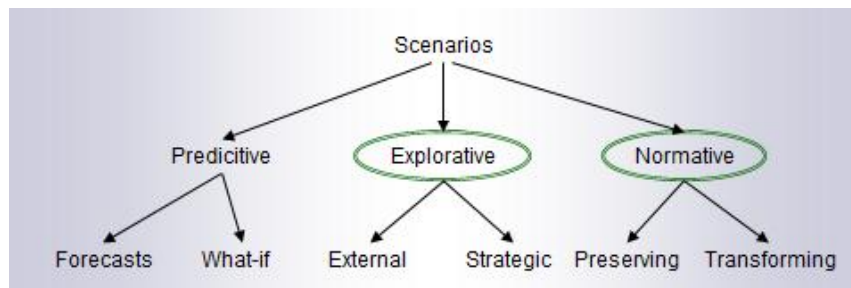


Figure 16: Scenario typology (Börjeson et al., 2006)

Another distinction of scenarios types can be considered:

Strategic Scenarios are abstract descriptions or characterizations of possible future situations and basically consist of a set of constraints (limits) of some selected variables. Examples could be “scenario of a deep economic crisis”, “scenario of an increasing demographic unbalance”, etc. Such strategic scenarios are useful as an auxiliary tool *during the process of roadmapping*.

Operational Scenarios are “stories” that illustrate some major aspects of a possible future. They typically include the identification of some significant events, the main actors and their motivations, and a description of how the “world” works in that future situation. Such scenarios do not intend to be very comprehensive, but rather try to illustrate typical cases. Therefore they are mainly an *effective vehicle to communicate with stakeholders*. These scenarios are mainly of a transforming nature, in terms of the previous taxonomy.

In the visioning phase of BRAID, the focus is on the operational scenarios, with the strategic scenarios to be developed in a subsequent phase, when needed.

1.3.2.1 Scenario building methodology

The scenarios with the described characteristics are built in a set of activities. The *BRAID scenario building methodology* presented in Figure 17 consists of the following steps:

1. Collect scenarios from previous projects and other sources;
2. Classify scenarios according to the four life settings;
3. Assess existing scenarios and identify gaps;
4. Extend / merge / create new scenarios; and
5. Elaborate scenario descriptions.

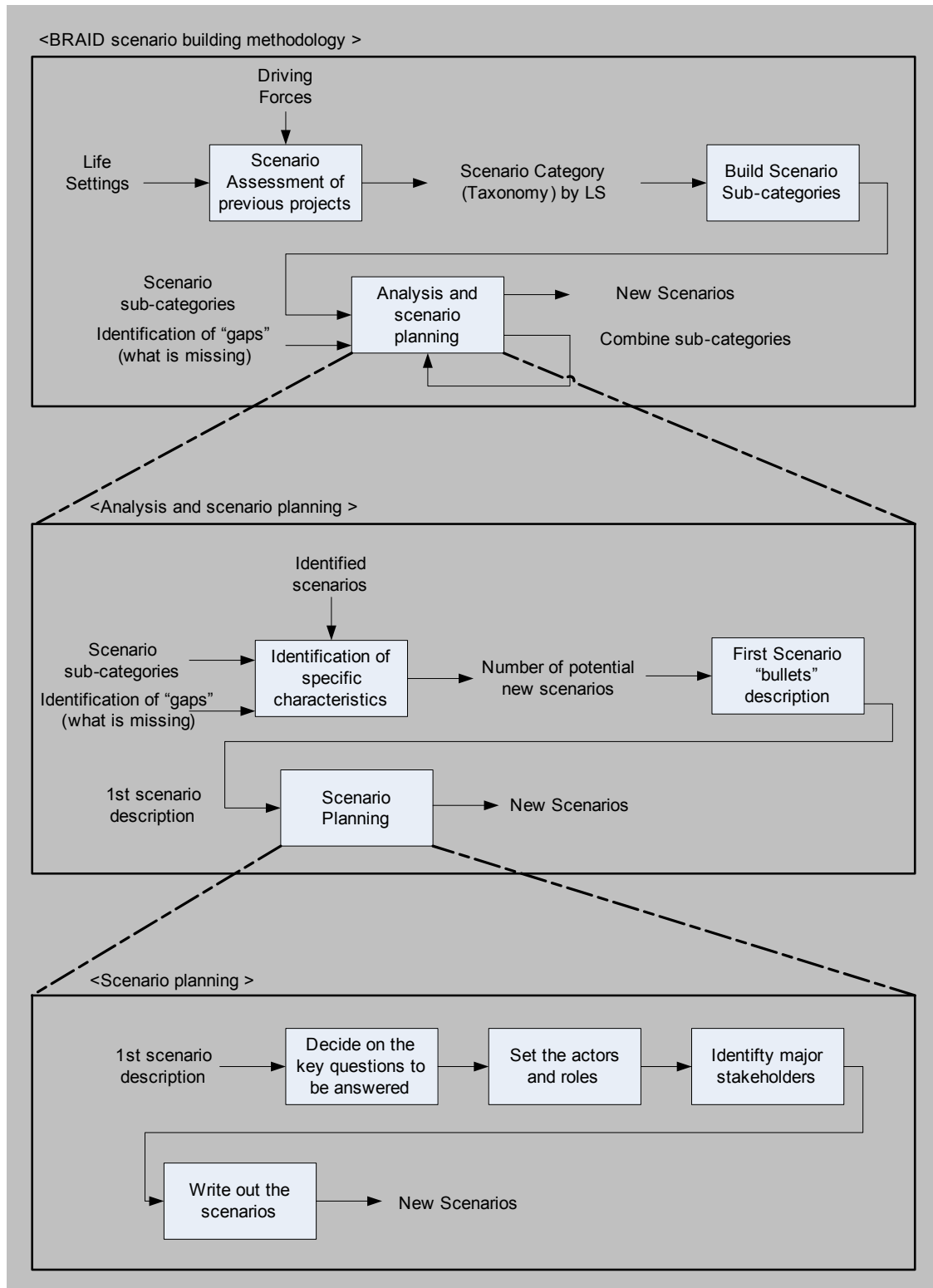


Figure 17: BRAID Scenario Building Methodology

In the first step, an inventory is made of which scenarios exist in the feeder projects. In BRAID deliverable D4.1, tables 28 and 29, an overview of the scenarios that were collected from the four feeder projects involved in BRAID (i.e. AALIANCE, CAPSIL, ePAL, and SENIOR) is given. Moreover, it is described how the work in the four base feeder projects in one way or another relates to the four focus areas of the life settings, as defined in BRAID (occupation in life, health and care in life, recreation in life, and independent living). It should be noticed that, as mentioned in the previous section discussing the life settings, each project has only

partially addressed some of the aspects related to each life settings, in other words BRAID's four life settings are more comprehensive than what is considered in each project.

Subsequently, after analyzing and classifying the scenarios from the input projects, as well as others available in the literature, a scenario taxonomy was created taking into account the four life settings. In deliverable D4.1, table 30, the scenarios collected from the feeder projects are categorized into BRAID's scenario taxonomy.

1.3.2.2 Analysis and scenario planning

Applying the scenarios' categorization in the taxonomy against the scenarios which could be collected from the feeder projects, some "gaps" were identified indicating those scenarios which were not covered by previous projects. Therefore, a few new scenarios were developed for BRAID, some of which based on the previous scenarios, others created from scratch. Table 1 includes the lists all BRAID scenarios, as categorized in two levels. The "flowers" in Figure 19 represent a high-level summary of all scenarios which are developed for each corresponding life setting. The categorization and full description of the set of 34 scenarios can be found in tables 2 to 25 within the BRAID's deliverable D4.1, as well as within the recent booklet of ICT & Ageing Scenarios [Camarinha-Matos et al, 2011], for which the cover is shown in Figure 18 below.



Figure 18: Developed booklet of "ICT & Ageing Scenarios"

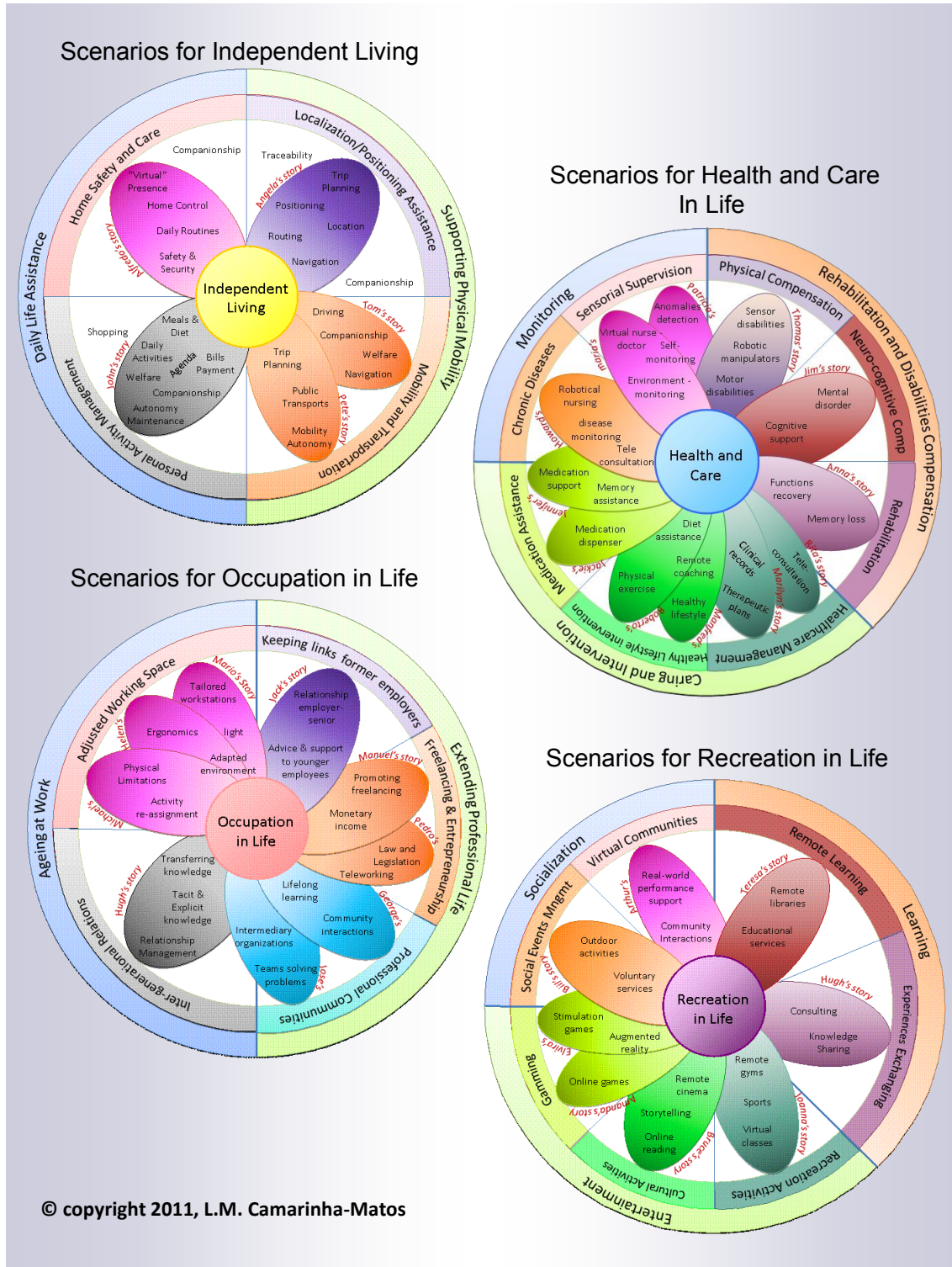


Figure 19: A Visual representation of different scenarios developed per life setting

As described in details in Deliverable D4.1, for each of the four Life Settings, a number of scenarios are developed. See for example in Figure 19, that for Health and Care in Life, there are 12 scenarios developed (as indicated by the petals of the Health & Care flower, while these scenarios are each further named (in Red), briefly characterized (as indicated inside each petal), and categorized in two levels, as indicated both by the circles around the flowers, as well as the color code separating different petals from each other.

Table 1: Summary of BRAID’s Scenarios per Life Setting and (Sub-)Category

Life Settings	Category	Sub-category	BRAID Scenario Title
Independent living	Ambient Assisted living (Provide a secure environment based on the utilization of environmental sensors assistive technology, and user friendly communications)	Home safety and care (environmental sensors and assistive technology, communication channels, companionship)	Alfredo’s Story
		Personal activity management (meals and dietary help, shopping, agenda reminding, interaction with public institutions)	John’s Story
	Supporting physical mobility (Navigation support for mobile location, walking, driving, ... and traveling), including services integration (e.g. integrated public transports)	Localization/positioning assistance (where am I, what is near me, which way to go), both indoor and outdoor	Angela’s Story
		Mobility and Transportation (Driving, Public transportation, walk with companion dog or robot, wheelchair)	Pete’s Story
			Tom’s Story
Health and Care in Life	Monitoring (Technological means for monitoring people’s health condition, through sensorial information, looking for anomalies or out of pattern behaviors. The monitoring can be performed either at home or outdoors)	Sensorial supervision (wearable monitoring devices, self-monitoring, remote monitoring)	Maria’s Story
			Patricia’s Story
		Monitoring of chronic diseases	Howard’s Story
	Caring and Intervention (Supply technological assistance in situations of illness, injury or other unhealthy)	Medication assistance (support to remember medication, medication dispenser, memory assistance)	Jennifer’s Story
		Healthy Lifestyle intervention (Helping people to maintain healthy lifestyle: diets, physical exercise, etc.)	Jackie’s Story
		Roberto’s Story	

Life Settings	Category	Sub-category	BRAID Scenario Title
Health and Care in Life	Rehabilitation and Disabilities Compensation (Provide technological means to support the rehabilitation of functional limitations and disabilities compensation)		Manfred's Story
		Healthcare management	Marilyn's Story
		(clinical history, therapeutic plan management, tele-consultation)	Rita's Story
		Physical compensation	Thomas's Story
		(sensorial disabilities compensation, motor disabilities assistance)	Jim's Story
		Neuro-cognitive compensation	Anna's Story
Occupation in Life	Ageing at Work (Facilitate continuation in workplace while going older)	Adjusted working space (adapted environment, ergonomics, light, robotic helper...)	Mario's Story
			Helen's Story
			Michael's Story
	Extending Professional Life (Facilitation of an active life after retirement)	Inter-generational relations	Anthony's Story
		(ex: young employees help senior employees to leverage technology while senior help young employees to gain knowhow)	Jack's Story
		Keeping links with former employers	Manuel's Story
		Freelancing and entrepreneurship	Pedro's Story
			George's Story
		Working in professional communities	José's Story

Life Settings	Category	Sub-category	BRAID Scenario Title
Recreation in Life	Socialization (Staying socially active through technological solutions that are geared toward social networking and community building, improving in this way quality of life reducing social isolation)	Participation in Real World and Virtual Communities	Arthur's Story
		Social events management (Including outdoor activities and volunteering activities, time bank)	Bill's Story
		Gaming (Brain stimulation games, online entertainment games (ex: bingo, cards))	Elvira's Story Amanda's Story
	Entertainment (Amusement, diversions and distractions with the intention to give pleasure and supported by technological means)	Cultural activities (Online reading and storytelling, Remote attendance to bands shows, cinema, theatre, etc)	Bruce's Story
		Recreation activities (Specialized and remote gymnasiums (attending classes from home) and sports, etc)	Joanna's Story
		Remote Learning (Remote libraries access, painting, Internet, etc)	Teresa's Story
	Learning (Promotion and provision of training and education services through technological means)	Experiences exchanging and knowledge sharing (Remote teaching / consulting (highlight intergenerational relationships and the skills sharing))	Hugh's Story

In the following section (Section 1.3.3), the establishment of drivers and trends is addressed.

Task Group 2 – Establishing Drivers and Trends

Essential for building a vision is to have an understanding of the most important players or forces in the current developments of the market and society. In this direction, for the BRAID visioning process the following two aspects are analyzed:

1. The main relevant driving forces (or drivers) in the society and market,
2. Their related trends, pointing to their observed general course and direction in the environment of BRAID.

Each trend is either possibly supporting or impeding the movement of the market and society towards achieving the vision. Therefore, the specification of the vision shall consider the identified drivers and trends.

In the following sections, the analysis of the BRAID drivers and trends is summarized. Much more detailed analysis of these can be found in BRAID deliverable D4.1, chapter 5.

1.3.3 Driving Forces for ICT & Ageing Vision

The main driving forces, “drivers for change”, or drivers (for short), in the environment of the BRAID are the main factors in the contemporary world which directly or indirectly affect the lives of senior citizens. These drivers may have either a positive or negative influence on achieving the desired vision of BRAID. Therefore, as a part of the the visioning process of BRAID, the main drivers for the vision are identified in order to comprehensively tackle their potential influences on achieving a desired vision for BRAID. After the identification of BRAID’s drivers, these drivers were further analyzed based on the generated outcomes in the feeder projects.

Developments in the society and market which will ultimately lead to the achievement of BRAID’s vision will be driven by the following five main groups of drivers (see Figure 20) which are considered for better study of the BRAID environment, namely:

1. *Technological drivers* (e.g. infrastructure and network developments, ambient and assistive technologies, supporting tools and environments to cope with technological advances)
2. *Societal drivers* (e.g. addressing demographic changes, new mechanisms for social cohesion, promoting ethics and protecting societal values)
3. *Organizational drivers* (e.g. organized social systems, organized training and professional activity support, and organized social associations)
4. *Economic drivers* (e.g. addressing care services, new business aspects and models, business value system and support service for occupational involvement)
5. *Regulatory drivers* (e.g. policies and regulations related to employment policies and protection of individual rights, set by the EU, national and regional organs)

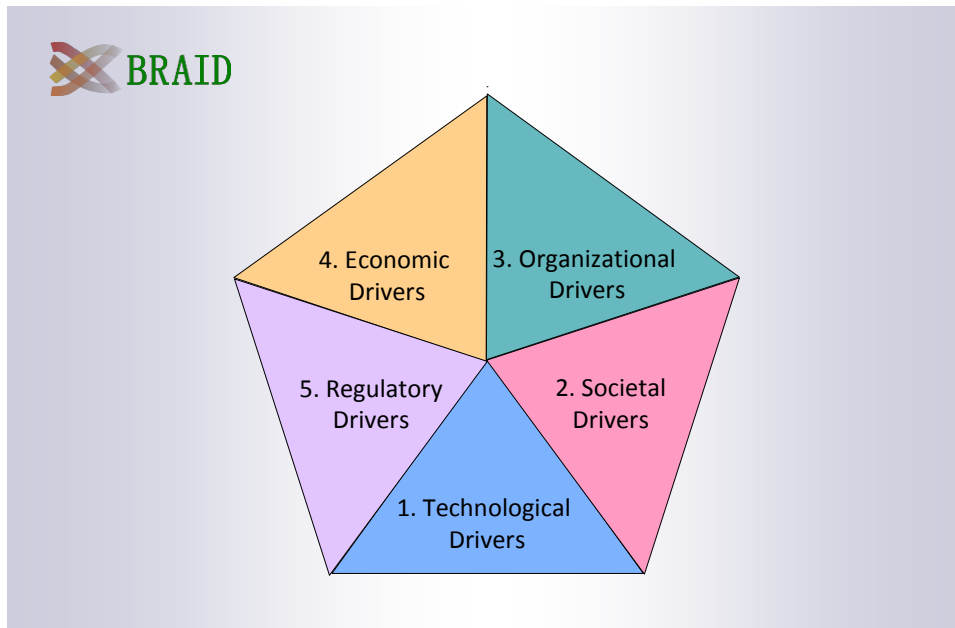


Figure 20: BRAID key drivers

1.3.4 Focused Trends Specification

For each driver, the current developments or trends are analyzed in order to understand in which direction current developments are going. Each of the trends can inhibit or support achieving the vision. Therefore, for building the vision, analysis and understanding of the trends related to each driver for the BRAID environment is assisting both in the building and validation of the planned scenarios, as well as in building BRAID’s vision for the future. For BRAID, the trends are collected from the documents of the four feeder projects and completed with the output of WP1.

The trends identified for BRAID are listed in BRAID deliverable D4.1, table 27. An overview of the trends is given in the trend taxonomy in Table 2 below. The left-most three columns describe the categorization of the defined trends, i.e. the taxonomy for these trends. This taxonomy represents the trend categories/sub-categories within each of the five drivers. The + and – under to the short trend-names, e.g. under the T1, and T2, etc. represents if that trend has a positive or negative influence on achieving the vision of the BRAID. In some cases a trend may have both some positive and some negative influence, which is indicated by +/-.

Given the set of BRAID trends established in WP4 in relation to each of its five drivers, we have identified that the importance of each trend varies in different contexts (i.e. for different life settings). Therefore, not every trend will have the same relevance for all scenarios and the vision which will be established for each of the four life settings. As a result, all of the defined trends are crossed against all of the four life settings. Namely, to analyze the impact of a driving force DF1 on a life setting LS1, we consider the importance and relevance of each of its trends, e.g. T1 to Tn of DF1, on LS1. Our forecast of the impact level of all trends on the life settings is given in the right-most 4 columns of this table, one for each life setting:

- IL = Independent Living,
- HL = Health and Care in Life,
- OL = Occupation in Life, and
- RL = Recreation in Life.

Please also note that each shade of the green color stands for an estimated grade of impact of the respective trend on the respective life setting. As such the colors go from white = *no impact*, to dark green = *high impact*.

Table 2: Trend Taxonomy

Life settings: IL - Independent living, HL – Health and Care in Life, PL – Occupation in life, RL – Recreation in life				Degree of impact:				
				High	Medium	Low	None	
Driver	Trend category (trend taxonomy)	Sub-category	Trend	IL	HL	OL	RL	
TECHNOLOGICAL	Infrastructure and Networking (Practical availability and accessibility of infrastructure and physical/virtual networks)	Connectivity & Use	T1 +	Increasing availability and speed of broadband access				
			T2 +	Increasing availability of Internet access				
			T3 +	Energy harvesting to improve power management of pervasive devices				
		Mobility in Access	T4 +	Increasing availability of mobile computing				
			T5 +	More applications running on Cloud Computing				
		Networking	T6 +	Ubiquity of Social Networking				
			T7 +/-	Advances in theoretical foundation and technological developments for Collaborative Networks (Secondary Users)				
			T8 +/-	Collaboration support services for teams' formation and management (Secondary Users)				
			T9 +	Progress on standardization and interoperability				
		Base for Communication	T10 +	New communication capabilities				
			T11 +	Communication privacy support				
	T12 +		Progress in sensing techniques - base technologies for monitoring					
	Ambient Technologies (Technologies available through the environment)	Monitoring Technologies	T13 +	Advances in converging technologies				
			T14 +	Applying reasoning and context awareness				
			T15 +	Advances in telemedicine				
			T16 +	Increase in development of smart homes and spaces				
			T17 +	Advances in assistive/adaptive technologies				
		Assistive Technologies & Support Services	T18 +	Progress in assistive communication technologies				
			T19 +	Progress in robotics				

<i>Life settings: IL - Independent living, HL – Health and Care in Life, PL – Occupation in life, RL – Recreation in life</i>	<i>Degree of impact:</i>	High	Medium	Low	None
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TECHNOLOGICAL	Supporting Tools and Environment (Offering products and services required by the user)	Design Approaches for Services & Products	Assistive Technologies & Support Services						
TECHNOLOGICAL			T20 +	Emergence of design for all					
			T21 +	“Configure yourself” based philosophy					
			T22 +	Easily adaptable and customizable user interfaces					
			T23 +	Applying affective computing and emergence of context aware enriched environments					
		T24 +/-	Personalization and profiling						
		T25 -	Difficulty in coping with advances in technology						
		T26 +	Beyond Compensation: Preventing Cognitive Decline						
		T27 +	Expanding Accessibility of Life-Long Learning Technologies						
SOCIAL	Demographic Changes (side effects)		S1 +/-	Increase in life expectancy and its effect on living situation					
			S2 +/-	Changes in the working force					
			S3 +/-	Economic globalization will continue to intensify the links and relationships between regions					
			S4 -	Patterns of urbanization will continue to erode sustainable rural lifestyles					
			S5 +	Technological convergence will continue to merge multiple media types onto new hybrid devices					
	Social Cohesion (stay involved)		S6 +	New organizational structures for social cohesion					
			S7 +/-	New mechanisms to enable social cohesion					
			S8 +	Advances frameworks to support social knowledge and experience exchange					
	Values		S9 -/+	Promoting life-long learning					
			S10 +	More emphasis on gender issues					
			S11 -/+	Stronger effects of medical developments on society					
			S12 -	Global warming will continue to drive innovative societal and technological responses for environmental sustainability					

<i>Life settings: IL - Independent living, HL – Health and Care in Life, PL – Occupation in life, RL – Recreation in life</i>	<i>Degree of impact:</i>	High	Medium	Low	None
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ORGANIZATIONAL							
ORGANIZATIONAL	Organized Social Systems	O1 -/+	Pressure on social systems to get organized				
		O2 +	Emergence of social welfare mechanisms				
		O3 +	Changes in organization of healthcare				
	Social Associations	O4 +/-	New financial support approaches for associations and other intermediaries				
		O5 +/-	Emerging organizational culture embracing relationships between senior retired professionals and pre-retired (active) professionals				
		O6 +/-	Networking models for elderly communities' involvement with the socio-economic system				
		O7 +	Convergence of Real world and virtual social networks, clubs and communities of interest				
		O8 +	Increasing Seniors advocacy and political activism				
	Professional Knowledge of Seniors	O9 +/-	Increase in using knowledge and skills of seniors to earn a living, volunteering in society and stimulate innovation				
		O10 +/-	Increase in seniors' access to (re)training services				
ECONOMIC	Care Service Businesses	E1 +	Increase in provision of individual and integrated services for the elderly				
		E2 +	Increase in importance of care services				
		E3 +	Advances in organized care services				
	Business aspects and models	E4 +	New human resource policies				
		E5 +	New forms of intermediate organizations to provide efficient brokerage				
	Value System	E6 +/-	Support for user-generated knowledge content				
		E7 +/-	Tools supporting the process of value creation and extension of professional/working life				
	Business Support	E8 +/-	Contractual and cooperation agreements, including negotiation support				
		E9 +	Marketing and brokerage services				

<i>Life settings: IL - Independent living, HL – Health and Care in Life, PL – Occupation in life, RL – Recreation in life</i>	<i>Degree of impact:</i>	High	Medium	Low	None
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REGULATORY	Employment Policies	R1 +	Changes in employment and retirement policies				
		R2 +/-	Emerging global regulations and policies regarding collaboration of businesses with senior professionals				
	Protection of Individual Rights	R3 +	Emphasis on protection of users' data				
		R4 -	Emerging unfair commercial practices				
		R5 -	Drifting away from individualistic consent				
		R6 +	Attention to patient rights				

Task Group 3 – Elaboration of the 1st BRAID Vision

1.3.5 The Preliminary BRAID Vision & its Instantiations (December 2010)

This subsection gives only an overview of the establishment of the first vision of BRAID in task group 3. For detailed discussion and the first version of the BRAID’s vision itself, please refer to BRAID deliverable D4.1, section 6.

As introduced earlier, BRAID aims at building a holistic vision that covers different aspects of the life of an ageing person. For this purpose, the approach described in section 1.2 of this deliverable was applied, consolidating the results from the four feeder projects, each focused on certain specific aspects of ageing. In this process, all needed relevant ingredients for visioning were collected. These ingredients were the base for the extraction of suitable elements for defining a first statement of the desired vision for BRAID.

The development of the vision for BRAID constituted two steps. Firstly, the overarching consolidated core vision statement for BRAID was developed. Secondly, this vision was instantiated for each of the four life settings (see Figure 21). This means that for each of the life settings, a more specific, concrete and detailed vision was developed focusing on the aspects relevant to that specific area (or setting) of the life of ageing European citizens.

The 1st version of the five vision statements is presented in section 6 of BRAID deliverable D4.1 and shown in Appendix 1 of this deliverable for reference purposes. This 1st version represents the state of these five vision statements before they went through the process of validation, consensus building and refinement, as described in details in the following sections. The final vision of the five vision statement of BRAID is presented in section 4.2 of this document.

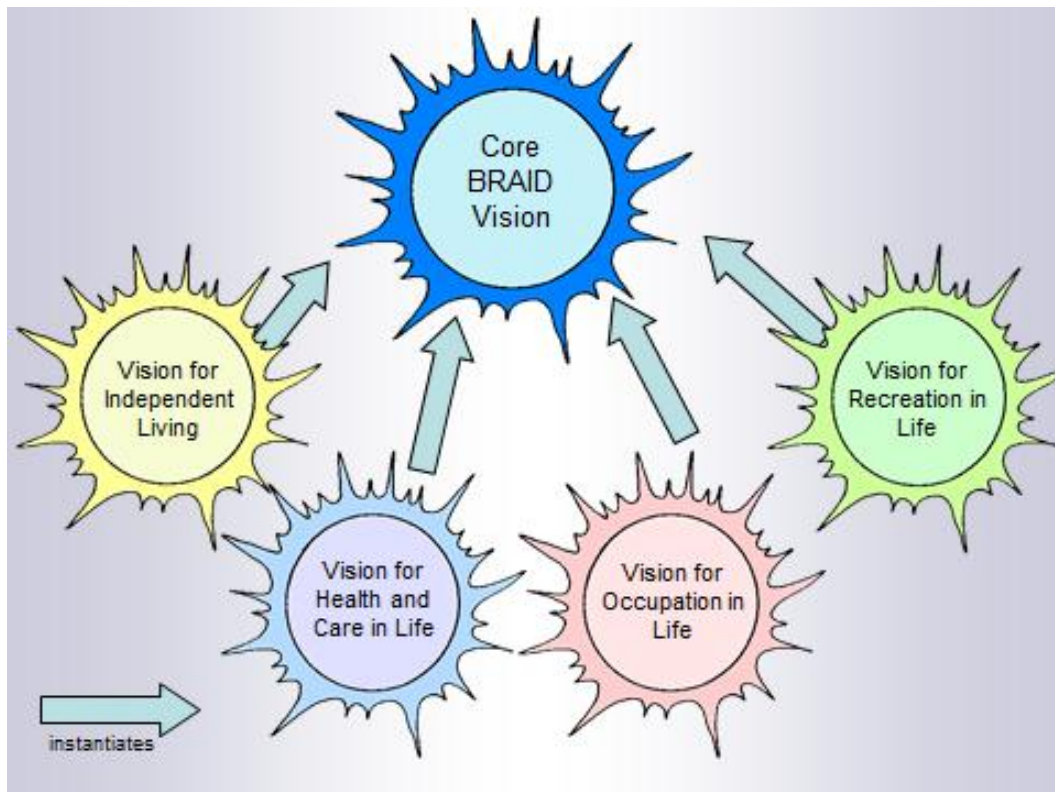


Figure 21: Instantiating the Core BRAID Vision to its four Life Settings

1.3.6 Relevance of Communities to Ageing Citizens

During the work on the first visioning phase of BRAID, it was clearly realized that communities, consisting of ageing citizens as well as other relevant stakeholders (e.g. relatives, care providers, etc.), play an important role in the lives and well-being of ageing citizens. This is why special attention is further paid to the relevance of collaborative networks to the visions for the BRAID environment. The preliminary conclusion from the 1st visioning results indicates that for all of four life settings, communities are relevant. Examples of cases where collaborative networks will be helpful include:

- For Independent Living:
 - Access to community (family, friends) and service providers, e.g. for shopping,
 - Integrated care services;

- For Health and Care in Life:
 - Integrated physical health-care services,
 - Community support for emotional health;

- For Occupation in Life:
 - Joining a Community of Active Senior Professionals increases the chance to be actively engaged in occupational activities;

- For Recreation in Life:
 - Involvement in community activities (cultural, political, leisure, etc),
 - Inter-generational interactions.

A first discussion of important relevance of communities to BRAID's vision is given in BRAID deliverable D4.1, section 6.3. Later on in this deliverable, in section 4.3.2, this discussion will be further taken up.

Starting with the following chapter, the second phase of the visioning process is documented. The first section in the chapter addresses the internal testing and validation of the 1st BRAID vision by the consortium members.


2 Internal Test and Validation of the 1st BRAID Vision

After the elaboration of the preliminary vision for BRAID as presented in BRAID deliverable D4.1, the next step is to test and validate it. In this stage, representatives from different groups of stakeholders are invited to be involved in assessing the vision and, providing improvement and suggesting extensions to specified vision statements. The main focus of the validation stage, is analyzing whether the vision is:

- Capturing the currently defined, but not yet achieved main objectives in the society;
- Addressing a number of future plausible desired objectives for the society which are reachable through influencing the existing driving forces, once considering the current trends, on these drivers;
- Supporting all defined potential scenarios related to different life settings of ageing citizens, which are also feasible to implement.

For testing and validating the 1st BRAID vision, first an internal intensive and focused testing and validation visioning workshop was conducted by UvA from WP4 with the BRAID project consortium members representing expert stakeholders, as described below.

2.1 Internal In-Depth Testing and Validation-Visioning Workshop in Brussels, Belgium

Type: Internal Testing and Validation Visioning Workshop		
Date and Location: December 7 th , 2010 in Brussels, Belgium		
Attendance:		
Members of the BRAID project consortium:		
Group 1	Group 2	
Luis Camarinha-Matos	Christian Wehrmann	
Holly Ashton	Miriam Brielmann	
Benjamin Knapp	Kush Wadhwa	
Joanne Finnegan	Rachel Finn	
	Rodd Bond	
Session 1: Occupation in Life Moderator: Luis Camarinha-Matos Editor: Holly Ashton	Session 1: Independent Living Moderator: Christian Wehrmann Editor: Miriam Brielmann	
Session 2: Health and Care in Life Moderator: Benjamin Knapp Editor: Joanne Finnegan	Session 2: Recreation in Life Moderator: Kush Wadhwa Editor: Rodd Bond	
Hamideh Afsarmanesh (coordinating discussions and addressing questions for both groups and sessions)		
Agenda:		
8:30 Opening		
- Presentation of vision elements, rough drafts of vision instantiations, and deliverable D4.1 (UvA – Miriam Brielmann & Hamideh Afsarmanesh)		

10:15 Working session

- Discussion of **drivers and trends & scenarios** in relation to 2 instantiated visions (the **OL and IL**, each within one groups), with a break (10:15 to 10:30)

13:00 Lunch

14:00 Plenary: Feedback from the 2 groups & 1st reflection on core BRAID vision

15:15 Working session

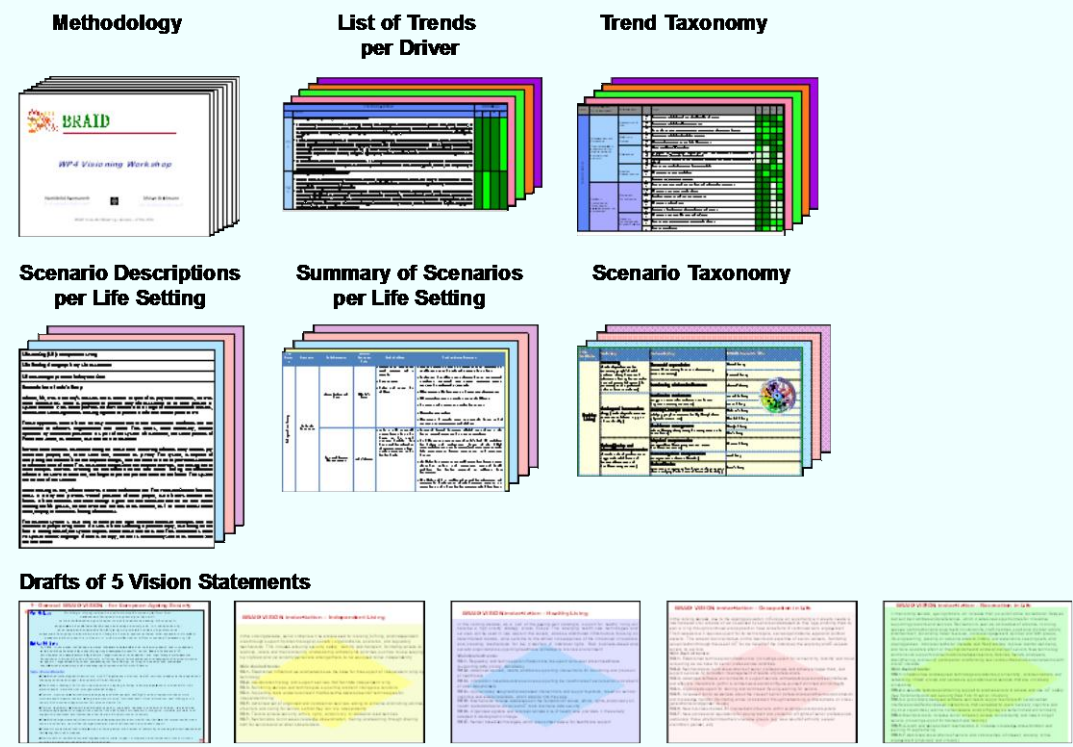
- Discussion of drivers and trends & scenarios in relation to 2 instantiated visions (the **HL and RL**, each within one groups), with a break (15:00 to 15:15)

18:00 Plenary: Feedback from the 2 groups & 2nd reflection on core BRAID vision

19:00 Next steps and action points (UvA - Hamideh)

19:30 Closing

Prepared and distributed Materials:



Description:

For the first presentation of the visioning results, and particularly for discussion, validation and improvement of the vision, UvA from WP4 held an internal **testing and validation visioning workshop** in Brussels on December 7th, 2010, with the BRAID consortium members. In the beginning of the workshop, UvA presented its systematic visioning approach, and the steps which were followed to build the vision for BRAID, as well as a preliminary draft of the 1st BRAID's core vision statement and its four instantiations into the life settings IL, HL, OL, and RL.

This presentation was followed by two intensive group working sessions, one in the morning, and the other one in the afternoon. During both of these sessions the consortium members intensively discussed the visioning results in two groups, each of them focusing on the products of one of the Life Settings. Subsequently, the collected feedback was presented in the plenary, and the group's editor put the outcome of the discussion into the improved version of the documents, which were partially addressed in deliverable D4.1, including the 1st BRAID's vision.

Conclusions:

The internal testing and validation workshop in Brussels validated the 1st vision while providing useful feedback for improving the visioning results, and specifically the 1st BRAID vision. The workshop also brought the interaction within the project consortium to higher level, by involving all partners into the discussion. Therefore, the workshop was very fruitful.

Impressions:



2.2 Further Internal Activities – Barcelona, Spain

In addition to this first intensive BRAID's *internal testing and validation* visioning workshop in Brussels which was fully dedicated to the vision, a second consortium meeting also included a visioning session. This was the consortium meeting (the picture above) which was mainly focused on the work of planning the actions for the BRAID roadmap, but within which in a dedicated session, further visioning process results were also discussed.

3 External Consensus Building – Consultation and Dissemination Workshops


In order for the vision to get full support from visionary stakeholders in the society, it first needs their acceptance. Consensus building is a process that involves different groups of stakeholders to discuss the subject at hand together and to make decisions together, and is the most powerful means to reach different stakeholders and have them involved in multiplying new ideas and agree on making final decisions together.

For BRAID, the main activity for building consensus on the vision, is conducting stakeholder workshops in which the participants are first presented with the visioning process and visioning results, and then moderated to discuss the current vision and generate feedback about it. In this chapter, first the two **in-depth consensus building visioning workshops** held in Barcelona, Spain, and Pordenone, Italy, are addressed and then the **consultation and discussion visioning workshop** in Copenhagen, Denmark, and the **remote validation survey** which was conducted with experts online are reported.

3.1 In-Depth Consensus Building Visioning Workshops

One way of building consensus on BRAID’s vision was to hold in-depth workshops with external stakeholders. Two in-depth visioning sessions were organized and run by WP4 (UvA) during the external stakeholder workshops in Barcelona, Spain, and Pordenone, Italy. The main purpose of both visioning workshops was to collect feedback from the stakeholders on the visioning results generated in WP4, in order to assess and improve the BRAID vision statements. In this section, some details about these workshops are given. The collected feedbacks were analyzed, processed and included in the enhanced final BRAID vision statements (see chapter 4).

3.1.1 In-Depth Barcelona Experts & Stakeholder Workshop

Type: In-Depth Consensus Building Visioning Workshop			
Date and Location: February 10th, 2011 in Barcelona, Spain			
Attendance:			
Group 1	Group 2	Group 3	
Ilenia Gheno	Filippo Cavallo	Sergio Sayago	
Pekka Ala-Siuru	Josep Blat	Francesca Cavallaro	
Jaume Figueras Solanilla	Maria Jose R. Malmierca	Carmen Pastor	
Sara Doménech	Soledad Ballesteros	Andreu Català	
Daniel Hernández	Àtia Cortés	Susan Ferreira	
Josep Casas	Maria Hortensia Álvarez	Cristian Barrié	
	Valeria Righi		
Ben Knapp (Facilitator)	Kush Wadhwa (Facilitator)	Christian Wehrmann (Facilitator)	
Hamideh Afsarmanesh (coordinating discussions and answering questions for all groups)			
Detailed information on the participants is listed in Appendix A3.1.			

Agenda:

- 14.00 Introduction to BRAID Roadmap - *Luis M. Camarinha-Matos – Uninova*
- 14.20 Introduction to BRAID Vision - *Hamideh Afsarmanesh – University of Amsterdam*
- 14.45 Parallel Working Groups
 - Vision statements validation:
 - Group 1:** BRAID external advisory board members + invited stakeholders
Facilitator: *Ben Knapp - QUB*
 - Group 2:** BRAID external advisory board members + invited stakeholders
Facilitator: *Kush Wadhwa - Global Security Intelligence*
 - Group 3:** BRAID external advisory board members + invited stakeholders
Facilitator: *Christian Wehrmann – VDI/VDE*
 - Disruptive scenarios design and impact analysis on Vision:
(identify possible disruptive scenarios and discuss their impact on vision)
 - Group 4:** BRAID consortium members
Facilitator: *Luis M. Camarinha-Matos – Uninova*
- 16.00 Coffee Break
- 16.20 Parallel Working Groups - Preparation of synthesis
- 16.45 Plenary: Feedback from Working Groups and discussion
- 17.30 Closing

Prepared and distributed Materials:



Drafts of 5 Vision Statements



Posters for Voting on the 5 Vision Statements



Description:

Kicking off the visioning session, Uninova’s group leader (Luis Camarinha-Matos) gave an introduction to the BRAID roadmap in order to provide the workshops context. After that, the UvA’s group leader (Hamideh Afsarmanesh) gave an overview presentation about the BRAID visioning process and activities, as well as the current visioning components and results. In the end of the presentation, she provided instructions for the in-depth group work visioning sessions.

For this group work, the participants were divided into 3 working groups. Each group was led by one “facilitator” from the BRAID consortium, and coordinated by Hamideh Afsarmanesh, applying the guidelines listed in Figure 37. During the visioning session the participants in each subgroup discussed different elements of the vision, and each participant was asked to give his or her opinion on each element of the vision. The prepared posters which were used as basis for this workshop are displayed in Figure 38, Figure 39, Figure 40, Figure 41, and Figure 42 in Appendix 2. The tools of voting and using post-its encouraged the participants’ contributions and at the same time helped to gather the outcomes on paper. Therefore in the collection of many pieces of feedback no thoughts were lost. Some impressions from the workshop can be found below.

Conclusions:

This first BRAID stakeholder visioning session went extremely well. The general impression of the 1st BRAID vision given by the participants was very positive. Lively discussions took place with everyone bringing in his/her knowledge. For the vision, we could gather detailed opinions of the participants on each specific element using the post-its and voting. The feedback from different stakeholders and visionaries clearly broadened the work done so far with more diverse expertise and experience.

Analysis of the votes confirmed that the participants already consider the 1st BRAID vision a succesful document. From the feedback (75 post-its were collected), we could identify the following main lines of suggested improvements:

- The Life Settings should be specified more precisely,
- Different types of stakeholders should be considered (family, caregivers, therapists),
- Costs are an important factor for making existing and new technologies and services available to a broader group of users,
- In general, senior citizens should not be seen as a separate group but as an integrated part of society. Appropriate, non-discriminatory language should be used in the vision.


Impressions:



3.1.2 In-Depth Pordenone Experts & Stakeholder Workshop

Type: In-Depth Consensus Building Visioning Workshop

Date and Location: April 7th, 2011 in Pordenone, Italy



Attendance:

Group 1	Group 2	Group 3
Alex Zhavoronkov	Lawrence Normie	Antonio del Cura
John Llewellyn	Madeleine Starr	Vesna Dolničar
Åse Kari Haugeto	Janez Malovrh	Annelies van Bronswijk
Nicola Pangher	Enrico Neri	Marino Nicolich
Verena Bleich	George Kourousias	Holly Ashton
Heidrun Mollenkopf	Massimiliano Bertetti	
Sergio Bellucci		
Aaron Quigley (Rapporteur)	Luca Odetti (Rapporteur)	Ståle Walderhaug (Rapporteur)
Rodd Bond (Facilitator)	Luis M. Camarinha-Matos (Facilitator)	Una Lynch (Facilitator)

Hamideh Afsarmanesh (coordinating discussions and answering questions for all groups)

Detailed information on the participants is listed in A3.2.

Agenda:

16.00 Introduction to BRAID Roadmap - *Luis M. Camarinha-Matos – Uninova*

16.15 Introduction to BRAID Vision - *Hamideh Afsarmanesh – University of Amsterdam*

16.45 Parallel Working Groups

- Vision statements validation:

Group 1: BRAID advisory board members + invited stakeholders
Facilitator: *Rodd Bond – DkIT* / Rapporteur: *Aaron Quigley - St. Andrew's University*

Group 2: BRAID advisory board members + invited stakeholders
Facilitator: *Luis M. Camarinha-Matos – Uninova* / Rapporteur: *Luca Odetti - Tecnia*

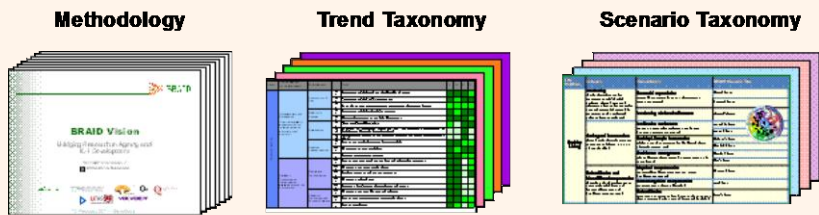
Group 3: BRAID advisory board members + invited stakeholders
Facilitator: *Una Lynch, Queen's University of Belfast* / Rapporteur: *Ståle Walderhaug - Middleware platform for empowering cognitive disabled and elderly*

17.55 Parallel Working Groups - Preparation of synthesis

18.15 Plenary: Feedback from Working Groups and discussion

19.00 Closing

Prepared and distributed Materials:



Drafts of 5 Vision Statements



Posters for Voting on the 5 Vision Statements



Description:

Like in Barcelona, Uninova’s group leader gave an introduction to the BRAID roadmap as preparation for the following working sessions. Then, the UvA’s group leader presented an overview of the BRAID visioning activities as well as the current vision and gave instructions for the following group work visioning sessions.

The participants were divided into 3 working groups for the following working session. Applying the guidelines listed in Figure 37 in Appendix 2, each group was led by a “facilitator” from the BRAID consortium. Hamideh Afsarmanesh coordinated group discussions and answered questions from stakeholders at each group about different aspects of the vision. The participants in each subgroup discussed the elements of the vision, and each participant was asked to give his or her opinion on each element of the vision. The prepared posters were used for voting and attaching comments with stickers. Detailed posters prepared for this in-depth workshop are shown in Figure 38 to Figure 42 in Appendix 2. Using these posters and post-its helped to give all the participants the opportunity to contribute freely to all discussion and to collect all their feedback for later analysis.

Conclusions:

The BRAID visioning session in Pordenone was very successful. The participants were not only enthusiastic, one even left a post-it stating “this is fun!”. This workshop was also a good complement to the workshop in Barcelona in terms of connecting different groups of stakeholders, therefore, different discussions.

The votes confirmed the 1st BRAID vision as a successful initiative. On top of this, many pieces of feedback were collected once again (through 77 post-its) and everybody’s voice was heard in order to improve the vision. In the discussion, the following points seemed to be most important:

- Prevention of illness should be included in the vision,
- All stakeholders and their collaboration should be considered (collaborative networks),
- It is not 100% clear what kind of “seniors” the vision is about (e.g. pre-/post-

retirement). It should be more evident that the process of ageing is considered together with the aspects that (most often) come with it (e.g. frailty, retirement but also cultural heritage, wisdom etc.),

- Education and training are essential, not only for the users to learn how to use technology, but also to raise technology awareness and acceptance (it should be clear that not a “big brother” is imposed, but a “supporting sister” is offered as help); the shrinking horizon needs to be considered,
- Finances are a significant factor: Technologies and services should be affordable for all, including economically weaker seniors; in the context of occupation in life, it should be kept in mind that extending working lives could become a necessity.

Impressions:



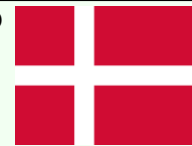
3.2 External Stakeholders Consultation & Remote Validation

In addition to the in-depth consensus building visioning workshops, the BRAID stakeholder workshop in Copenhagen, Denmark, and a remote validation process were used to gather the opinions of a big number of experts using a written survey. In this section, these two activities are described.

3.2.1 Stakeholder Consultation and Discussion - Visioning Workshop in Copenhagen

Type: Stakeholder Consultation and Discussion Visioning Workshop

Date and Location: June 16th, 2011 in Copenhagen, Denmark



Attendance:

28 experts in the field of ageing (see A3.3 for the complete list)

Agenda:

16.30 – 17.00 Introducing the BRAID Vision
Hamideh Afsarmanesh, Informatics Institute, University of Amsterdam

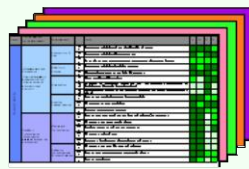
17.00 – 17.30 Open floor discussion on BRAID Vision

Prepared and distributed Materials:

Methodology



Trend Taxonomy



Scenario Taxonomy



Drafts of 5 Vision Statements



Description:

In the beginning of the visioning part of the workshop, Hamideh Afsarmanesh (UvA) gave an introduction presentation on the visioning methodology and results. After that, the participants filled in a survey in which they were asked to prioritize life settings and drivers, estimate the relevance of communities to the life settings, and rate the parts of the 1st BRAID vision (for the survey questions see Appendix 5, and for the results of the survey see Appendix 6).

Conclusions:

At the Copenhagen workshop, 20 participants filled up questionnaires, which provided useful information about the grade of consensus of this group of experts. Chapter 4 further addresses the total analysis results of all collected inputs.

Impressions:



3.2.2 Remote Expert Validation

Type: Remote Validation Process



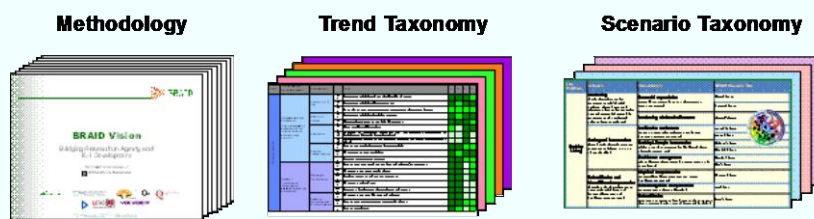
Date and Location: June 24th-July 11th 2011 online

Attendance:

29 expert participants (see A3.4 for the affiliation and other detailed information about these participants)

Name	Country	Name	Country
Rui M. Lima	Portugal	Luke Allan	Ireland
David Romero	Mexico	Rui Manuel Sousa	Portugal
Luis M. Camarinha-Matos	Portugal	Istvan Mezgar	Hungary
Koumpis Adamantios	Greece	Maura Mengoni	Italy
Tomasz Janowski	Macao	Rolando V. Vallejos	Brazil
Heiko Thimm	Germany	Nader Ale Ebrahim	Malaysia
Laszlo Nemes	Australia	Malgorzata Pankowska	Poland
Anabela Alves	Portugal	Duk-Hyun Kim	Korea
Kurt Kosanke	Germany	António Osório	Portugal
Elsa Estevez	Argentina	Pedro Campos	Portugal
Javier Bonal	Belgium	Ovidiu Noran	Australia
Willy Picard	Poland	Chinmay Das	India
Pedro Sanz Angulo	Spain	Giuseppe Stecca	Italy
Bernhard Koelmel	Germany	Donald Neumann	Germany
Dr. Jens Schütze	Germany		

Prepared and distributed Materials:



Drafts of 5 Vision Statements



Description:

A survey email requesting for contribution to the virtual validation process of BRAID's vision is sent out to a number of experts from different areas of related expertise. These experts are currently members of the SOCOLNET society of collaborative networks. The information sent through the email contained the following material: slides about the visioning methodology of BRAID, visioning results components, and the preliminary BRAID vision statements. The questions asked in the survey were the same as those at the workshop in Copenhagen, asking the participants to prioritize life settings and drivers, to estimate the relevance of communities to each life setting, and to rate the different elements of the 1st BRAID vision statements (see Appendix 5).

Conclusions:

In response to the request for remote contribution to BRAID, 29 experts responded with filled questionnaires. The participants covered a broad range of expertise. Consequently, through the remote survey, a better view of the consensus on the vision amongst different groups of stakeholders of BRAID could be achieved. The results are discussed later in section 4.1.



3.3 Conclusions

Several different types of activities were applied for consensus building amongst different stakeholders of the BRAID environment. Through the In two **in-depth consensus building visioning workshops** (in Barcelona, Spain, and Pordenone, Italy), one **consultation and discussion visioning workshop** (in Copenhagen, Denmark), and a **remote validation process**, a total of about 80 experts have actively participated in validating, and enhancement of the BRAID's vision statements. These participants have expressed their opinion on different aspects of the work performed on visioning and have contributed their expert opinions to improving the vision and to building consensus on it. While overall, the 1st BRAID vision was received very positively, we believe that the final vision of BRAID now reported in section 4.2 is a stronger representative of the desired plausible future of ageing well in Europe. The detailed analysis of the collected materials as well as the final BRAID vision are presented chapter 4.

4 Documentation and Finalization of the BRAID Vision

The last step of the BRAID vision building process (Figure 6), involves documenting the visioning work that has been done and the preparation of the final vision. Accordingly, in the following two sections we first describe the analysis results of the feedback collected during the stakeholder consensus events and then present the final BRAID vision statements.

4.1 Analysis of Collected Feedback

As mentioned in chapters 2 and 3, during the internal as well as external validation and consensus building activities, a big amount of feedback was collected. A summary list of the collected items acquired from these events follow:

- Notes of discussions from the BRAID's internal workshops in Brussels and Barcelona
- 75 post-it commentaries from external workshop in Barcelona
- Voting reports from 19 participants of external workshop in Barcelona
- 77 post-it commentaries from external workshop in Pordenone
- Voting reports from 21 participants of external workshop in Pordenone
- 20 filled in surveys from participants of external workshop in Copenhagen
- 29 filled in surveys from participants of the remote consensus building process.

Below, it is first explained how the analysis of the collected materials was done. Second, the analysis results themselves are presented. Finally, the outcome and its consequences on editing/enhancement of the final vision are discussed.

4.1.1 Systematic Analysis Method

For analyzing the feedback, different methods are applied to different types of validation and consensus building activities, which are addressed in chapters 2 and 3. These methods are briefly described below.

The results from the intensive group work sessions at the **internal testing and validation visioning workshop** in Brussels (section 2) were discussed in the plenary with the BRAID project's consortium on the spot. The outputs from these discussions were processed by the respective "group editor" and captured in the preliminary BRAID vision which is presented in BRAID deliverable D4.1. Therefore, these results will not be discussed further here.

For the two **in-depth consensus building visioning workshops** in Barcelona, Spain, and in Pordenone, Italy, first the *post-it notes* and the *notes from the presentations* given by each group representative during the workshops are processed. The notes are marked with the part of the vision to which they belong, and per vision statement, then sorted according to the related topic. Only those notes which were not readable or understandable had to be thrown away, unfortunately. Second, the *votes* from the groups on the parts of the visions are counted and visualized in order to look for remarkable highs or lows (see appendix A4.1 for results from Barcelona, and appendix A4.2 for results from Pordenone). For each of the workshops separately, the major issues addressed are then summarized, and conclusions are made. These are presented in section 3.1.1 for Barcelona and section 0 for Pordenone.

As a next step, all the notes and votes from the two in-depth workshops are added together. With the main goal of getting a qualitative understanding of the required changes which are recommended for the vision, these *notes* are again grouped by topic for each part of the vision. The most relevant notes are digitalized and put into a table. As an extra exercise, the notes are labeled with the topics that are intuitively associated with them. These topic labels are then used to get an overview of the most re-occurring points and by this the most important and commonly accepted suggestions for improvement of the vision statements. For an example section of the developed working tables see Figure 22.

Low Level Synthesis of Feedbacks - Independent Living			
Main Comments	Source	Related Topics	Applied to
Facets			
VIL7 ...through shared learning between older people, policy makers, academics, practitioners, designers, ...	PDN-ext	wording	VIL7: ...as policy makers...
General Comments			
How to finance all these items?	PDN-ext	costs	added VIL8
Missing: Finance planning	PDN-ext	costs	
Companies can pay - investment: They will benefit from it, High entrance "ticket"	PDN-ext	costs	
Consider operational & management costs, ownership and business model of the technologies for independent living	BCN-ext	costs	
The technology exists but it is expensive. We need to create cheaper technology.	BCN-ext	costs	
Independent Living ? smart home	BCN-ext	home	VIL2 both inside the home environment and outside
Importance of the home environment for the older people -> assistive technology is important, aspects as safety and security at home (monitoring of things)	BCN-ext	home	VIL3 ensuring security and safety at home
And learning? E.g. ICT	BCN-ext	learning	VIL6
Learning and coaching: elderly users often need help in learning how to use new products, we shall make sure that coaching programs will be available to the end-users.	BCN-ext	learning	
Developing new technologies for elderly users we should always have in mind usability and acceptability issues: universal and user-centered design shall be the leading approaches for innovative solutions that however look familiar to elderly people. If we create products and technologies that look familiar, elderly users will be more willing to accept new technologies.	BCN-ext	accessibility and usability, design	VIL4: ...design methods... usable...
Methods for design and evaluation should be included in the "vision"	PDN-ext	design	
User involvement, user-centered design for making technologies that are relevant for the users	PDN-ext	design	
Need of more technology transfer: we should make sure that our solutions reach the market and the users.	BCN-ext	technology transfer	VIL8
Shouldn't put security first in the list. List looks more from carers' point of view. Mobility & family first.	PDN-ext	security	reordered
Training/empowerment for independent living should be mentioned	PDN-ext	learning	VIL6

Figure 22: Part of the working table for analysis of notes related to Independent Living vision statement

The *votes* from both workshops are then merged and again visualized in charts to get insight both into the strength of the consensus achieved on different aspects of the vision statements, as well as on its potential weak points which need further enhancement.

The data from the filled in *questionnaires* collected from the **consultation and discussion visioning workshop** in Copenhagen, Denmark, as well as the received responses from the **remote consensus building process** are also summarized and analyzed as a whole.

The results of these analyses are further presented in the following subsection.

4.1.2 Analyzed Results

As previously described, the first step in the analysis of stakeholder feedback is to investigate the comments received during the two **in-depth consensus building visioning workshops** in Barcelona and Pordenone. These comments can roughly be categorized into two types: First, there are comments related to methodology, style, and wording of the vision statement. Second, there are comments related to the contents of the vision statements.

In the group of comments of the first type, comments on methodology, style and wording, we find a number of comments related to different life settings. While the working groups discussed and agreed on the importance of the identified life settings, the main issue seemed to be that there should be a clearer definition of what each of the life settings encompasses. Furthermore, there is a list of comments that address the style of expressing and wording of the vision. A remarkable controversy in this context among different participants is the question of whether the vision is too comprehensive (believed by some) or not comprehensive enough (believed by some others), while after discussions within each group, all groups (as a whole) agreed with the level of comprehensivity of the five vision statements. In addition, it is very clear that how to address the specific needs of every individual is a difficult and sensitive topic to every participant, and the suggestions for need, and therefore the improvements of the vision statements are sometimes contradictory. Finally, there are many notes and suggestions on specific points that should be re-worded.

Looking at the group of comments about the content of the vision, it is observed that there are topics which are commented on in (almost) all life settings of the vision. The most dominant of these topics are related to training and learning, usability and accessibility, and costs. Additionally, it was emphasized in all parts that all types of stakeholders need to be addressed in the vision. Moreover, the main points for each of the parts of the visions were:

1. Core vision: Put more emphasis on senior citizens as asset to the society,
2. Independent living: Cost of the solutions should be addressed,
3. Health and care in life: Should include prevention and active healthcare,
4. Occupation in life: Consider assistive technologies to support occupation,
5. Recreation in life: Social interaction and communities need to be strengthened.

For the *votes*, the summary of the numbers from Barcelona and Pordenone is analyzed. It must be carefully noted that all the ranks reported below in this section represent the opinions of the stakeholder participants in our vision consensus activities on the 1st set of BRAID's vision statements, and before it gets further improved to its current final version of vision statement. The numbers of these votes are shown in Figure 23. As visualized in the overview given in Figure 24, the majority of workshop participants considered the vision either as suitable (the core vision and the vision for Independent Living) or very suitable (the visions for Health and Care in Life, Occupation in Life, and Recreation in Life). On average, all five vision statements scored higher than 4 (suitable). All of the 34 facets defined in the five vision statements were rated 4 (important) on average, with only four of them rated slightly below 4, and the rest of them above. In appendix A4.3, graphs of the votes on the facets of each of the visions can be found.

Visions and the elements		Rating					Sum	Average (out of 5)	
		1 (Little)	2	3	4	5 (Very)			
Core Vision	Suitability of statement	0	1	4	19	16	40	4,3	
	Importance of facets	V1	0	0	3	11	26	40	4,6
		V2	1	1	9	8	21	40	4,2
		V3	0	0	9	13	18	40	4,2
		V4	0	1	3	13	23	40	4,5
		V5	0	2	6	16	16	40	4,2
		V6	1	4	6	15	14	40	3,9
		V7	0	2	4	13	21	40	4,3
Independent Living	Suitability of statement	0	2	4	18	16	40	4,2	
	Importance of facets	VIL1	0	1	4	15	20	40	4,4
		VIL2	0	2	3	13	22	40	4,4
		VIL3	0	2	4	19	15	40	4,2
		VIL4	0	1	5	18	16	40	4,2
		VIL5	0	1	5	15	19	40	4,3
		VIL6	1	4	4	14	17	40	4,1
		VIL7	0	1	6	14	19	40	4,3
Health and Care i.L.	Suitability of statement	0	2	5	16	17	40	4,2	
	Importance of facets	VHL1	0	2	3	18	17	40	4,3
		VHL2	1	5	5	13	16	40	4,0
		VHL3	0	1	4	13	22	40	4,4
		VHL4	1	1	4	10	24	40	4,4
		VHL5	1	3	8	15	13	40	3,9
		VHL6	0	3	3	19	15	40	4,2
		VHL7	0	2	6	12	20	40	4,3
Occupation in Life	Suitability of statement	0	4	5	12	19	40	4,2	
	Importance of facets	VOL1	1	0	10	14	15	40	4,1
		VOL2	0	2	11	14	13	40	4,0
		VOL3	1	5	4	13	17	40	4,0
		VOL4	0	2	5	11	22	40	4,3
		VOL5	0	1	6	7	26	40	4,5
		VOL6	2	3	5	7	23	40	4,2
		VOL7	3	0	6	13	18	40	4,1
Recreation in Life	Suitability of statement	0	0	7	16	17	40	4,3	
	Importance of facets	VRL1	1	0	4	17	18	40	4,3
		VRL2	1	2	4	15	18	40	4,2
		VRL3	1	0	6	18	15	40	4,2
		VRL4	0	0	6	13	21	40	4,4
		VRL5	1	3	6	11	19	40	4,1
		VRL6	2	2	4	16	16	40	4,1

Figure 23: Rating of the suitability of the audacious goal described in each vision and the importance of each facet, from the in-depth workshops

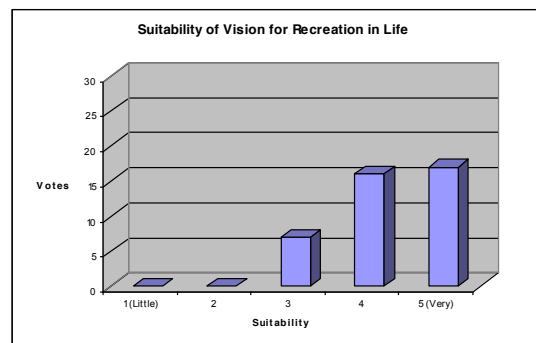
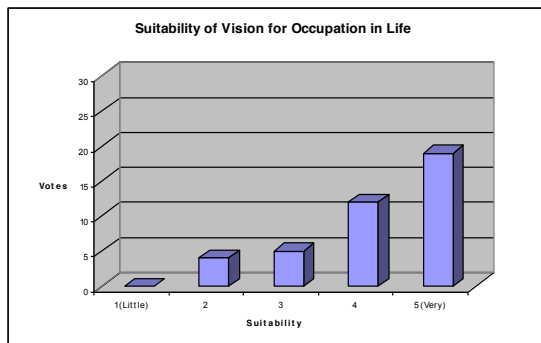
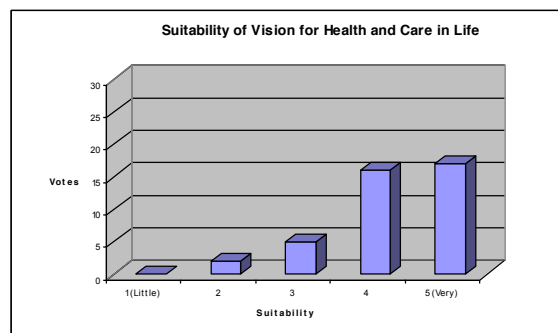
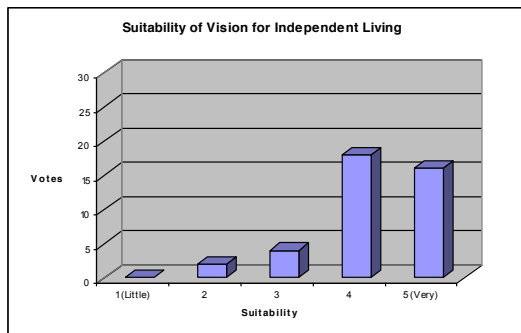
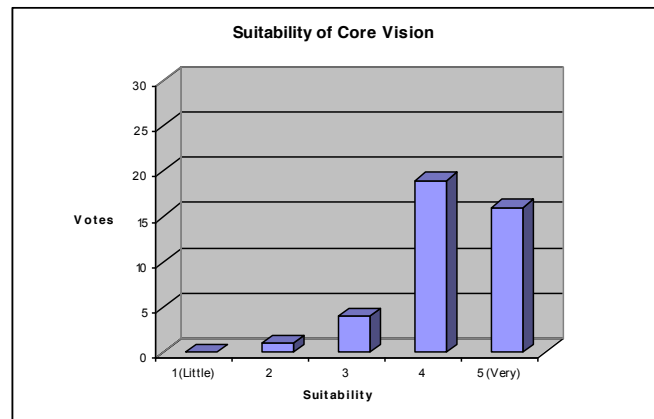


Figure 24: Overview of votes on suitability of visions from in-depth workshops

The summarized data from the filled in *questionnaires* collected at the **consultation and discussion visioning workshop** in Copenhagen and from the survey in the **remote consensus building process** are listed in Appendix 6. Below, these results are summarized.

For question 1, in which it is asked to rank the priority of each of the Life Settings for the vision of the BRAID environment, the results are shown in Figure 68. Health and Care in Life reached the highest priority (average 2.8 out of 4), followed by the Occupation in Life (2.6) and the Independent Living (2.6). Lowest priority was given to the Recreation in Life (2.3).

In question 2, a ranking of the drivers is asked according to their priority for the vision. The results are visualized in Figure 69. The societal driver reached the highest priority (average 3.2 out of 5), followed by the technological, organizational, and economic driver (all 3.1). Lowest priority was given to the regulatory driver (2.9).

Question 3 requests an opinion about how important community building is for reaching the vision for each of the Life Settings, on a scale of 1 (little) to 5 (very). A graph of the results can be found in Figure 70. Community building was estimated as equally important for Independent Living, Occupation in Life, and Recreation in Life (all 4.1). The importance of community building for Health and Care in Life was ranked lowest (3.8).

In question 4, a vote is asked on the suitability of the core vision on a scale of 1 (little) to 5 (very). As visualized in Figure 71, the majority voted for 4, and the average of the votes is 4.1.

Question 5 asks to express an opinion on the suitability of the visions for each Life Settings either by agreeing with the majority of stakeholders from the previous workshops, or by giving one's own rating on a scale of 1 (little) to 5 (very).

- For Independent Living (see Figure 72), most of the respondents agreed with the majority vote of 4. Counting the “agrees” as 4, calculating the average results in 4.1.
- For Health and Care in Life (see Figure 73), most of the respondents agreed with the majority vote of 5. Counting the “agrees” as 5, calculating the average results in 4.5.
- For Occupation in Life (see Figure 74), most of the respondents agreed with the majority vote of 5. Counting the “agrees” as 5, calculating the average results in 4.4.
- For Recreation in Life (see Figure 75), most of the respondents agreed with the majority vote of 5. Counting the “agrees” as 5, calculating the average results in 4.3.

4.1.3 Conclusion

Through the one BRAID internal testing and validation visioning workshop, two in-depth external consensus building visioning workshops, one external consultation and discussion visioning workshop, and one external remote consensus building process, the opinion of a total of 89 experts on the 1st BRAID vision was collected. While there were many positive responses, a number of recommendations were also related to improvements of the vision. These recommendations are processed in the final version of the vision.

Within the surveys, some questions and voting were requested on different aspects of the vision statements. Regarding the priorities on the Life Settings, no strong order could be identified, although it is obvious that the majority ranked Health and Care in Life highest and Recreation in Life lowest. Therefore, Health and Care in Life deserves most attention. For the drivers, no strong order could be identified either, with the regulatory driver scoring lowest and the societal driver highest, and the technological, organizational, and economic drivers somewhere in between. In addition, in the surveys, experts confirmed that the community building is important for all Life Settings.

Overall, calculating the averages from both the workshops and the surveys, an average of 4.2 out of 5 for the suitability of the core vision, and an average of 4.3 for the visions on all four Life Settings, express remarkably strong consensus, even for the first version of the BRAID vision.

In the following section, the revised and final vision of BRAID is presented.

4.2 The Final BRAID Vision for ICT & Ageing

Using the results from testing, validation and consensus building on the first BRAID vision statements, the first version of the vision is improved and elaborated, resulting in the final BRAID vision, which is presented in this section with the core BRAID vision in the subsection 4.2.1, followed by the vision instantiations for the four life settings which are introduced in the subsection 4.2.2.

As also introduced in section 6.1 of BRAID's deliverable D4.1, the vision statement for BRAID provides a clear direction where the European society shall strive to take, in order to support

its ageing citizens in different areas of their life. This vision also identifies the main requirements as well as addressing the main potentials in need of further attention in relation to the following:

1. The required areas of research & development, related to the five drivers of Technological, organizational, societal, economic, and regulatory.
2. The requirements from other government, social, and regulatory bodies, related to influencing the establishment of needed policies.
3. The potentials for creation of new opportunities in the European market and society.

Similar to the first vision, the final BRAID vision statements are formulated following the stepwise approach for the definition of a well-conceived vision proposed by Cummings [Cummings, 2005]. The summary of the approach is repeated below, in order to support the better understanding of the structure of the core BRAID vision:

*A well-conceived vision consists of two major components. These are the **core ideology** and the **envisioned future**. The core Ideology is the primary element of the vision framework and consists of two sub-elements of: the **core values** and the **core purpose**. The Core Values constitute the base for defining the vision for an organized association or a society – acting as the principle to be hold with no compromise, with high importance for those inside the organized association or society. The Core Purpose on the other hand describes the fundamental reason for building the vision from the organization/society point of view. The Envisioned Future is the second primary element of the vision framework, also consisting of two sub-elements which are the **Long-term Audacious Goal** and a **Vivid Description** addressing the main desired facets of the envisioned future, thus indicating how it would be when all the planned goals are achieved.*

In the following subsection the definition of the final core BRAID vision is presented.

4.2.1 The Core BRAID Vision Statement

Following the previously introduced approach by Cummings, the elements of the well-conceived vision for BRAID are refined piece by piece as follows.

- **Core ideology** that is composed of:
 - **Core values**
Ageing well is a vital pillar for Europe's smart, sustainable and inclusive growth.
 - **Core purpose**
Building a strong, cohesive and inclusive Europe that empowers citizens to age well.
- **Envisioned future** that is composed of:
 - **Long term audacious goal**
By 2020, in the pursuit of Europe's vision of smart, sustainable and inclusive growth, and in response to the challenges and opportunities raised by a rapidly ageing demographic profile, on the basis of advanced ICT developments, complemented by societal, organizational, economical, and regulatory developments, Europeans, individually and collectively, will align their efforts and means to empower all citizens to age well particularly those who fall into other vulnerable groups (e.g. as a result of gender, ethnicity, religion, economic power, disabilities, sexual orientation, etc), promoting their well-being and encouraging the pursuit of their fulfilment, contributing to the continuous development of European society and community and all levels.
 - **Vivid description** that is composed of:

- V1. **Technological infrastructure** – Usable, accessible, and affordable technological infrastructure, with ICT applications, devices, tools & services to adapt to the population's changing needs and support the quality of life whilst ageing
- V2. **Enhanced awareness and training** - Good understanding of a life course perspective on ageing, allowing a more effective inter-generational linkage and a better preparation of individuals for this process by providing appropriate information, education, and training, promoting life-long-learning and increased technology awareness and acceptance
- V3. **Mechanisms to promote active life** - Positive, cross-societal attitude towards ageing, activating support mechanisms to motivate and empower seniors, taking into account social, functional and cultural differences, and offering a rich variety of choices and opportunities for continued active life
- V4. **Regulatory framework and principles** - Policies and regulatory framework— regionally, nationally, and across Europe - to provide an underpinning approach to support the rights of the elderly and particularly vulnerable older people and simultaneously recognize, motivate, promote, and support the continued involvement and contribution of senior citizens to society
- V5. **Implemented ethical principles** - Established mechanisms to ensure security, safety, ethics, and privacy on data, and services, therefore accessing and using ICT safely (free from harm) and with security (free from threat or intrusion)
- V6. **Organizational infrastructure** - Organizational infrastructures and appropriate business models that facilitate the interaction between seniors and society, as well as the organized provision of all required services and support, especially supporting the collaboration of stakeholders
- V7. **Economic and employment practices** - Economic system and employment practices, allowing the choice of active involvement of seniors by continuing their occupation (if desired), furthering social and economic value creation
- V8. **Models of engagement** - New models of social and societal engagement and collaboration for care, support, occupation, and recreation of senior citizens, ensuring the autonomy and dignity of the individual

The final BRAID Core Vision statement is presented in Figure 25.

4.2.2 Establishing BRAID's Vision Instantiation Statements into Four Life Settings

As introduced in the description of the development of the 1st vision (subsection 1.3.6), in addition to the overarching core vision for BRAID, four instantiations of it, one for each of the BRAID's life settings, are developed.

This instantiation approach is applied because capturing all the aspects and perspectives which are relevant to the BRAID environment within one vision statement encompassing one set of desired facets is too complex and presents a barrier to successful vision development and specification. The instantiation approach enables focusing down on specific aspects and relevant details for each of the four life settings, namely: independent living, health and care in life, occupation in life, and recreation in life. The four instantiated vision statements are respectively presented in Figure 26, Figure 27, Figure 28, and Figure 29, each one consisting its envisioned future statement, as well as a set of the main desired facets.

Core BRAID VISION – for European Ageing Society

Core Ideology:

Building a strong, cohesive and inclusive Europe that:

- embraces people's yearning to age well;
- values the broad range of capacities and resources among ageing people;
- supports and enables Europeans to age actively, healthily and independently;
- anticipates and responds flexibly to ageing related needs and preferences;
- respects people's decisions and lifestyle choices regardless of age;
- protects the rights of those who are most vulnerable;
- promotes older people's inclusion in, and contribution to, enriching European society.

Envisioned future:

By 2020, in the pursuit of Europe's vision of smart, sustainable and inclusive growth, and in response to the challenges and opportunities raised by a rapidly ageing demographic profile, on the basis of advanced ICT developments, complemented by societal, organizational, economical, and regulatory developments, Europeans, individually and collectively, will align their efforts and means to empower all citizens to age well particularly those who fall into other vulnerable groups (e.g. as a result of gender, ethnicity, religion, economic power, disabilities, sexual orientation, etc), promoting their well-being and encouraging the pursuit of their fulfillment, contributing to the continuous development of European society and community and all levels.

Main desired facets:

V1. Foundational technological infrastructure - Usable, accessible, and affordable technological infrastructure, with ICT applications, devices, tools & services to adapt to the population's changing needs and support the quality of life whilst ageing

V2. Enhanced awareness and training - Good understanding of a life course perspective on ageing, allowing a more effective inter-generational linkage and a better preparation of individuals for this process by providing appropriate information, education, and training, promoting life-long-learning and increased technology awareness and acceptance

V3. Mechanisms to promote active life - Positive, cross-societal attitude towards ageing, activating support mechanisms to motivate and empower seniors, taking into account social, functional and cultural differences, and offering a rich variety of choices and opportunities for continued active life

V4. Regulatory framework and principles - Policies and regulatory framework– regionally, nationally, and across Europe - to provide an underpinning approach to support the rights of the elderly and particularly vulnerable older people and simultaneously recognize, motivate, promote, and support the continued involvement and contribution of senior citizens to society

V5. Implemented ethical principles - Established mechanisms to ensure security, safety, ethics, and privacy on data, and services, therefore accessing and using ICT safely (free from harm) and with security (free from threat or intrusion)

V6. Organizational infrastructure - Organizational infrastructures and appropriate business models that facilitate the interaction between seniors and society, as well as the organized provision of all required services and support, especially supporting the collaboration of stakeholders

V7. Economic and employment practices - Economic system and employment practices, allowing the choice of active involvement of seniors by continuing their occupation (if desired), furthering social and economic value creation

V8. Models of engagement - New models of social and societal engagement and collaboration for care, support, occupation, and recreation of senior citizens, ensuring the autonomy and dignity of the individual

Figure 25: The Core BRAID Vision

BRAID VISION instantiation – Independent Living

By 2020, senior citizens will be empowered to live a long, fulfilling, and independent life through support from technological, societal, organizational, economic, and regulatory mechanisms. These supports include facilitating access to relatives, carers and the community, and assisting with daily life activities, such as house-keeping, buying food, and personal hygiene care among others, and are underpinned by supports for mobility, transport, security and safety.

Main desired facets:

VIL1. Infrastructure for independent living- Established infrastructure, including the equipped buildings and networks as the base for the support of independent living by technology

VIL2. Assistive technology and support services - Assistive technology and support services that facilitate independent living both inside and outside of the home environment

VIL3. Ambient intelligence - Monitoring devices and technologies supporting ambient intelligence solutions, ensuring security and safety particularly at home, and communication with family and carers

VIL4. Services for independent living - Advanced set of organized and commercial services aiming to enhance seniors' diminishing abilities and caring for seniors so that they can live independently

VIL5. Technology-based empowerment - Technology training in order to empower the users for the application of technologies in daily life, and raise technology awareness and acceptance

VIL6. Knowledge sharing - Mechanisms to increase knowledge dissemination, training and learning through sharing both for seniors and all other stakeholders as policy makers, academics, practitioners, and designers

VIL7. Low-cost pervasive technology – Strategy for the transfer of new technologies to users, considering especially the affordability of tools and services to all customers combined with the profitability for businesses

Figure 26: BRAID vision instantiation - Independent Living

BRAID VISION instantiation – Health and Care in Life

By 2020, as a part of the ageing well paradigm, support for health and care (including physical and mental health, and prevention, diagnostics and treatment of sickness), will become a high priority strategy across Europe. The emerging health care technologies and services when applied to elderly shall be used in new ways in the society, across a distributed infrastructure focusing on decentralized models, while sensible to the ethical consequences of the introduced innovations and providing mechanisms for the protection of individual rights. Political/decision-making systems at national and local level, and public, commercial and not-for-profit organizations supporting healthcare will adapt to this new environment, considering the needs of the network of stakeholders, such as caregivers and family and friends.

Main desired facets:

VHL1. Infrastructure for healthcare - Technological infrastructure to support consumer driven healthcare (supporting data privacy, standards)

VHL2. Technologies for monitoring interventions – Well-designed advanced devices, robots, (wireless) sensor based technologies, which are context aware, tools, and implants supporting interventions for monitoring and provision of health care, especially in a home environment

VHL3. Assistive services - Information driven assistive services supporting the health care (diagnostics and treatment) of seniors and involvement of other stakeholders

VHL4. Adaptive support systems - Appropriately designed home based interventions and support systems, based on the users' cognitive and emotional status, which adapt whilst they age

VHL5. Awareness of data sensitivity - Mechanisms to raise awareness on the formation of values, ethics, rights, and privacy on health related data and advanced ICT tools to ensure data security

VHL6. Advanced collaborative networks – Sustainable service models with organized logistics and networks of health care providers in the society, including the personal network of family and friends, adapted to demographic change

VHL7. Promotion of preventive healthcare – Information, education and training as well as provision of (technology) tools for the prevention of health problems and support of active healthcare

Figure 27: BRAID vision instantiation - Health and Care in Life

BRAID VISION instantiation – Occupation in Life

By 2020, due to the ageing population in Europe, an opportunity and need will arise to create a new framework for a model of work selected by seniors and adapted as they age, enabling them, if desired, to earn a living or perform voluntary work, through continued employment or have some form of continued work engagement. This framework will require support for its technological, socio-organizational, legal and political aspects. The aimed vision capitalises on the talents and expertise of senior workers, facilitating value creation through the use of ICT for the benefit of the individual, the economy and European society as a whole.

Main desired facets:

- VOL1. Infrastructure for continued occupation** - Established technological infrastructure (including support for connectivity, mobility and cloud computing) as the base for senior professionals' activities
- VOL2. Mechanisms for group formation** - Mechanisms to build associations of senior professionals and actively engage them, and support services for formation / management of teams of professionals
- VOL3. Enabling support technology** - Advanced and user-friendly software environments with adaptive personalized interfaces and affective interactions (within a context-aware and configure-yourself enriched environment) and assistive technologies that help with decreasing abilities
- VOL4. Continued training** - Organized support for training and continued life-long learning for seniors, suited to changing abilities, enabling and inspiring to extend working life if wanted or needed
- VOL5. Social awareness of values** - Increased social awareness about the value of senior professionals and their social cohesion and knowledge transfer (facilitating active involvement through networking, with emphasis on cross-generational and gender issues)
- VOL6. Business models for involvement** - New business models for involvement of seniors within existing economical system
- VOL7. Regulations for employment protection** - New policies and regulations for employment and protection of rights of senior professionals, particularly those who fall into other vulnerable groups (e.g. as a result of gender, ethnicity, religion, economic power, disabilities, sexual orientation, etc)

Figure 28: BRAID vision instantiation - Occupation in Life

BRAID VISION instantiation – Recreation in Life

By 2020, ageing citizens will increase their pursuit of active recreational lifestyles that suit their abilities and preferences, which creates new opportunities for innovative supporting products and services. Recreation is seen as a broad set of activities involving peoples' participation and enjoyment in cultural life, craft, hobbies, sport and physical activity, entertainment, socialising, travel & leisure, political engagement, spiritual and faith groups, life-long learning, passing on personal wisdom, history and experience, keeping pets, and playing games. Active recreational interests and lifestyles may improve mental well-being, and have a positive effect on the physical health and well-being of seniors. New technology solutions can support communications between seniors, families, friends, and peers, strengthening community participation and forming new communities and social networks with similar interests.

Main desired facets:

- VRL1. Infrastructure for recreation** - Infrastructure and availability of required technological platforms, both at home and in public spaces (connectivity, communications and networking infrastructures and pervasive applications and services that are universally accessible and affordable)
- VRL2. ICT training** - Provision of adequate features and training support to enable seniors to use the developed ICT tools
- VRL3. Tailored-designed software** - Software services designed appropriately for supporting seniors with personalized interfaces and affection-based interactions, that can adapt to users' sensory, cognitive and physical capabilities (within a context-aware and configure-yourself enriched environment)
- VRL4. Access to communities** - Mechanisms to increase social cohesion, access to community and networking (including support for transport and mobility as well as online platforms)
- VRL5. Co-learning** - Established mechanisms to increase knowledge dissemination and learning through sharing
- VRL6. Established associations** - Associations formed for seniors and communities of interest, allowing their active (physical and virtual) engagement

Figure 29: BRAID vision instantiation - Recreation in Life

4.3 A Closer Look at the BRAID Vision

In Section 4.2, the final five vision statements of BRAID were presented. The goal of the BRAID's visions is to comprehensively cover all areas of seniors' life. But accordingly, the five developed vision statements, i.e. the Core vision and the instantiated visions for independent living, health and care in life, occupation in life and recreation in life, add up to several pages of text, which is a large amount of text when considering that they represent the "vision" for BRAID. Furthermore, the inter-relationships among many of the elements and facts of these vision statements are not specified within the text of the vision statements.

We have of course discussed the main aspects of our visioning process, the five generated textual vision statements, and the relation among all these elements, during several in-depth visioning workshops and consultation meetings. This process has proved to be successful and productive both for enhancement of earlier drafts of the vision, and for ultimately resulting the final five vision statements for BRAID. However, these participating stakeholders were carefully guided at the visioning workshops. Namely, every workshop was carefully prepared in advance and led by members of the University of Amsterdam (UvA) team (WP4 leader). Furthermore, the main entities of the visioning process and each vision statement were presented to participants by the members of the UvA, and the stakeholders at each workshop were guided and assisted during the working sessions through the distributed material by members of several WP4 partner organizations. As such, the ideological elements of each vision statement and its facets were frequently explained during the hours spent in each session, and related to other entities of the BRAID's visioning process.

Clearly, now that the five BRAID vision statements are finalized, the presentation of these results to the general public may not follow the same process of holding stakeholder workshops as described above. Rather, for the public dissemination of BRAID visioning results, although quite challenging, it is desirable to provide these results in a format which is easier both to grasp and to remember by the stakeholders.

In this section we therefore aim to analyze and reach some further insight into each vision statement, in order to extract its main essence, summarizing its elements and facets and ultimately trying to visually illustrate our findings on the essence of each textual vision statement. The results of these attempts are presented in Section 4.3.1, followed by some discussion on the role that can be played through establishing communities, for furthering the achievement of the BRAID's vision.

4.3.1 Summarization and visualization of BRAID visioning results

The idea behind generating visual presentations for the BRAID visioning results is to develop some abstract models/representations – intended to improve the understanding of the involved elements and facets of each vision statement, as well as the significant relationships among these and other aspects and entities identified through the BRAID's visioning process. These abstract models are therefore intended to constitute the basis to attract general stakeholders, while more details on each of the illustrated elements can then be read about in the textual description of the vision statements and the two deliverables D4.1 and D4.2 produced in WP4.

We therefore aim at providing abstract illustrations for the Core vision of BRAID, the instantiation of the core vision into the 4 BRAID's life setting, the inter-dependencies among different facets of each of these 5 vision statements (see Figures 25 to 29) to each other, as well as their inter-dependencies to the 5 driving forces identified in BRAID's visioning process.

With this attempt, we hope to capture the most relevant aspects of BRAID's visioning, to enhance the understandability of its related concepts. Clearly, depending on the type of stakeholder, different aspects of the BRAID's vision are related to and better understood by certain type of stakeholders better than others. Nevertheless, we aim to increase its general understandability, for the purposes of discussion among researchers, policy decision makers, economic advisors, education planners, as well as BRAID's targeted end users – the ageing European citizens – among others. Considering this aim, preferably the produced abstractions of the BRAID's vision shall be based on a **small number of unifying concepts** addressing the most generic elements.

In ideal terms, the most important attributes characterizing and summarizing the vision for BRAID, shall include

- **Simplicity** - to increase its usability by stakeholders, being clear and purely logical.

- **Comprehensive capturing of the unifying concepts** - towards its holistic understanding, and as much as possible capturing all related aspects of the ageing well together in each abstraction, to understand where they fit against each other and within the context of the BRAID vision a whole.

- **Neutrality** - applying a base uniform presentation and notations.

Having the above guidelines in mind, we have generated a number of abstract illustrations. These illustrations are self explanatory, nevertheless more insight on development of each illustration is provided in the remaining of this section. While some of the contents of these illustrations overlap, each of them has its own angle in presenting different aspects of the BRAID visioning results.

Abstraction 1 -

In this illustration, presented in Figure 30, each of the 5 BRAID vision statements is represented in one square, and identified by specific color. Then for every vision statement, six of its main ideological elements are captured by a few words that are represented as the highlights of those elements within 6 boxes inside each vision square. Furthermore, this abstraction also presents that main aim of the BRAID initiative (*to support the ageing well of European citizens through the ICT developments*) as targeted within its 5 vision statements. This is illustrated by the phrase in its title “**Towards an ICT platform that...**” which is then completed with each of the 5 phrases that appear within each of the five vision square.

These phrases state:

- ... **harnesses and fosters ageing well. (Core vision)**
- ... **enables and empowers independence. (Independent living vision)**
- ... **fosters trans-sectoral support of personal wellness. (Health & care in life vision)**
- ... **facilitates participation in value creation. (Occupation in life vision)**
- ... **animates active enjoyment of life. (Recreation in life vision)**

Abstraction 2 -

In this illustration, presented in Figure 31, we return to the metaphor of the vision castle, which was introduced in Section 1.1, and illustrated in Figure 5. The main part of the castle, including its main entrance and tower, represents the core vision, which is also marked with the blue flag of CV for core vision). The other essential parts of the castle are its four other towers, each of them watching over one specific direction and standing for one of the BRAID’s vision life settings. Each of these towers is also marked with a flag: IL for independent living, HC for health and care in life, OL for occupation in life, and RL for recreation in life. The building blocks of each of the towers are stones (called bricks in the subtitle) which strengthen the tower. Each stone/brick in each tower highlights one of the facets defined in its respective vision statement. Putting this elaborated castle inside the Figure 5 of Section 1.1, it is then metaphorically illustrated that the actions which appear on the road reaching this castle, shall then carefully implement all the promised vision facets, before we can reach this dream castle. The roadmapping results being generated in WP6 address and define these actions.

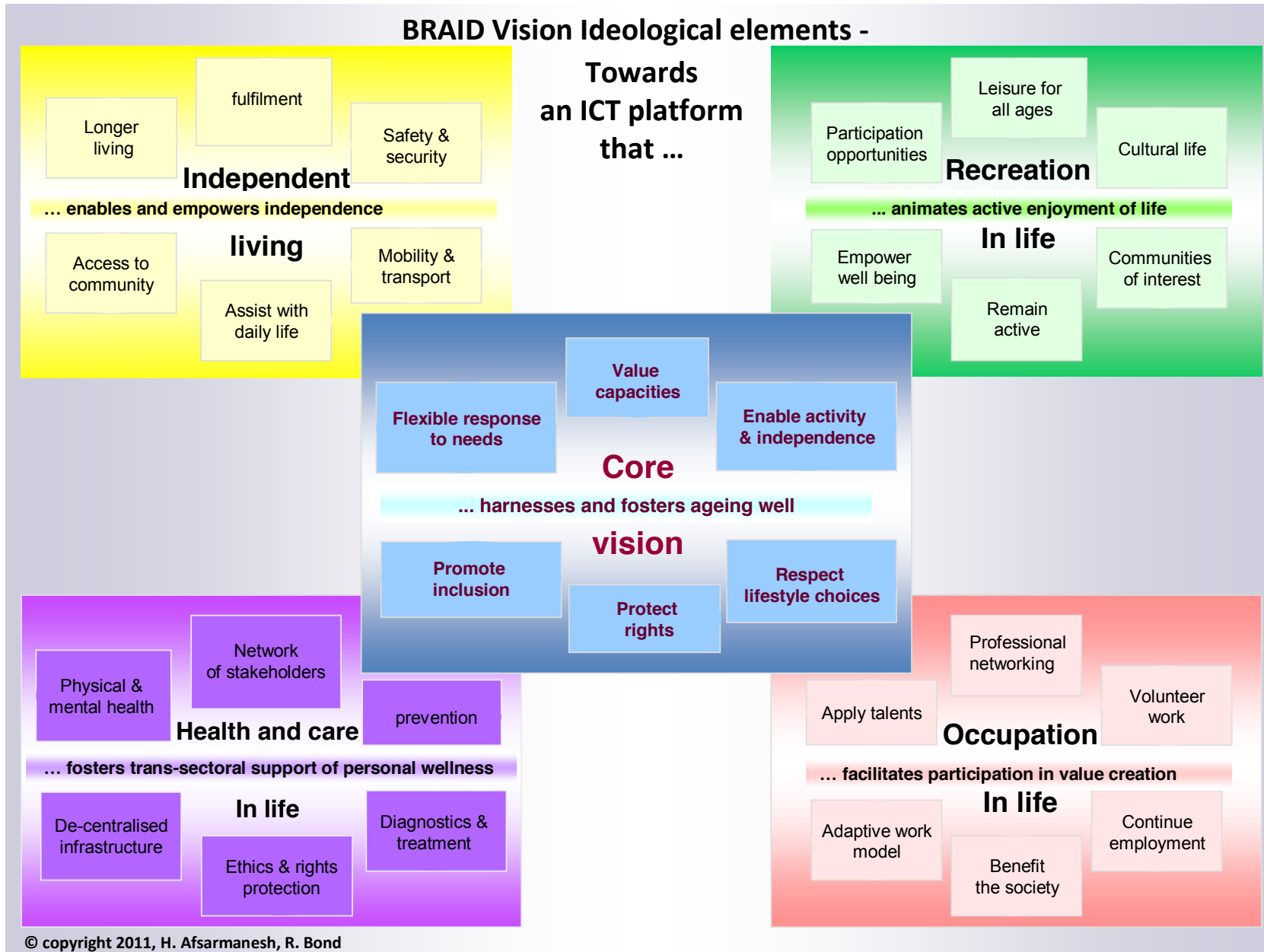


Figure 30: Main Ideological Elements of the BRAID Vision statements

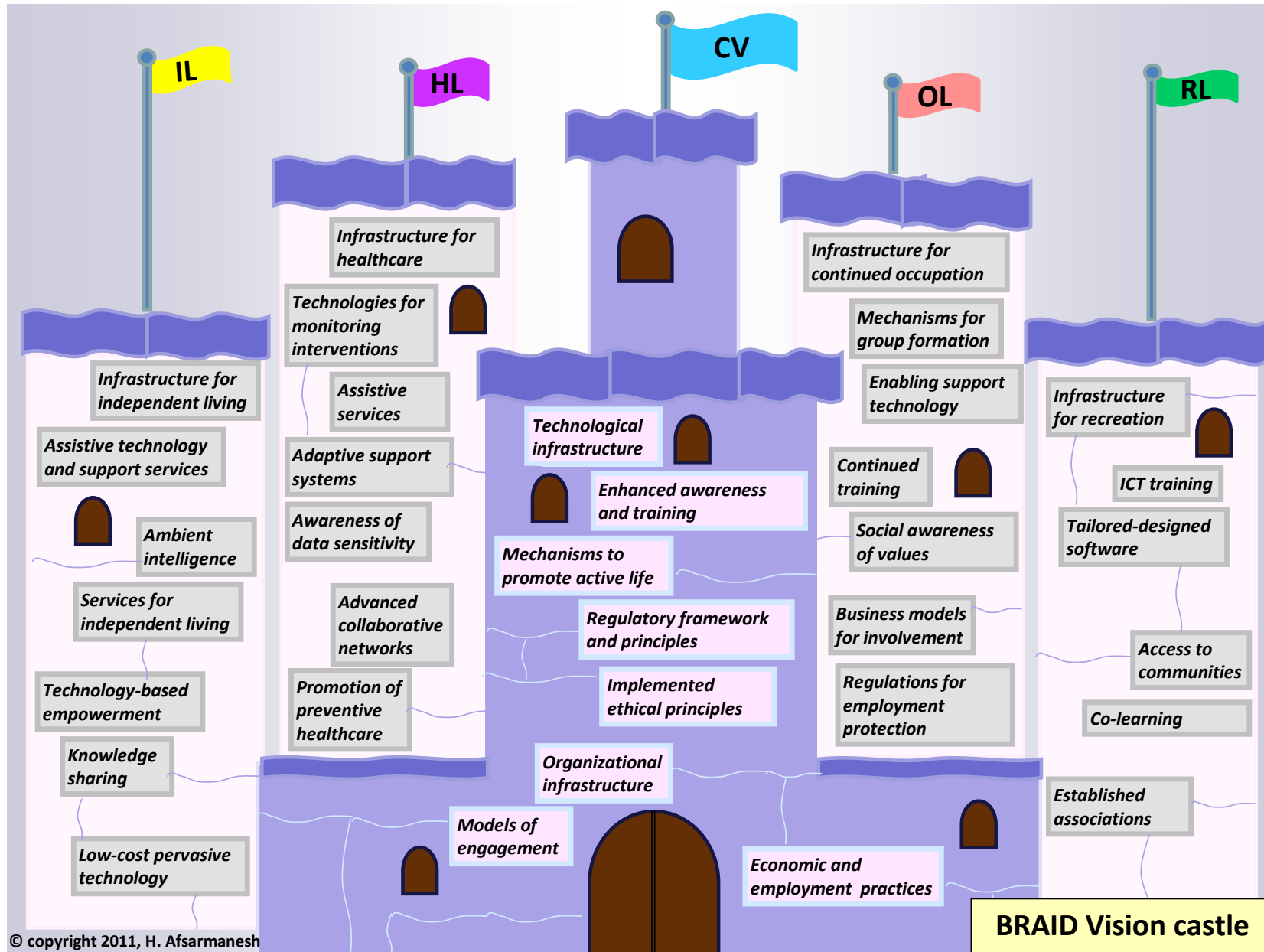


Figure 31: Facet bricks required for building the BRAID Vision Castle (CV flag indicates the Core Vision, IL flag the Independent Living, HC flag the Health and care in Life, OL flag the Occupation in Life, and RL flag the Recreation in Life)

Abstraction 3 -

In this illustration, presented in Figure 32, we focus on and present the inter-connections among different facets within each of the five vision statement. Here, for each vision statement, we intuitively assign connections between its facets and sort the facets according to these connections. These interconnected diagrams represent the relevance and closeness of each facet to the others, thus indicating that for their implementation action plans in the roadmap, which facets should be co-developed to correlate and feed their findings and output to each other. Clearly, the color code representing the facets of each vision follows the same colors which are introduced for them in Figure 30. Some more detailed analysis of the facet inter-relations within each vision statement follow:

- For the *core vision*, it is estimated that all of the facets are somewhat interconnected. This means that making progress in the achievement of one of the facets will probably influence the progress of all of the other facets positively. However, one distinction is made, namely grouping the facets V1, 2, 3 and 4 in the box. These facets are predicted to together build a strong foundation for realizing V5, 6 and 7.
- For *independent living*, more layers are identified. On the left, there are VIL1, and VIL7 which from the technical side represent the base for facilitating the deployment of technologies addressed by VIL2 and VIL3. Both building on and facilitating the application of these technologies from the human side are the rightmost group of facets, i.e. VIL4, 5, and 6, addressing services and training.
- For *health and care in life*, there are similar layers as for independent living. Leftmost is the infrastructure (VHL1), building on that are specific technologies (VHL2 and 4), followed by a layer of services and awareness (VHL3 and 5) which are pre-requisites for successfully applying technologies for implementing practices for users as addressed in VHL6 and 7.
- For *occupation in life*, the “foundation” layer is not only built of technology-related facets (VOL1 and 3) but also the required regulations (VOL7). Next to this foundation layer is a group of facets dedicated to changing organizational and economic habits (VOL2, 4 and 6). An extra spot is given to VOL5, the social awareness of values which is both influencing and influenced by habits.
- For *recreation in life*, there is one basic technology layer (VRL1 and 3), one layer addressing access to technologies and community (VRL2 and 4), and one “active” layer (VRL5 and 6) which is about the recreation activities.

Abstraction 4 -

In this illustration, presented in Figure 33, each of the 5 BRAID vision statements is represented in one oval, which is once again identified by a different color that is the same color representing it in Figure 30. This abstraction complements the abstraction presented in Figure 30, which presented the highlights of the ideological elements of each vision statement. Figure 33 instead presents the highlights of each facet defined within each of the five vision statements. Since the numbers of facets which are defined for each vision statement are not uniformed, neither is the number of smaller ovals illustrated within each bigger vision oval. Furthermore, similar to Figure 30, the abstraction illustrated in Figure 33 also presents that the aim of the BRAID initiative to *support the ageing well of European citizens through the ICT developments* will be captured once the facets defined within its 5 vision statements are achieved. This is similarly illustrated by the phrase in its title “Towards providing an ICT platform that...” which is again completed with the 5 phrases that appear in the middle of each vision square (similar to the explanation given in Abstraction 1).

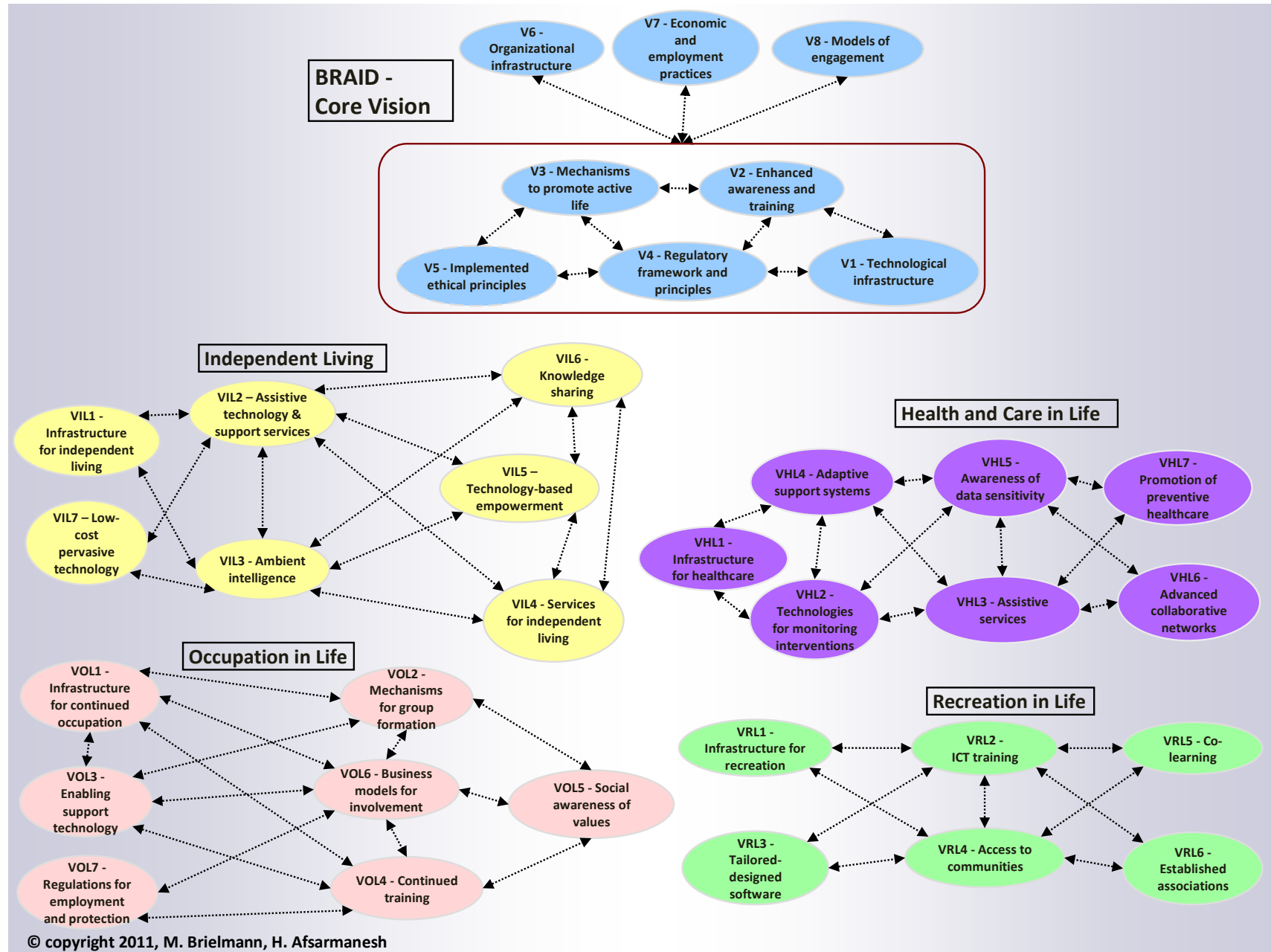


Figure 32: BRAID vision facets' inter-dependencies

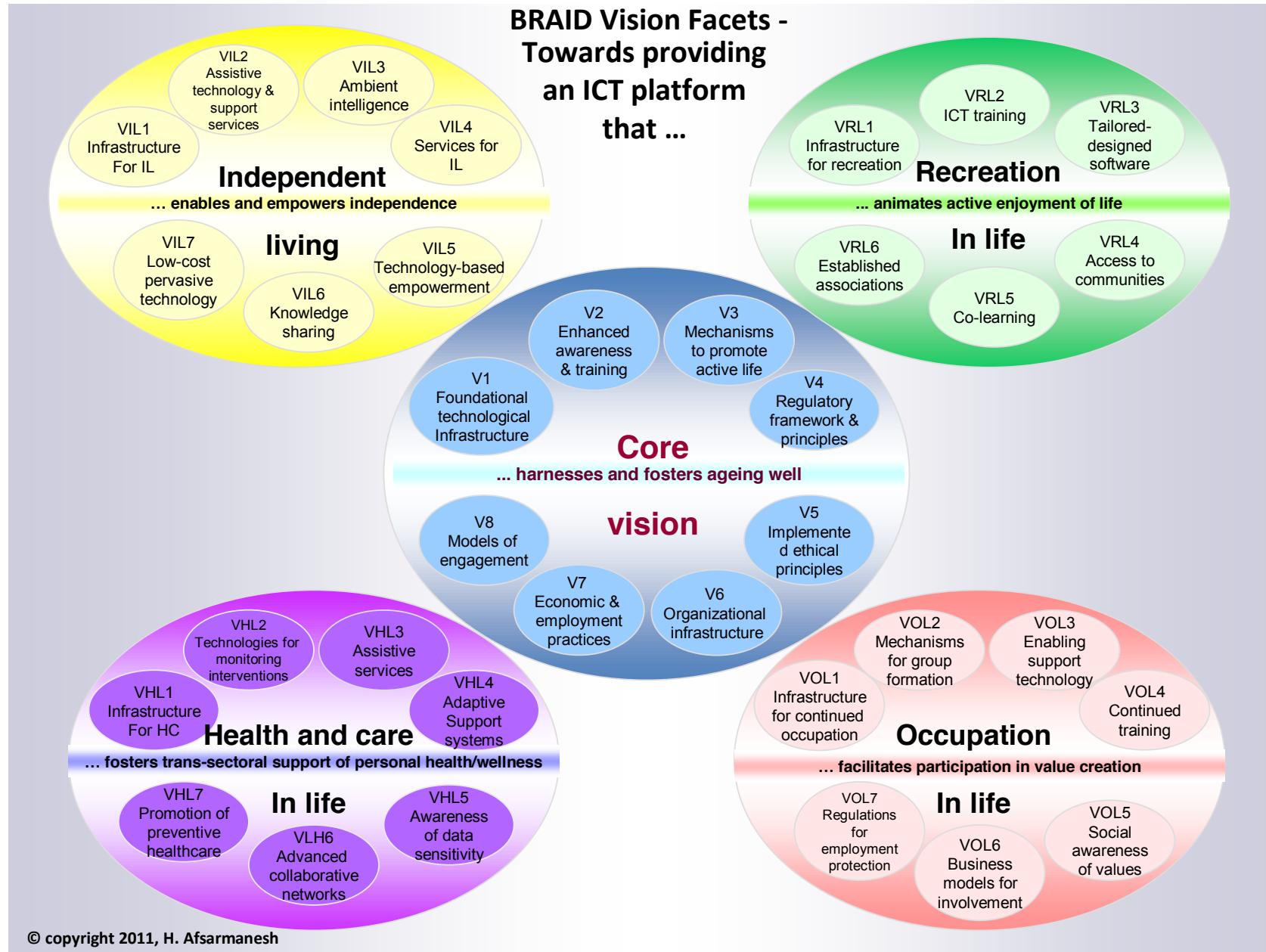


Figure 33: Facets of the BRAID Vision statements

Abstraction 5 -

In this illustration, presented in Figure 34, the highlights of the facet (as presented in previous abstractions) for each of the five vision statements is presented, but this time against the 5 BRAID's visioning driving forces, i.e., the Technological, the Societal, the Organizational, the Economic, and the Regulatory drivers. The color code applied to the vision statements, their facets, as well as the vision driving forces are all kept the same as in all other abstractions and illustrations generated during the visioning process, and as they appear in the deliverables of WP4. As it can be seen most vision statements include some facets which are related to several drivers. For instance considering the 7 facets of the Occupation in Life vision (the VOLs indicated by pink ovals) include facets related to all 5 driving forces, while the 6 facets of the Independent Living vision (the VILs indicated by yellow color) consists of 4 facts related to the technological driver, 1 facet related to the organizational driver, and another one related to both technological and societal driver, and so forth.

Abstraction 6 -

This illustration is presented in Figure 35, and focuses on distribution of all vision facets only from the perspective of the five vision driving forces. In other words it highlights the amount of effort needed within each driving force (technological, Societal, organizational, economic, and regulatory) to fully achieve the vision for BRAID. As such the number of identified facets of the five vision statements that fall within the area of each driving force are presented in the vicinity of the name of that driving force. For example there are 15 facets, introduced within the five vision statements of the BRAID, which are either fully or partially of technological nature, while there are 4 facets that are either fully or partially of regulatory nature, and so forth. Please note that many of the facets have more than one emphasis and so they are represented by two colors instead of one.

Please also note that while the facets are colored according to their primary driving force, which are represented by the five colors of dark-blue, pick, green, beige, and purple, we have also introduced one extra color light-blue which represents another dominating emphasis within the five vision statements. This emphasis is on **knowledge exchange and training**, and all 6 facets presented with the light-blue color are knowledge-related, while they are also of the nature of their closer driving force in the illustration.

In the following section, the importance of the theme of community establishment is taken up, as it is show to require special attention for the achievements of all 5 vision statements.

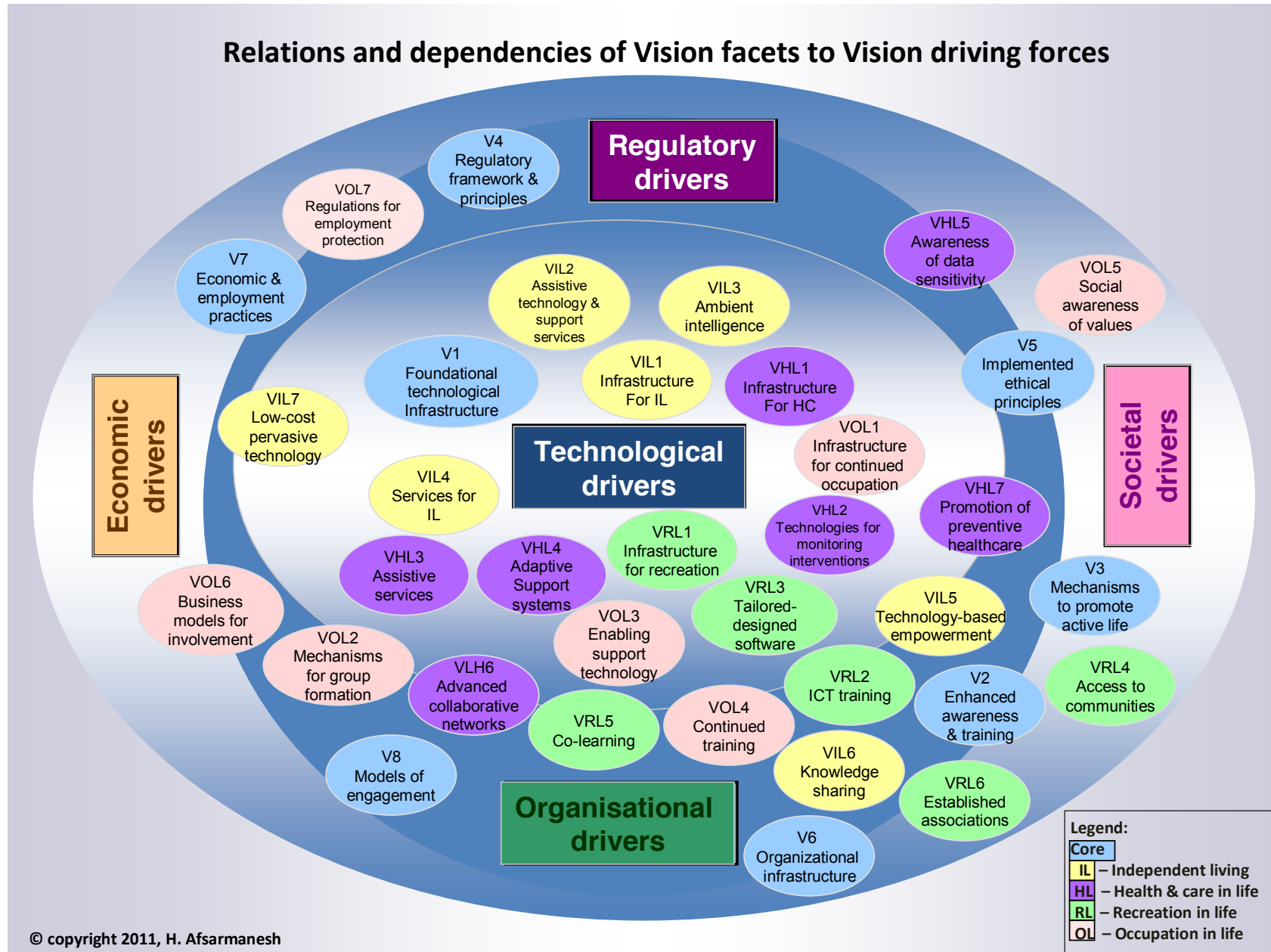


Figure 34: Relation of the BRAID vision facets to each BRAID driver

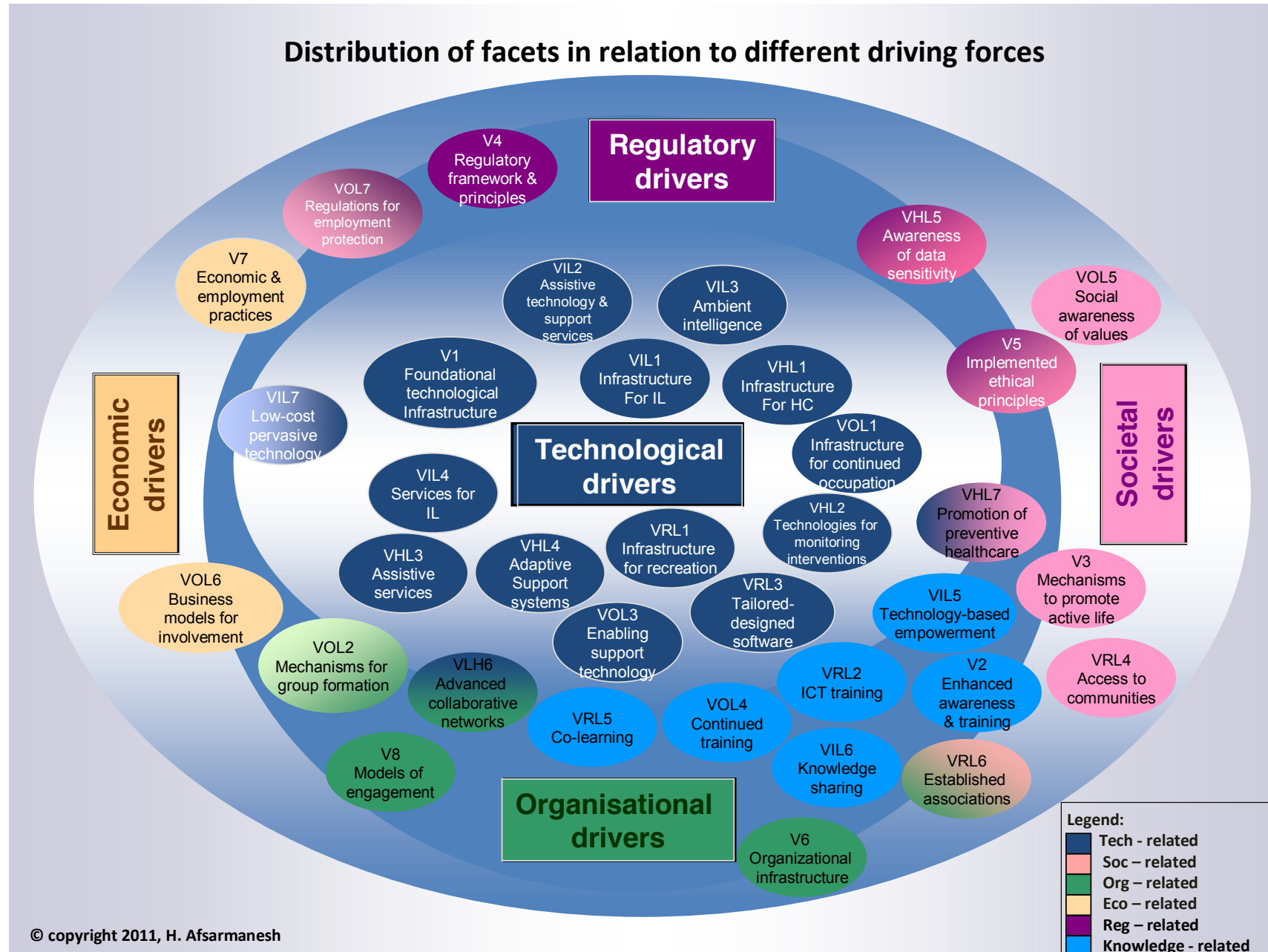


Figure 35: Focus of the vision facets from the driver's perspective

4.3.2 The Role of Communities in Achieving the BRAID's Vision

As introduced in section 1.3.6, in the first phase and deliverable D4.1 of the BRAID visioning process, indications were found that establishment of communities plays an important role in achieving the BRAID vision. This was also verified for all life settings, similar to what had been found in the ePAL feeder project of BRAID with the focus on professional activities. This hypothesis has been further confirmed during discussions with external experts and the comments given in the stakeholder meetings (see section 3). In addition, the stakeholder surveys, described in section 3 as well, gave information on the opinion of a bigger group of experts agreeing on this topic.

In this section, the relevance of communities for achieving the vision for each life setting is further discussed, taking into account the results that have been collected in the second phase of the BRAID visioning process.

4.3.2.1 Independent Living

The life setting of independent living is focusing at how a person can be facilitated to take care of everyday life activities as independently as he/she wishes and for as long as possible. Comments from the stakeholder workshops strengthened what had been addressed in the first deliverable, stating that other stakeholders, e.g. carers, family, and therapists need to be included in the picture. By giving independent living 4.1 out of 5 points for the necessity of community building, the survey participants confirmed that a network of stakeholders will be needed to support someone's "independence". This is not surprising. Ageing citizens have the need to keep up "normal" social contacts, e.g. interact with their friends in the community, as well as with relatives, some administration personnel, supermarket sales departments and other service providers e.g. for alarming critical situations. Therefore, we do see the need of establishment of communities, for the support of independent living.

4.3.2.2 Health and Care in Life

The life setting of health and care in life has also received comments similar to those of independent living, related to the networks of stakeholders. Again, in the stakeholder workshops it was commented that the network of family, friends, carers and therapists should be addressed. Although in the survey, healthy living/health and care in life received a slightly lower average of points for the need of community establishment than the other life settings, this average is still reasonably high. With 3.8 out of 5 points, participants clearly do see a need for communities. It is concluded, that even though health and care in life is considering the well-being of an individual, contact with others is needed in this context, e.g. with medical staff as doctors, nurses, home care providers, etc. as well as a network of other ageing citizens and relatives and friends, and community establishment plays an important role for that.

4.3.2.3 Occupation in Life

As introduced in section 1.3.6, recommendations for building communities in the context of occupation in life were given and formulated in ePAL, one of the BRAID feeder projects. There, the role of organized associations for continued active professional life is emphasized. ePAL elaborates a model of new organizational forms around the players introduced in section 1.3.6, in which the chance of the individual senior professional (SP) to be actively engaged in occupational activities is increased by becoming a member of a Community of Active Seniors Professionals (CASAP) as well as by sharing tasks with others in Teams of Senior Professionals (TSP), for collaboration on performing the required tasks. In the stakeholder survey, this need was confirmed by a rating of 4.1 out of 5 points. For helping ageing citizens in staying occupied if they desire or need to, the formation of these active communities needs to be supported, and should be given appropriate priority in the roadmap.

4.3.2.4 Recreation in Life

For the last life setting, recreation in life, comments from the stakeholder workshops confirmed that community involvement plays an important role. In the survey, with 4.1 out of 5 points, a clear need for community establishment was expressed as well. The necessity of establishing community will be different for each individual. Although almost all ageing citizens benefit from and consider regular contact with family and friends as a natural need, how much one is involved with hobbies and special interests, depends on the individual and his/her physical/emotional state. In general, the formation of communities will be beneficial to those interested in special activities of all ages. These communities can be of various characters, as e.g. virtual and/or real-world communities, communities of special interest or without special focus, inter-generational communities or with members of the same age, constant or ad-hoc communities etc. Therefore, these communities deserve further consideration.

In all of the four life settings, the need for community establishment has been emphasized. The character of these communities might be different – building supporting networks for individuals (independent living, health and care in life) vs. establishing communities for active involvement of citizens (occupation in life, recreation in life). However, it can be learned that in general, communities are of high relevance for BRAID and the achievement of its vision.

In the next section, a conclusion is given for this deliverable.

5 Conclusion

Europe's population is ageing at a fast pace. This is happening together with a number of other changes, creating new challenges and opportunities for the society and the market. The Bridging Research in ICT and Ageing (BRAID) project responds to these changes by developing a roadmap for the support of "ageing well" by ICT in general, recognizing that a holistic look at the topic is needed, both considering all driving forces involved in the changes to be made in society and all areas/settings of life for the ageing population. The project BRAID tackles the critical challenge for the European society to identify a roadmap for new structures, approaches, and mechanisms that support fulfilling the needs of ageing citizens in all areas of life, considering in particular that on the one hand nobody should feel excluded, and on the other hand everybody should have the choice to live an autonomous, independent life with dignity for as long as possible. The BRAID roadmap is based on the results from the four feeder projects of BRAID, i.e. AALIANCE, CAPSIL, ePAL, and SENIOR.

This document presents the final BRAID vision statements which sets the goal for the BRAID roadmap in support of the ageing citizens of Europe, using ICT solutions and is also the final product of the BRAID WP4. As described in section 1.2, this document focuses on the discussion of the second phase of the visioning process. In this phase, the 1st BRAID vision (produced in the first phase of the visioning process and documented in BRAID deliverable D4.1), is evaluated and refined.

For this purpose, in this second phase, the 1st BRAID vision was internally tested and validated (chapter 2), passed the critical examination by external stakeholders through several consensus building activities (chapter 3), and was finally refined based on the analysis of the collected feedback (section 4.1). The final vision with its instantiations into the four life settings of independent living, health and care in life, occupation in life, and recreation in life is documented in section 4.2. This is followed by different visualizations of the BRAID vision and a discussion of the relevance of communities for achieving the BRAID vision (chapter 5).

The BRAID vision which is the final result of the WP4 of BRAID constitutes a main input into the roadmap development of WP6. The roadmap process defines the detailed steps that need to be taken in order to implement and achieve the stated aims within the BRAID's vision, starting with the present state of the society related to the BRAID's environment.

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Appendix 1. The 1st Vision Statements of BRAID (Dec. 2010)

1st General BRAID VISION – for European Ageing Society

Core ideology: *Building a strong, cohesive and inclusive European platform that: embraces older people’s yearning to age well; values the broad range of capacities and resources among older people; supports and enables older Europeans to age actively and live independently; anticipates and responds flexibly to ageing related needs and preferences; respects older people’s decisions and lifestyle choices; protects those who are most vulnerable; promotes older people’s inclusion in, and contribution to different areas of community life*

Envisioned future: *By 2020, in the pursuit of Europe’s vision of smart, sustainable and inclusive growth, and in response to the challenges raised by a rapidly ageing demographic profile, on the basis of advanced ICT developments, complemented by societal, organizational, economical, and regulatory developments, Europeans, individually and collectively, will align their efforts and means to empower all senior citizens to age well regardless of gender, promoting their well being, valuing their social and economic contributions to society, and encouraging the pursuit of their fulfillment.*

Main desired facets:

- *Established technological infrastructure, with ICT applications, devices, tools & services that adapt to the population’s changing needs and support their quality of life as they age*
- *Achieved good understanding of a life course perspective on ageing, allowing a better preparation of individuals for this process and a more effective inter-generational linkage*
- *Improved positive, cross-societal attitude towards ageing and older people, and highly valued support mechanisms to motivate and empower seniors, taking into account social, functional and cultural differences, offering a rich variety of choices and opportunities for continued active life*
- *Developed policies, regulatory framework, and ethical principles – regionally, nationally, and across Europe - that provide an underpinning approach to supporting the needs of the elderly and simultaneously recognize, motivate, promote, and support the continued involvement and contribution of senior citizens to society*
- *Established organizational infrastructures and appropriate business models that facilitate the interaction between seniors and society, as well as the organized provision of all required services and support*
- *Established economic system and industrial practices, allowing active involvement of seniors by continuing their occupation and facilitating their value creation*
- *Validated new models of social and societal engagement for care, support, occupation, and recreation of senior citizens, ensuring the autonomy and dignity of the individual*

BRAID VISION instantiation – Independent Living

In the coming decade, senior citizens will be empowered to live long, fulfilling, and independent lives through support from technological, societal, organizational, economic, and regulatory mechanisms. This includes ensuring security, safety, mobility and transport, facilitating access to relatives, carers and the community, and assisting with daily life activities, such as house-keeping, buying food, and personal hygiene care among others, to be equipped to live independently.

Main desired facets:

- VIL1. Established infrastructure and networks as the base for the support of independent living by technology
- VIL2. Assistive technology and support services that facilitate independent living
- VIL3. Monitoring devices and technologies supporting ambient intelligence solutions
- VIL4. Supporting tools and environment that foster the development of technologies for independent living
- VIL5. Advanced set of organized and commercial services aiming to enhance diminishing abilities of seniors and caring for seniors so that they can live independently
- VIL6. Tools to ensure security, ethics, rights, and privacy on data and used services
- VIL7. Mechanisms to increase knowledge dissemination, training and learning through sharing both for seniors and all other stakeholders

BRAID VISION instantiation – Healthy Living

In the coming decade, as a part of the ageing well paradigm, support for healthy living will become a high priority strategy across Europe. The emerging health care technologies and services will be used in new ways in the society, across a distributed infrastructure focusing on decentralized models, while sensible to the ethical consequences of the introduced innovations and providing mechanisms for the protection of individual rights. Both business-based and societal organizations supporting healthcare will adapt to this new environment.

Main desired facets:

- VHL1. Regulatory and technological infrastructure to support consumer driven healthcare (supporting data privacy, standards)
- VHL2. Advanced devices, robots, and tools supporting interventions for monitoring and provision of health care
- VHL3. Information based assistive services supporting the health care of seniors and involvement of other stakeholders
- VHL4. Appropriately designed home based interventions and support systems, based on seniors’ cognitive and emotional status, which adapt whilst they age
- VHL5. Mechanisms to raise awareness on the formation of values, ethics, rights, and privacy on health related data and advanced ICT tools to ensure data security
- VHL6. Organized logistics and commercial networks of health care providers in the society, adapted to demographic change
- VHL7. Sensor based technologies, which are context aware, for healthcare support

BRAID VISION instantiation – Occupation in Life

In the coming decade, due to the ageing population in Europe, an opportunity will arise to create a new framework for a model of work selected by seniors and adapted as they age, enabling them to earn a living through continued employment or have some form of continued work engagement. This framework will require support for its technological, socio-organizational, legal and political aspects. The aimed vision capitalises on the talents and expertise of senior workers, facilitating value creation through the use of ICT for the benefit of the individual, the economy and European society as a whole.

Main desired facets:

- VOL1. Established technological infrastructure (including support for connectivity, mobility and cloud computing) as the base for senior professionals’ activities
- VOL2. Mechanisms to build associations of senior professionals and actively engage them, and support services for formation / management of teams of professionals
- VOL3. Advanced software environments to support seniors with adaptive personalized interfaces and affective interactions (within a context-aware and configure-yourself enriched environment)
- VOL4. Organized support for training and continued life-long learning for seniors
- VOL5. Increased social awareness about the value of senior professionals and their social cohesion and knowledge transfer (facilitating active involvement through networking, with emphasis on cross-generational and gender issues)
- VOL6. New business models for involvement of seniors within existing economical system
- VOL7. New policies and regulations for employment and protection of rights of senior professionals, particularly those who fall into other vulnerable groups (e.g. as a result of ethnicity, sexual orientation, gender, etc)

BRAID VISION instantiation – Recreation in Life

In the coming decade, ageing citizens will increase their pursuit of active recreational lifestyles that suit their abilities and preferences, which creates new opportunities for innovative supporting products and services. Recreation is seen as a broad set of activities involving peoples’ participation and enjoyment in cultural life, craft, hobbies, sport and physical activity, entertainment, socialising, travel & leisure, political engagement, spiritual and faith groups, life-long learning, passing on personal wisdom, history and experience, keeping pets, and playing games. Active recreational interests and lifestyles may improve mental well-being, and have a positive effect on the physical health and well-being of seniors. New technology solutions can support communications between seniors, families, friends, and peers, strengthening community participation and forming new communities and social networks with similar interests.

Main desired facets:

- VRL1. Infrastructure and required technological platforms (connectivity, communications and networking infrastructures and pervasive applications and services that are universally accessible)
- VRL2. Adequate features and training support to enable seniors to access and use ICT safely (free from harm) and with security (free from threat or intrusion)
- VRL3. Appropriately designed software services to support seniors with personalized interfaces and affection-based interactions, that can adapt to users’ sensory, cognitive and physical capabilities (within a context-aware and configure-yourself enriched environment)
- VRL4. Mechanisms to increase social cohesion, access to community and networking of seniors (including support for transport and mobility)
- VRL5. Growth and development mechanisms to increase knowledge dissemination and learning through sharing
- VRL6. Established associations of seniors and communities of interest, allowing active engagement (physically and virtually)

Figure 36: The 1st Vision Statements of BRAID

Appendix 2. Visioning Workshop Materials

- **Working session on vision: Relevance and amendment (75 min¹)**
 - ~10 Min: Short mutual introduction of group members (2 Min for everybody, name, company, position, relationship to BRAID topic)
 - ~10 Min: Reading individually and walk-through current vision drafts. BRAID project member explains the vision elements and the main thoughts behind it.
 - ~20 Min: Every team member votes on relevance of vision elements (scale of 1-5).
 - ~15 Min: Individual brainstorming: everybody gets a pack of Post-its and writes amendments to current vision on them.
 - ~20 Min¹: In turns, everybody places his/her post-its onto the vision posters while briefly explaining his/her thoughts and reasons for the amendments.


- **Parallel Working Groups (25 min¹)**
 - ~25 Min¹: The group speaker summarizes the findings in collaboration with the other group members and prepares the following presentation for the plenary

- **Plenary group presentations (30 min)**
 - 10 Min per group: Presentation of the main group results, by one of the group participants (*group speaker*) to the plenary and discussion.

¹ 5 min less in Pordenone

Figure 37: Instructions for group work

Validation of Correctness & Completeness – Global Vision



Core ideology:

Building a strong, cohesive and inclusive European platform that:
 Embraces older people's yearning to age well;
 Values the broad range of capacities and resources among older people;
 Supports and enables older Europeans to age actively and live independently;
 Anticipates and responds flexibly to ageing related needs and preferences;
 Respects older people's decisions and lifestyle choices;
 protects those who are most vulnerable;
 promotes older people's inclusion in, and contribution to different areas of community life.

Envisioned future:

By 2020, in the pursuit of Europe's vision of smart, sustainable and inclusive growth, and in response to the challenges raised by a rapidly ageing demographic profile, on the basis of advanced ICT developments, complemented by societal, organizational, economical, and regulatory developments, Europeans, individually and collectively, will align their efforts and means to empower all senior citizens to age well regardless of gender, promoting their well being, valuing their social and economic contributions to society, and encouraging the pursuit of their fulfillment.

Main desired facets:

- V1. Established technological infrastructure, with ICT applications, devices, tools & services to adapt to the population's changing needs and support their quality of life as they age
- V2. Good understanding of a life course perspective on ageing, allowing a better preparation of individuals for this process and a more effective inter-generational linkage
- V3. Positive, cross-societal attitude towards ageing and older people, and highly valued support mechanisms to motivate and empower seniors, taking into account social, functional and cultural differences, and offering a rich variety of choices and opportunities for continued active life
- V4. Policies, regulatory framework, and ethical principles – regionally, nationally, and across Europe - to provide an underpinning approach to support the needs of the elderly and simultaneously recognize, motivate, promote, and support the continued involvement and contribution of senior citizens to society
- V5. Established organizational infrastructures and appropriate business models that facilitate the interaction between seniors and society, as well as the organized provision of all required services and support
- V6. Economic system and industrial practices, allowing active involvement of seniors by continuing their occupation and facilitating their value creation
- V7. New models of social and societal engagement for care, support, occupation, and recreation of senior citizens, ensuring the autonomy and dignity of the individual

How suitable is this vision as a whole?

Little Very

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How important is the achievement of each facet?

Little Very

Figure 38: Poster for feedback on core vision

Validation of Correctness & Completeness – Independent Living

In the coming decade, senior citizens will be empowered to live long, fulfilling, and independent lives through support from technological, societal, organizational, economic, and regulatory mechanisms. This includes ensuring security, safety, mobility and transport, facilitating access to relatives, carers and the community, and assisting with daily life activities, such as house-keeping, buying food, and personal hygiene care among others, to be equipped to live independently.

Main desired facets:

- VIL1.** Established infrastructure and networks as the base for the support of independent living by technology
- VIL2.** Assistive technology and support services that facilitate independent living
- VIL3.** Monitoring devices and technologies supporting ambient intelligence solutions
- VIL4.** Supporting tools and environment that foster the development of technologies for independent living
- VIL5.** Advanced set of organized and commercial services aiming to enhance diminishing abilities of seniors and caring for seniors so that they can live independently
- VIL6.** Tools to ensure security, ethics, rights, and privacy on data and used services
- VIL7.** Mechanisms to increase knowledge dissemination, training and learning through sharing both for seniors and all other stakeholders

How suitable is this vision as a whole?

Little Very

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How important is the achievement of each facet?

Little Very

Figure 39: Poster for feedback on vision for independent living

Validation of Correctness & Completeness – Healthy Living

In the coming decade, as a part of the ageing well paradigm, support for healthy living will become a high priority strategy across Europe. The emerging health care technologies and services will be used in new ways in the society, across a distributed infrastructure focusing on decentralized models, while sensible to the ethical consequences of the introduced innovations and providing mechanisms for the protection of individual rights. Both business-based and societal organizations supporting healthcare will adapt to this new environment.

Main desired facets:

- VHL1.** Regulatory and technological infrastructure to support consumer driven healthcare (supporting data privacy, standards)
- VHL2.** Advanced devices, robots, and tools supporting interventions for monitoring and provision of health care
- VHL3.** Information based assistive services supporting the health care of seniors and involvement of other stakeholders
- VHL4.** Appropriately designed home based interventions and support systems, based on seniors' cognitive and emotional status, which adapt whilst they age
- VHL5.** Mechanisms to raise awareness on the formation of values, ethics, rights, and privacy on health related data and advanced ICT tools to ensure data security
- VHL6.** Organized logistics and commercial networks of health care providers in the society, adapted to demographic change
- VHL7.** Sensor based technologies, which are context aware, for healthcare support

How suitable is this vision as a whole?

Little Very

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How important is the achievement of each facet?

Little Very

Figure 40: Poster for feedback on vision for health and care in life

Validation of Correctness & Completeness – Occupation in Life



In the coming decade, due to the ageing population in Europe, an opportunity will arise to create a new framework for a model of work selected by seniors and adapted as they age, enabling them to earn a living through continued employment or have some form of continued work engagement. This framework will require support for its technological, socio-organizational, legal and political aspects. The aimed vision capitalises on the talents and expertise of senior workers, facilitating value creation through the use of ICT for the benefit of the individual, the economy and European society as a whole.

Main desired facets:

- VOL1.** Established technological infrastructure (including support for connectivity, mobility and cloud computing) as the base for senior professionals' activities
- VOL2.** Mechanisms to build associations of senior professionals and actively engage them, and support services for formation / management of teams of professionals
- VOL3.** Advanced software environments to support seniors with adaptive personalized interfaces and affective interactions (within a context-aware and configure-yourself enriched environment)
- VOL4.** Organized support for training and continued life-long learning for seniors
- VOL5.** Increased social awareness about the value of senior professionals and their social cohesion and knowledge transfer (facilitating active involvement through networking, with emphasis on cross-generational and gender issues)
- VOL6.** New business models for involvement of seniors within existing economical system
- VOL7.** New policies and regulations for employment and protection of rights of senior professionals, particularly those who fall into other vulnerable groups (e.g. as a result of ethnicity, sexual orientation, gender, etc)

How suitable is this vision as a whole?

Little Very

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How important is the achievement of each facet?

Little Very

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Figure 41: Poster for feedback on vision for occupation in life

Validation of Correctness & Completeness – Recreation in Life



In the coming decade, ageing citizens will increase their pursuit of active recreational lifestyles that suit their abilities and preferences, which creates new opportunities for innovative supporting products and services. Recreation is seen as a broad set of activities involving peoples' participation and enjoyment in cultural life, craft, hobbies, sport and physical activity, entertainment, socialising, travel & leisure, political engagement, spiritual and faith groups, life-long learning, passing on personal wisdom, history and experience, keeping pets, and playing games. Active recreational interests and lifestyles may improve mental well-being, and have a positive effect on the physical health and well-being of seniors. New technology solutions can support communications between seniors, families, friends, and peers, strengthening community participation and forming new communities and social networks with similar interests.

Main desired facets:

- VRL1.** Infrastructure and required technological platforms (connectivity, communications and networking infrastructures and pervasive applications and services that are universally accessible)
- VRL2.** Adequate features and training support to enable seniors to access and use ICT safely (free from harm) and with security (free from threat or intrusion)
- VRL3.** Appropriately designed software services to support seniors with personalized interfaces and affection-based interactions, that can adapt to users' sensory, cognitive and physical capabilities (within a context-aware and configure-yourself enriched environment)
- VRL4.** Mechanisms to increase social cohesion, access to community and networking of seniors (including support for transport and mobility)
- VRL5.** Growth and development mechanisms to increase knowledge dissemination and learning through sharing
- VRL6.** Established associations of seniors and communities of interest, allowing active engagement (physically and virtually)

How suitable is this vision as a whole?

Little Very

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How important is the achievement of each facet?

Little Very

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Figure 42: Poster for feedback on vision for recreation in life

Appendix 3. Stakeholder participants and contributors

A3.1. Barcelona Workshop Participants

<i>Name</i>	<i>Organization</i>
BRAID Advisory Board	
Filippo Cavallo	Scuola Superiore Sant’Anna – ARTS Lab
Ilenia Gheno	AGE-Platform Europe
Pekka Ala-Siuru	University of Oulu
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Andreu Català	UPC - Technical Research Centre for Dependency Care and Autonomous Living
Carmen Pastor	Tecnalia
Cristian Barrié	Technical University of Catalunya
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Benjamin Knapp	QUB
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Wolfgang Gessner	VDI/VDE-IT
David Wright	TRI
Emilio Mordini	CSSC
Emma Garnett	CSSC

<i>Name</i>	<i>Organization</i>
Holly Ashton	CSSC
Kush Wadhwa	GSI
Liz Cummings	UTAS

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<i>Name</i>	<i>Organization</i>
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Verena Bleich	International Information Centre for Terminology
George Kourousias	University of Trieste
Enrico Neri	Vegan Solutions
Marino Nicolich	University of Trieste
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Vesna Dolničar	University of Ljubljana
Janez Malovrh	Slovene Federation of Pensioners' Associations
Sergio Bellucci	Centre for Technology Assessment SWISS
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John Llewellyn	Llewellyn Consulting
Alex Zhavoronkov	The International Aging Research Portfolio
Massimiliano Bertetti	Polo Tecnologico di Pordenone
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Emilio Mordini	CSSC

<i>Name</i>	<i>Organization</i>
Emma Garnett	CSSC
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A3.3. Copenhagen Workshop Participants

<i>Name</i>	<i>Organization</i>
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Jens Clausen	University of Tübingen
Jesper Thestrup	InJet
Karen Andersen Ranberg	Danish Ageing Research centre
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Olav Aarts	TNO
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Simon Dobrišek	University Of Ljubljana
Kare Synnes	Lulea University of Technology
Erland Winterberg	Nordic Centre for Welfare and Social Issues
James Barlow	Imperial College Business School
Joanna Rae	Business Lab
Oliver Davis	Warwick University
Siân Lindley	Microsoft UK

<i>Name</i>	<i>Organization</i>
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Kush Wadhwa	Global Security Inc.
Rachel Finn	Trilateral Research & Consulting
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A3.4. Participants of Remote Validation Process

<i>Name</i>	<i>Organization</i>	<i>Country</i>
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Javier Bonal	European Commission	Belgium
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Pedro Sanz Angulo	University of Valladolid	Spain
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Name	Organization	Country
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António Osório	University of Minho	Portugal
Pedro Campos	University of Porto, Faculty of Economics	Portugal
Ovidiu Noran	Griffith University	Australia
Chinmay Das	Ajay Binay Institute of Technology	India
Giuseppe Stecca	ITIA-CNR	Italy
Donald Neumann	Universität Stuttgart	Germany

Appendix 4. Result analysis from the In-Depth Workshops

A4.1. Results from Barcelona visioning workshop

A4.1.1. Core Vision

How suitable is this vision as a whole?

1 (Little)	2	3	4	5 (Very)
0	1	2	7	9

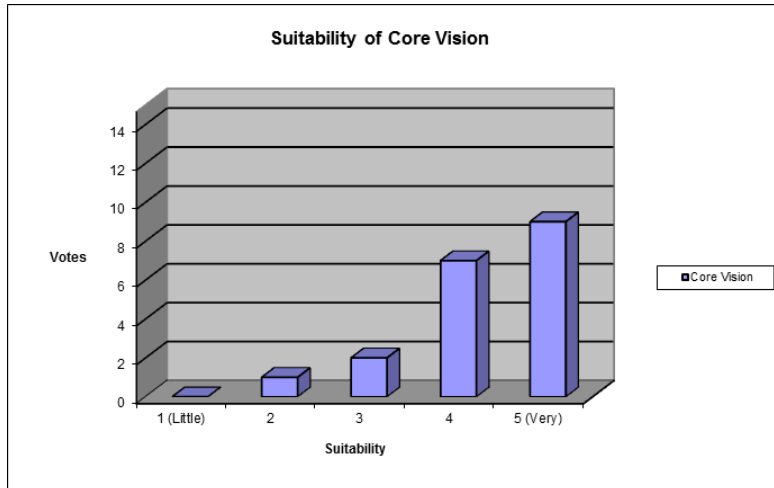


Figure 43: Votes for suitability of core vision in Barcelona

How important is the achievement of each facet?

Facet	1 (Little)	2	3	4	5 (Very)
V1	0	0	1	5	13
V2	0	1	3	5	10
V3	0	0	4	8	7
V4	0	1	0	8	10
V5	0	1	2	5	11
V6	0	3	4	7	5
V7	0	0	0	6	13

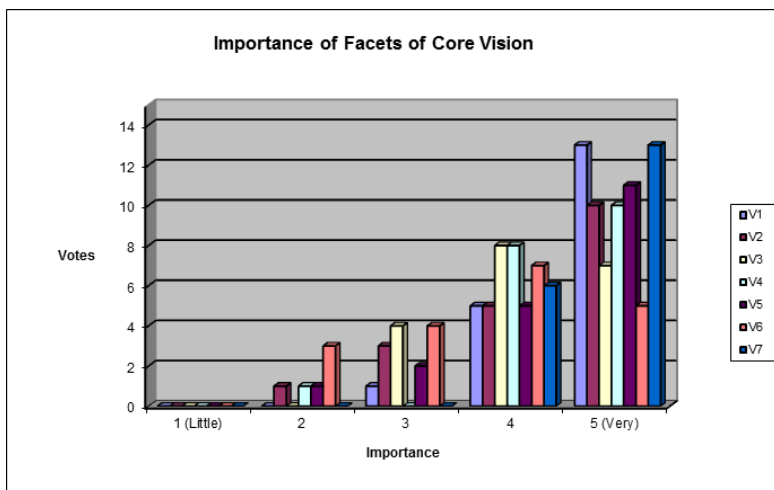


Figure 44: Votes for importance of facets of core vision in Barcelona

A4.1.2. Vision for Independent Living

How suitable is this vision as a whole?

1 (Little)	2	3	4	5 (Very)
0	2	1	5	11

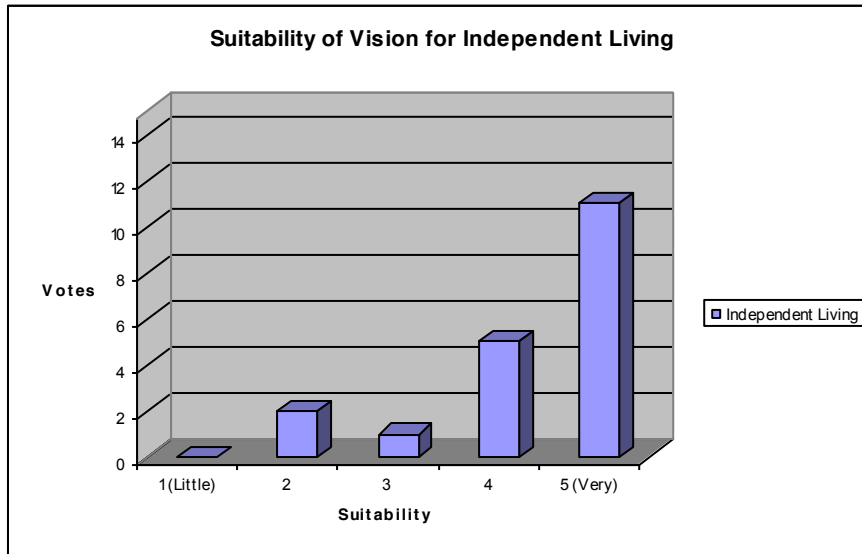


Figure 45: Votes for suitability of vision for independent living in Barcelona

How important is the achievement of each facet?

Facet	1 (Little)	2	3	4	5 (Very)
VIL1	0	1	1	7	10
VIL2	0	2	1	5	11
VIL3	0	2	1	9	7
VIL4	0	1	2	9	7
VIL5	0	1	2	7	9
VIL6	0	1	2	8	8
VIL7	0	1	4	6	8

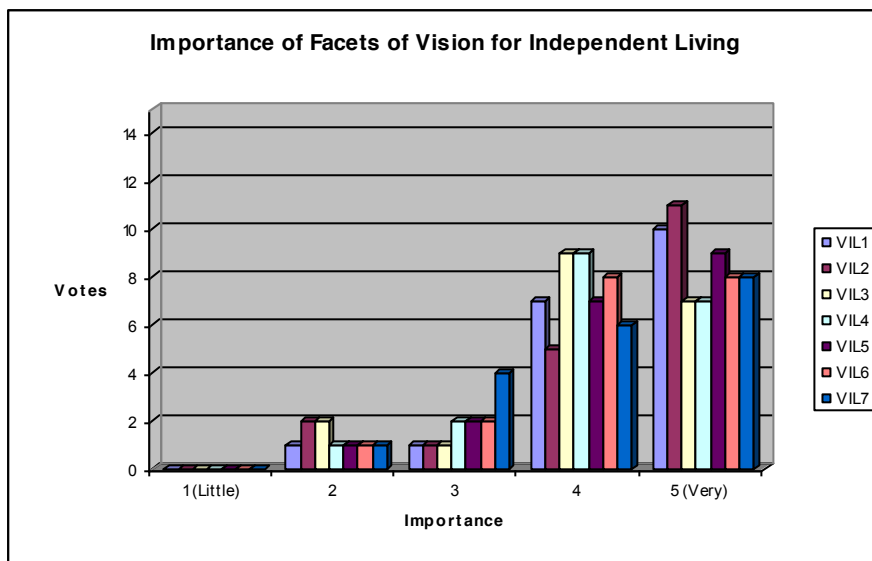


Figure 46: Votes for importance of facets of vision for independent living in Barcelona

A4.1.3. Vision for Health and Care in Life

How suitable is this vision as a whole?

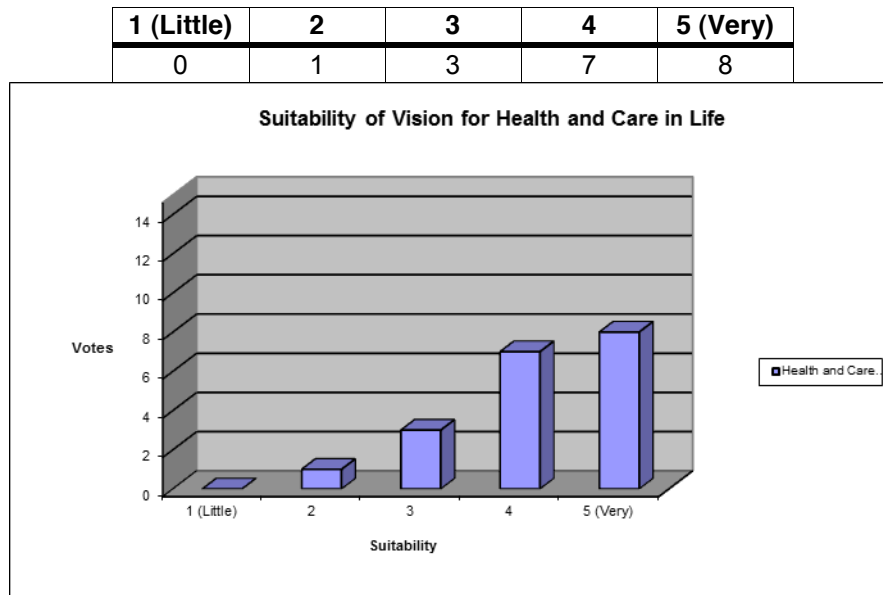


Figure 47: Votes for suitability of vision for health and care in life in Barcelona

How important is the achievement of each facet?

Facet	1 (Little)	2	3	4	5 (Very)
VHL1	0	1	2	9	7
VHL2	0	2	2	5	10
VHL3	0	1	1	7	10
VHL4	0	1	3	4	11
VHL5	0	1	3	9	6
VHL6	0	2	1	9	7
VHL7	0	2	1	4	12

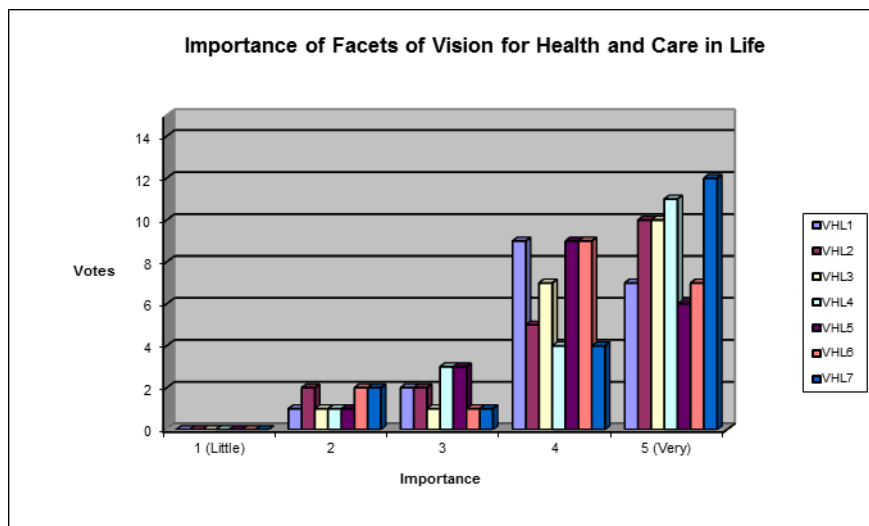


Figure 48: Votes for importance of facets of vision for health and care in life in Barcelona

A4.1.4. Vision for Occupation in Life

How suitable is this vision as a whole?

1 (Little)	2	3	4	5 (Very)
0	4	4	3	8

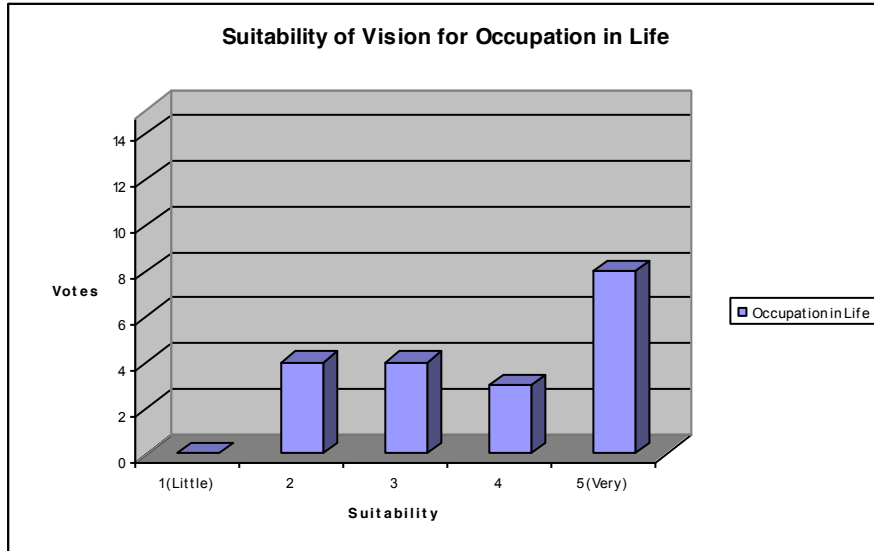


Figure 49: Votes for suitability of vision for occupation in life in Barcelona

How important is the achievement of each facet?

Facet	1 (Little)	2	3	4	5 (Very)
VOL1	1	0	6	5	7
VOL2	0	0	4	9	6
VOL3	1	2	1	6	9
VOL4	0	1	3	4	11
VOL5	0	1	1	2	15
VOL6	2	0	2	3	12
VOL7	1	0	4	3	11

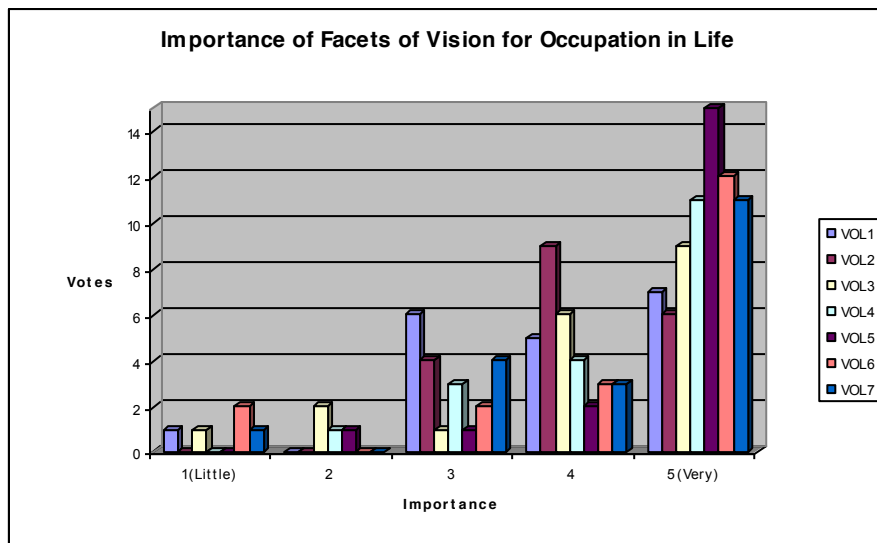


Figure 50: Votes for importance of facets of vision for occupation in life in Barcelona

A4.1.5. Vision for Recreation in Life

How suitable is this vision as a whole?

1 (Little)	2	3	4	5 (Very)
0	0	3	7	9

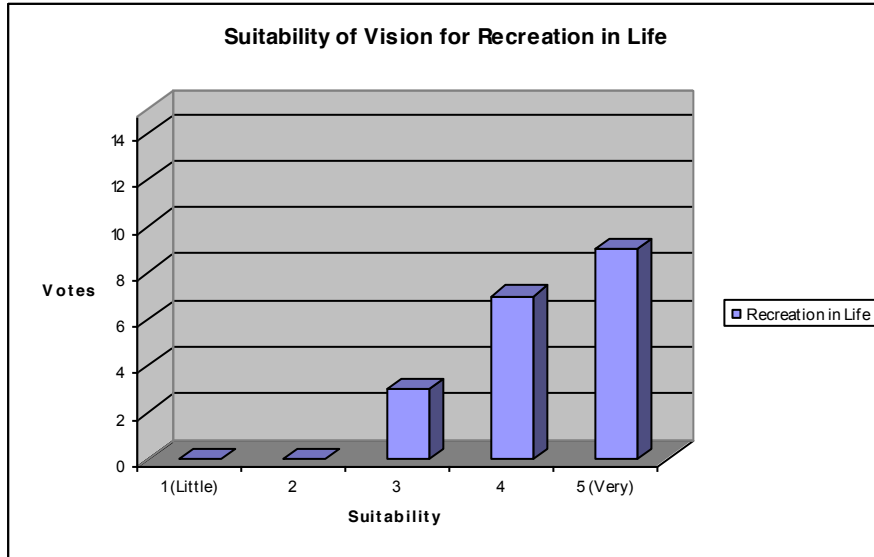


Figure 51: Votes for suitability of vision for recreation in life in Barcelona

How important is the achievement of each facet?

Facet	1 (Little)	2	3	4	5 (Very)
VRL1	1	0	1	7	10
VRL2	1	0	1	8	9
VRL3	1	0	2	7	9
VRL4	0	0	1	8	10
VRL5	0	0	3	6	10
VRL6	0	0	1	8	10

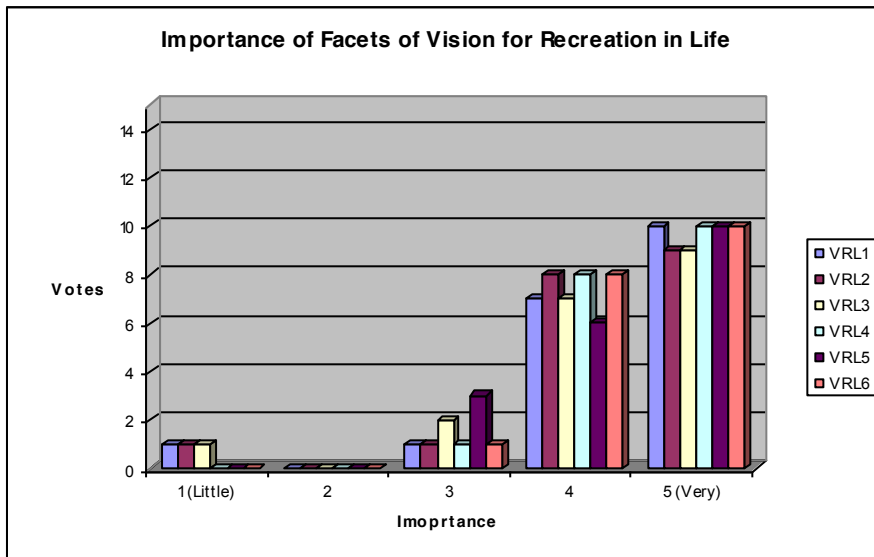


Figure 52: Votes for importance of facets of vision for recreation in Life in Barcelona

A4.2. Results from Pordenone visioning workshop

A4.2.1. Core Vision

How suitable is this vision as a whole?

1 (Little)	2	3	4	5 (Very)
0	0	2	12	7

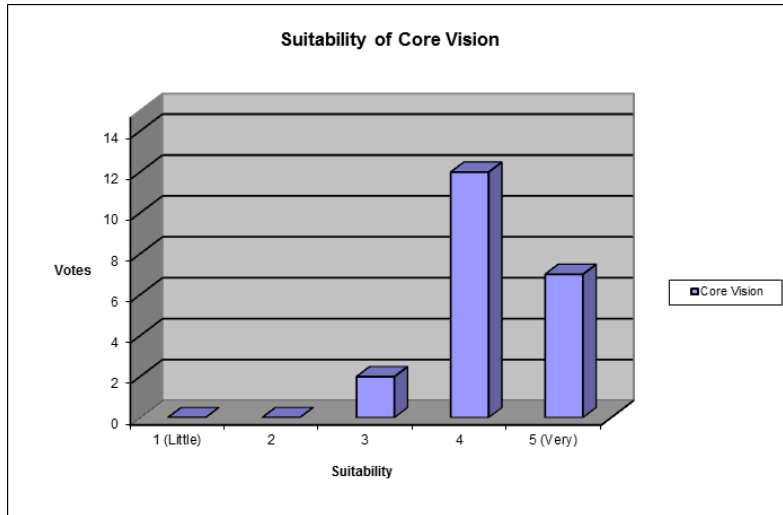


Figure 53: Votes for suitability of core vision in Pordenone

How important is the achievement of each facet?

Facet	1 (Little)	2	3	4	5 (Very)
V1	0	0	2	6	13
V2	1	0	6	3	11
V3	0	0	5	5	11
V4	0	0	3	5	13
V5	0	1	4	11	5
V6	1	1	2	8	9
V7	0	2	4	7	8

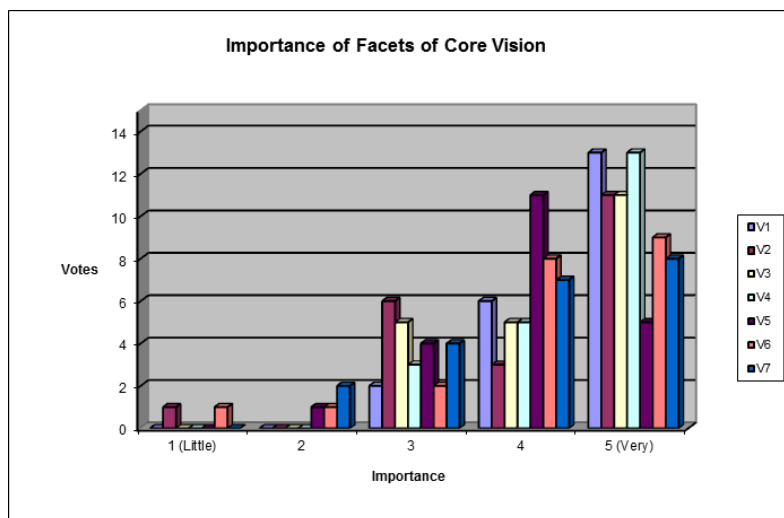


Figure 54: Votes for importance of facets of core vision in Pordenone

A4.2.2. Vision for Independent Living

How suitable is this vision as a whole?

1 (Little)	2	3	4	5 (Very)
0	0	3	13	5

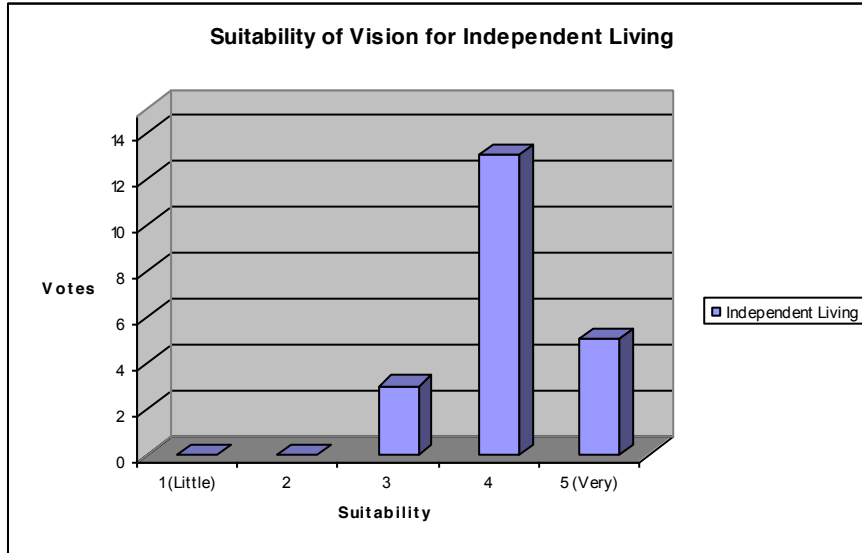


Figure 55: Votes for suitability of vision for independent living in Pordenone

How important is the achievement of each facet?

Facet	1 (Little)	2	3	4	5 (Very)
VIL1	0	0	3	8	10
VIL2	0	0	2	8	11
VIL3	0	0	3	10	8
VIL4	0	0	3	9	9
VIL5	0	0	3	8	10
VIL6	1	3	2	6	9
VIL7	0	0	2	8	11

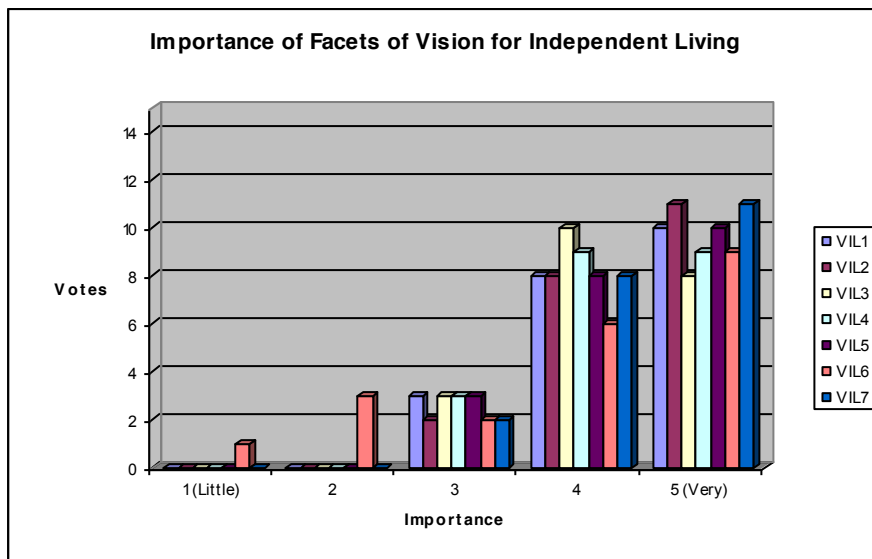


Figure 56: Votes for importance of facets of vision for independent living in Pordenone

A4.2.3. Vision for Health and Care in Life

How suitable is this vision as a whole?

1 (Little)	2	3	4	5 (Very)
0	1	2	9	9

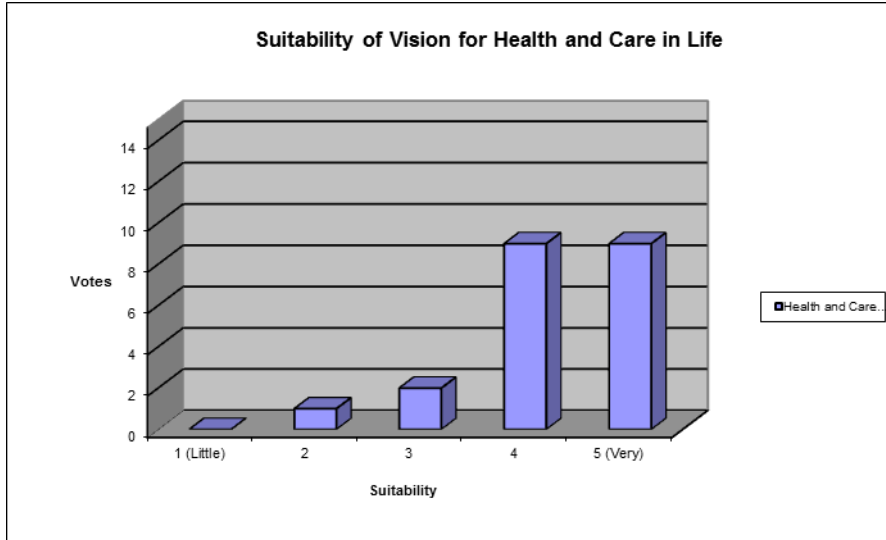


Figure 57: Votes for suitability of vision for health and care in life in Pordenone

How important is the achievement of each facet?

Facet	1 (Little)	2	3	4	5 (Very)
VHL1	0	1	1	9	10
VHL2	1	3	3	8	6
VHL3	0	0	3	6	12
VHL4	1	0	1	6	13
VHL5	1	2	5	6	7
VHL6	0	1	2	10	8
VHL7	0	0	5	8	8

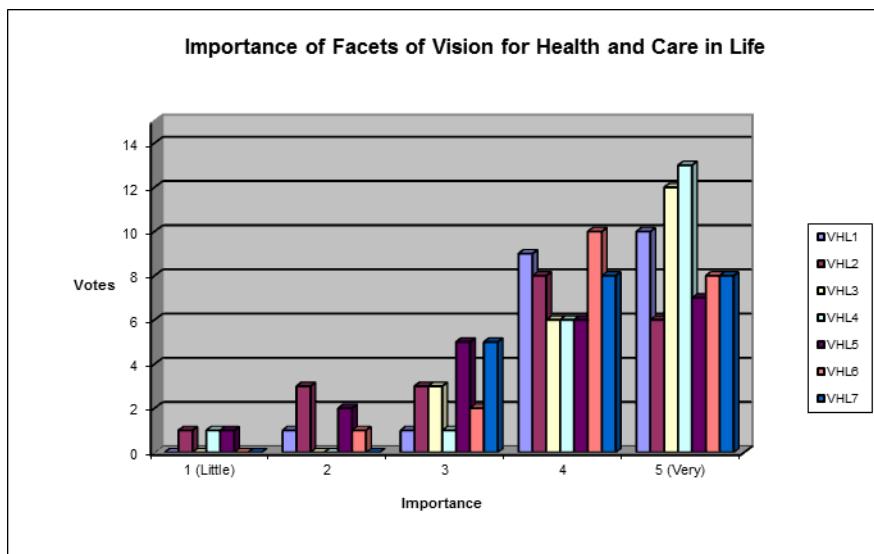


Figure 58: Votes for importance of facets of vision for health and care in life in Pordenone

A4.2.4. Vision for Occupation in Life

How suitable is this vision as a whole?

1 (Little)	2	3	4	5 (Very)
0	0	1	9	11

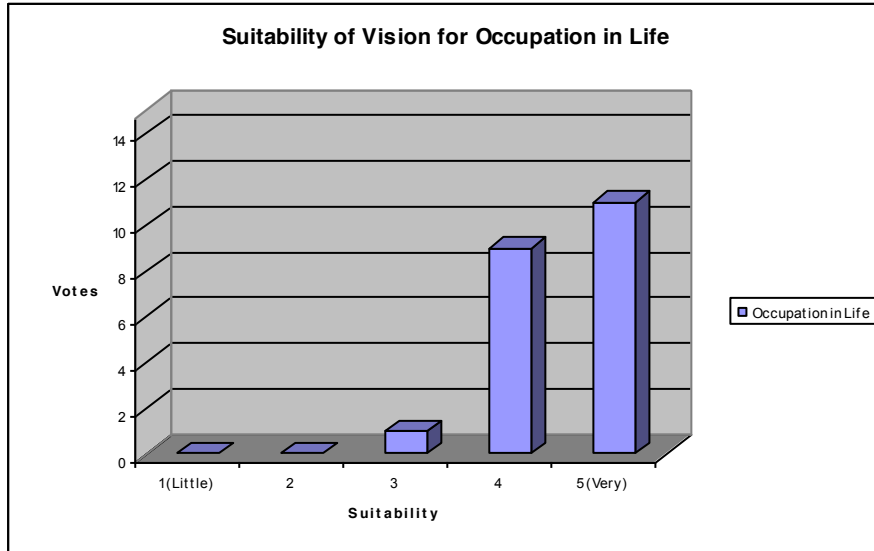


Figure 59: Votes for suitability of vision for occupation in life in Pordenone

How important is the achievement of each facet?

Facet	1 (Little)	2	3	4	5 (Very)
VOL1	0	0	4	9	8
VOL2	0	2	7	5	7
VOL3	0	3	3	7	8
VOL4	0	1	2	7	11
VOL5	0	0	5	5	11
VOL6	0	3	3	4	11
VOL7	2	0	2	10	7

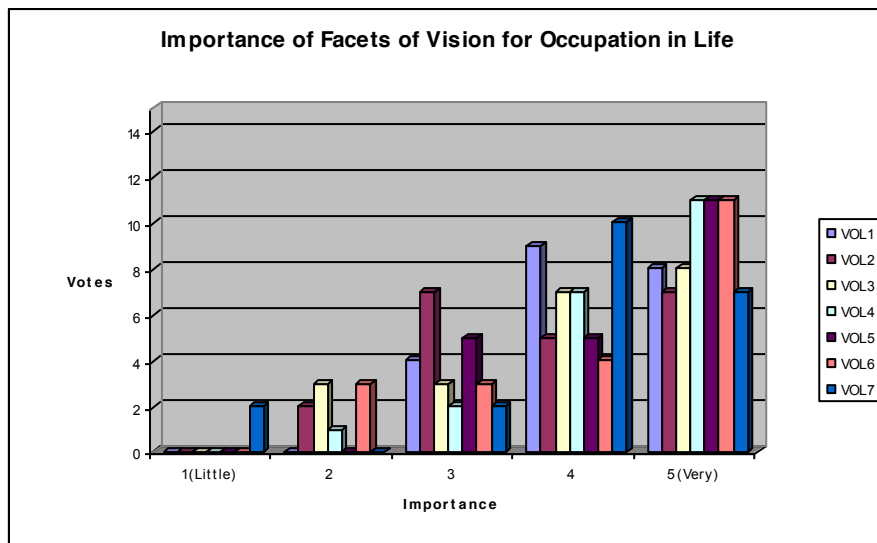


Figure 60: Votes for importance of facets of vision for occupation in life in Pordenone

A4.2.5. Vision for Recreation in Life

How suitable is this vision as a whole?

1 (Little)	2	3	4	5 (Very)
0	0	4	9	8

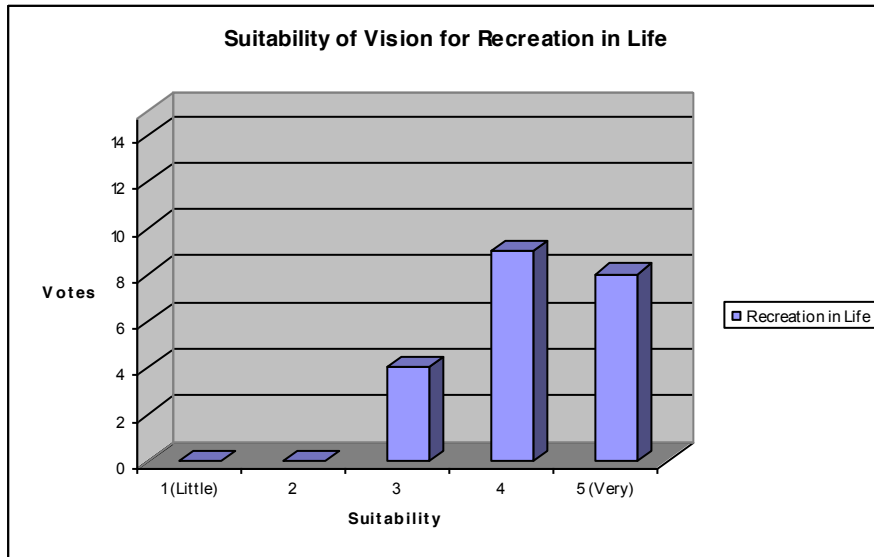


Figure 61: Votes for suitability of vision for recreation in life in Pordenone

How important is the achievement of each facet?

Facet	1 (Little)	2	3	4	5 (Very)
VRL1	0	0	3	10	8
VRL2	0	2	3	7	9
VRL3	0	0	4	11	6
VRL4	0	0	5	5	11
VRL5	1	3	3	5	9
VRL6	2	2	3	8	6

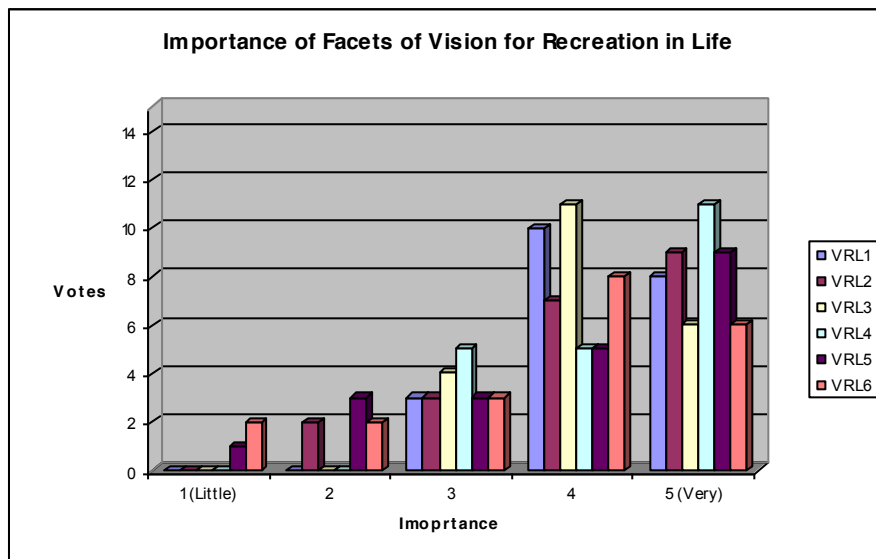


Figure 62: Votes for importance of facets of vision for recreation in life in Pordenone

A4.3. Summarized merged results from Barcelona and Pordenone

A4.3.1. Core Vision

How important is the achievement of each facet?

Facet	1 (Little)	2	3	4	5 (Very)
V1	0	0	3	11	26
V2	1	1	9	8	21
V3	0	0	9	13	18
V4	0	1	3	13	23
V5	0	2	6	16	16
V6	1	4	6	15	14
V7	0	2	4	13	21

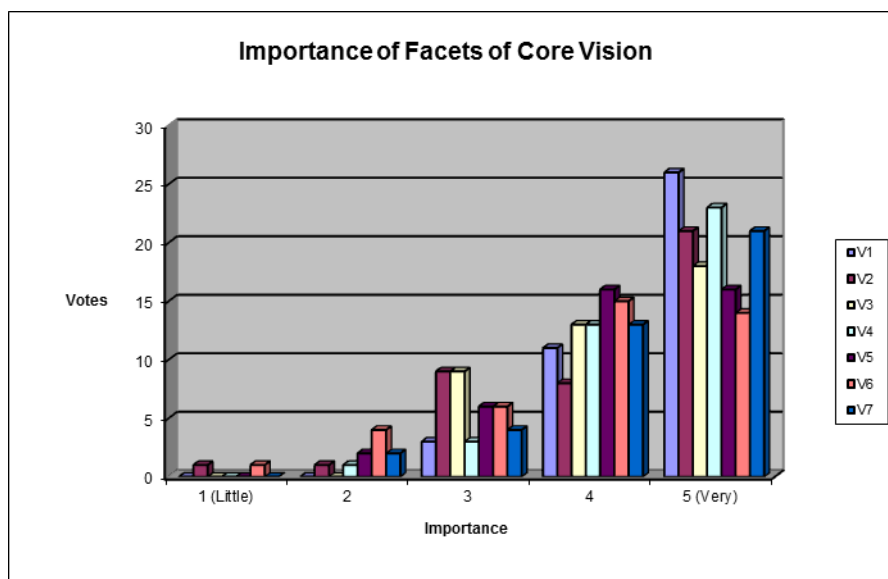


Figure 63: Summarized votes for importance of facets of core vision (Barcelona & Pordenone)

A4.3.2. Vision for Independent Living

How important is the achievement of each facet?

Facet	1 (Little)	2	3	4	5 (Very)
VIL1	0	1	4	15	20
VIL2	0	2	3	13	22
VIL3	0	2	4	19	15
VIL4	0	1	5	18	16
VIL5	0	1	5	15	19
VIL6	1	4	4	14	17
VIL7	0	1	6	14	19

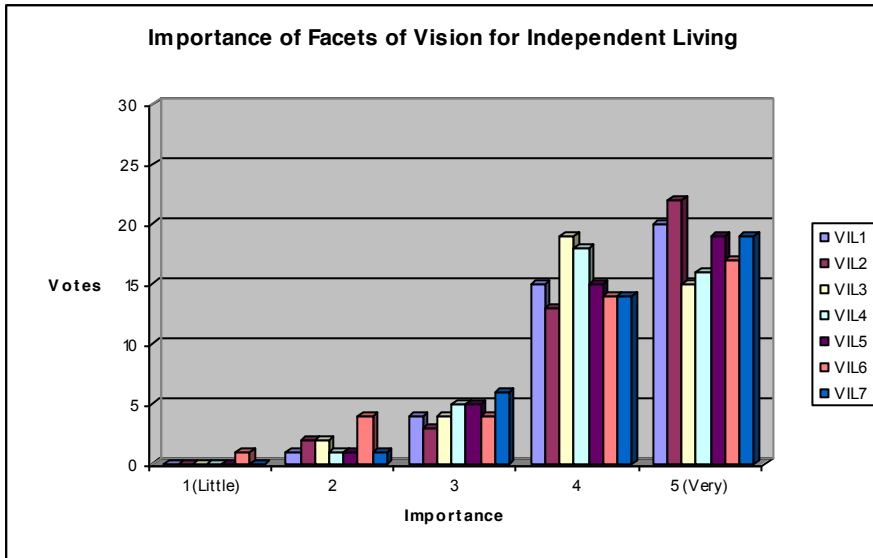


Figure 64: Summarized votes for importance of facets of vision for independent living (Barcelona & Pordenone)

A4.3.3. Vision for Health and Care in Life

How important is the achievement of each facet?

Facet	1 (Little)	2	3	4	5 (Very)
VHL1	0	2	3	18	17
VHL2	1	5	5	13	16
VHL3	0	1	4	13	22
VHL4	1	1	4	10	24
VHL5	1	3	8	15	13
VHL6	0	3	3	19	15
VHL7	0	2	6	12	20

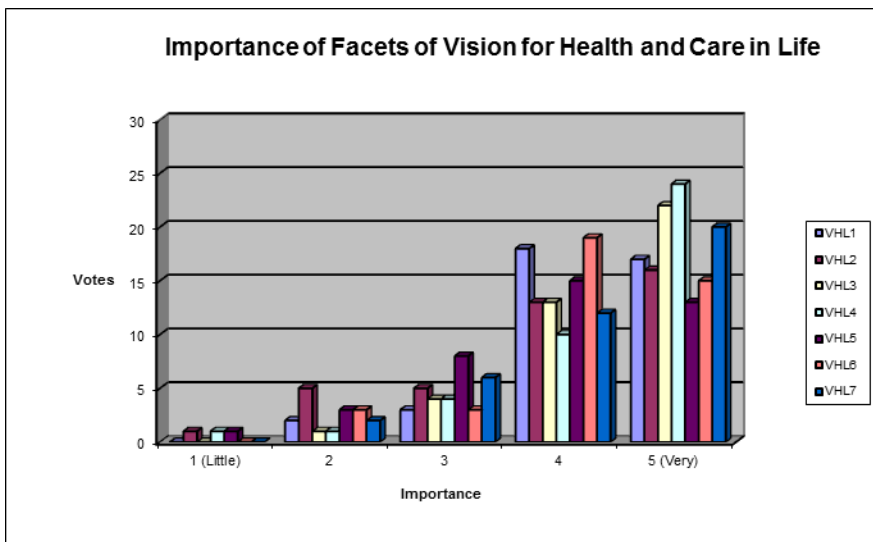


Figure 65: Summarized votes for importance of facets of vision for health and care in life (Barcelona & Pordenone)

A4.3.4. Vision for Occupation in Life

How important is the achievement of each facet?

Facet	1 (Little)	2	3	4	5 (Very)
VOL1	1	0	10	14	15
VOL2	0	2	11	14	13
VOL3	1	5	4	13	17
VOL4	0	2	5	11	22
VOL5	0	1	6	7	26
VOL6	2	3	5	7	23
VOL7	3	0	6	13	18

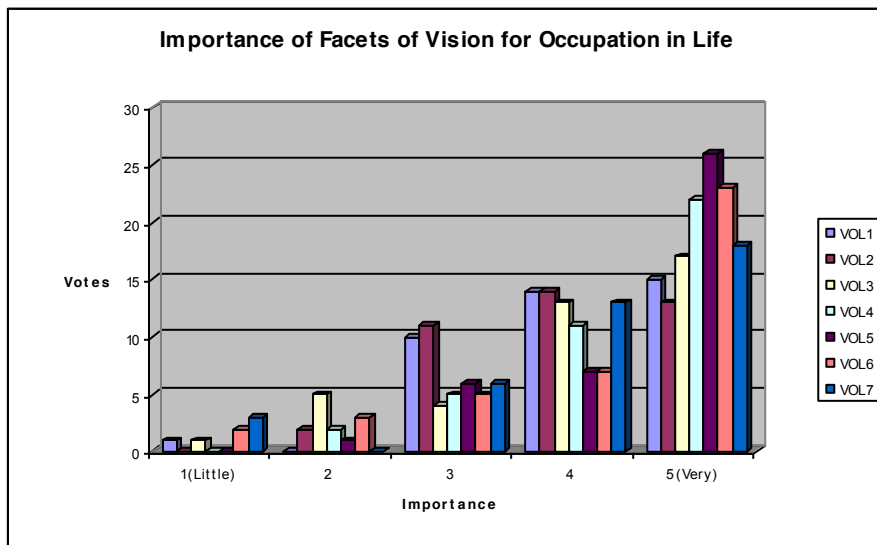


Figure 66: Summarized votes for importance of facets of vision for occupation in life (Barcelona & Pordenone)

A4.3.5. Vision for Recreation in Life

How important is the achievement of each facet?

Facet	1 (Little)	2	3	4	5 (Very)
VRL1	1	0	4	17	18
VRL2	1	2	4	15	18
VRL3	1	0	6	18	15
VRL4	0	0	6	13	21
VRL5	1	3	6	11	19
VRL6	2	2	4	16	16

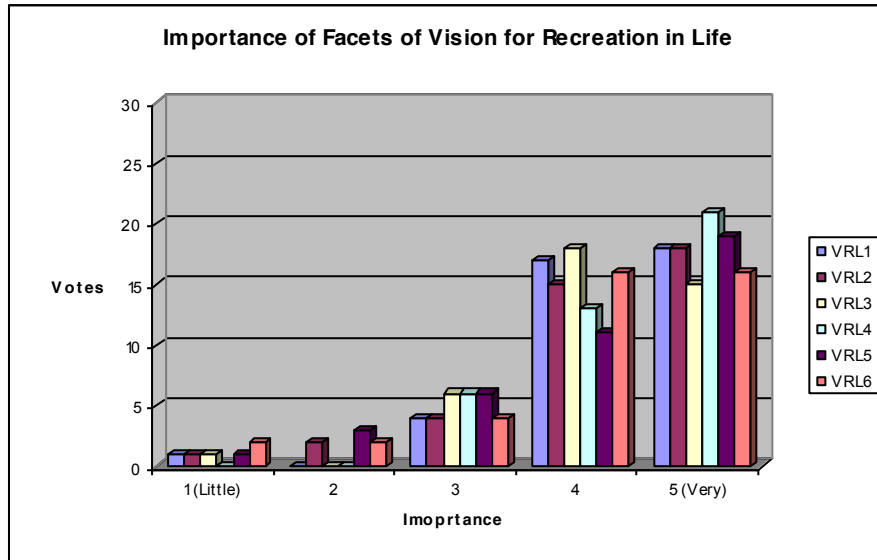


Figure 67: Summarized votes for importance of facets of vision for recreation in life (Barcelona & Pordenone)

Appendix 5. Survey Questions – consultation meetings

1. In your opinion, to achieve the vision which Life Setting needs more attention and deserves first priority to support ageing well? - Please rank them from 1 to 4 (4 being the highest priority).

	<i>Rating</i>
Independent Living	<input type="text"/>
Healthy Living	<input type="text"/>
Occupation in Life	<input type="text"/>
Recreation in Life	<input type="text"/>

Comments:

2. In your opinion, to achieve the vision which driver is more influential and requires more attention to support ageing well? - Please rank them from 1 to 5 (5 being the highest priority).

	<i>Rating</i>
Technological driver	<input type="text"/>
Societal driver	<input type="text"/>
Organizational driver	<input type="text"/>
Economic driver	<input type="text"/>
Regulatory driver	<input type="text"/>

Comments:

3. In your opinion, to achieve the vision how important is community building for each of the introduced Life Settings?

	<i>Little</i>				<i>Very</i>
Independent Living	1	2	3	4	5
Healthy Living	1	2	3	4	5
Occupation in Life	1	2	3	4	5
Recreation in Life	1	2	3	4	5

Comments:

4. How suitable and comprehensive is the Global Vision defined in BRAID for supporting ageing well? - Please mark your answer.

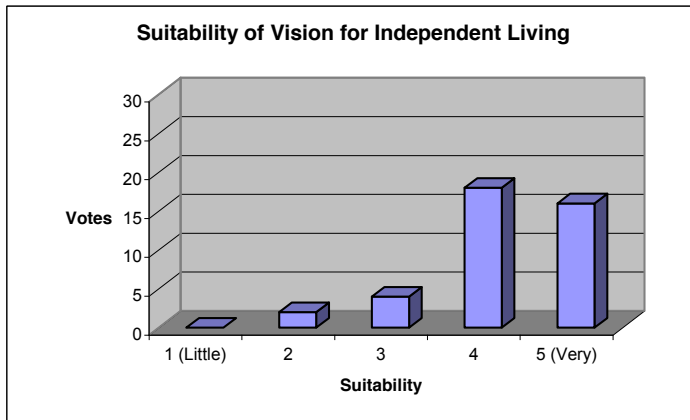
<i>Little</i>					<i>Very</i>
1	2	3	4	5	

Comments:

4.2 Consolidated Vision

5. In the following graphs, please specify if you agree with the majority votes expressed by experts involved in previous visioning workshops?

In case your opinion is different, please cross *no* and mark your own rating on the right of the graph.

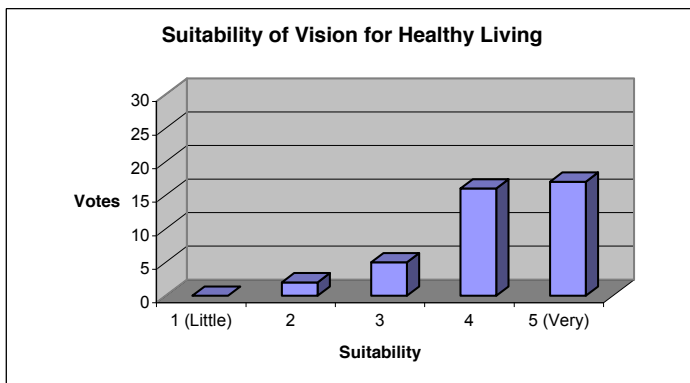


Majority of votes so far identifies *suitability of 4.*

Agree:
yes no

Little *Very*

1	2	3	4	5
---	---	---	---	---

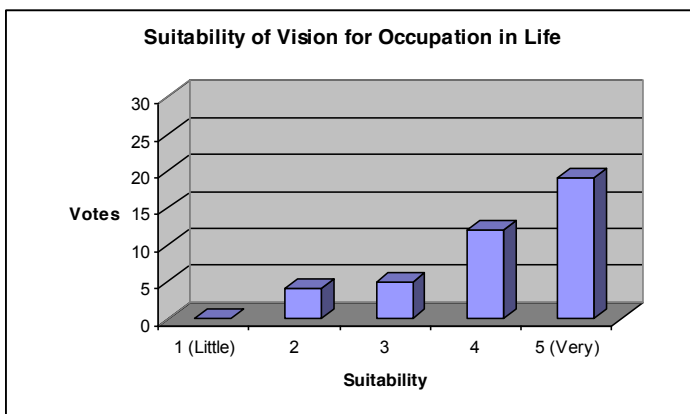


Majority of votes so far identifies *suitability of 5.*

Agree:
yes no

Little *Very*

1	2	3	4	5
---	---	---	---	---

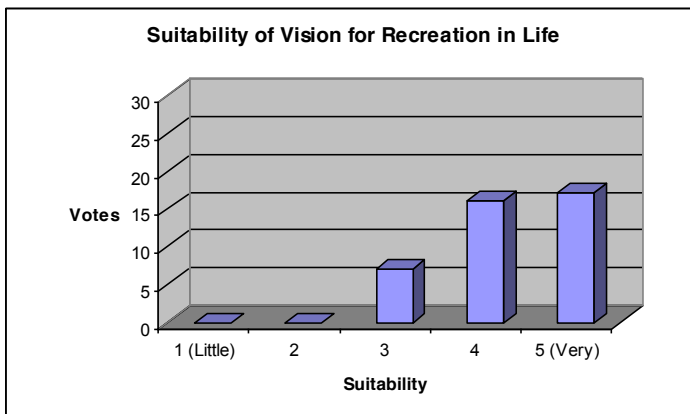


Majority of votes so far identifies *suitability of 5.*

Agree:
yes no

Little *Very*

1	2	3	4	5
---	---	---	---	---



Majority of votes so far identifies *suitability of 5.*

Agree:
yes no

Little *Very*

1	2	3	4	5
---	---	---	---	---

Appendix 6. Result analysis from the Surveys

A6.1. Question 1

“In your opinion, to achieve the vision which Life Setting needs more attention and deserves first priority to support ageing well? - Please rank them from 1 to 4 (4 being the highest priority).” Average rankings:

Life Setting	Average
Independent Living	2,6
Health and Care in Life	2,8
Occupation in Life	2,6
Recreation in Life	2,3

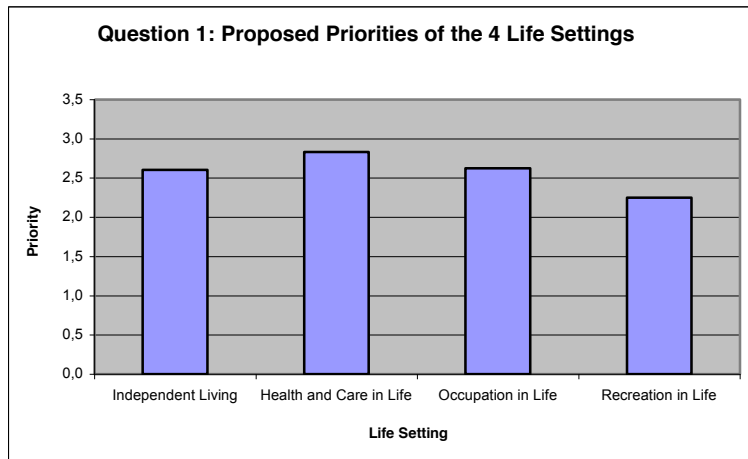


Figure 68: Average priority of life settings in surveys

A6.2. Question 2

“In your opinion, to achieve the vision which driver is more influential and requires more attention to support ageing well? - Please rank them from 1 to 5 (5 being the highest priority).”

Driver	Average
Technological	3,1
Societal	3,2
Organizational	3,1
Economic	3,1
Regulatory	2,9

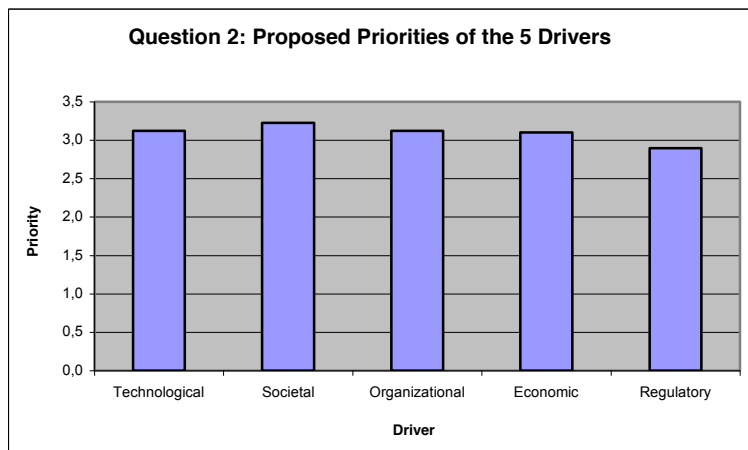


Figure 69: Average priority of drivers in surveys

A6.3. Question 3

“In your opinion, to achieve the vision how important is community building for each of the introduced Life Settings?”

Life Setting	Average
Independent Living	4,1
Health and Care in Life	3,8
Occupation in Life	4,1
Recreation in Life	4,1

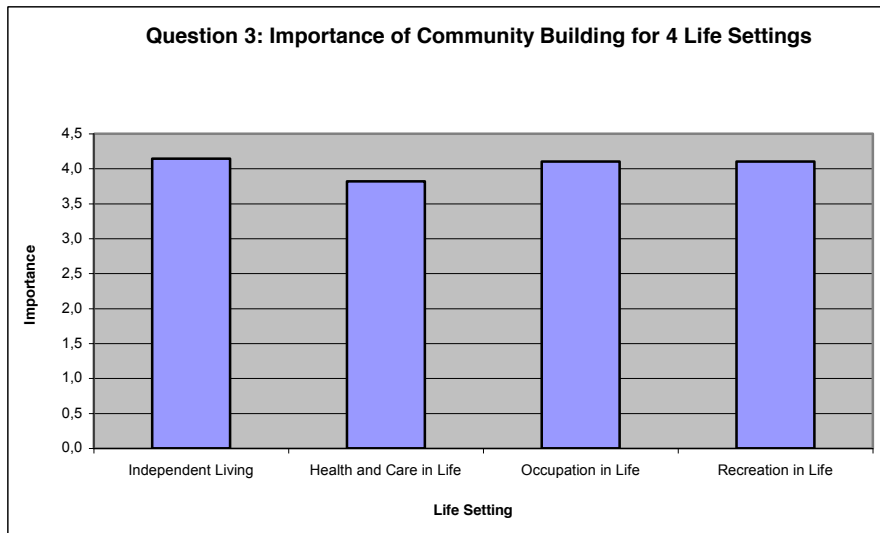


Figure 70: Average importance of community building for life settings in surveys

A6.4. Question 4

“How suitable and comprehensive is the Global Vision defined in BRAID for supporting ageing well? - Please mark your answer.” Numbers of votes:

1 (Little)	2	3	4	5 (Very)
1	0	6	28	14

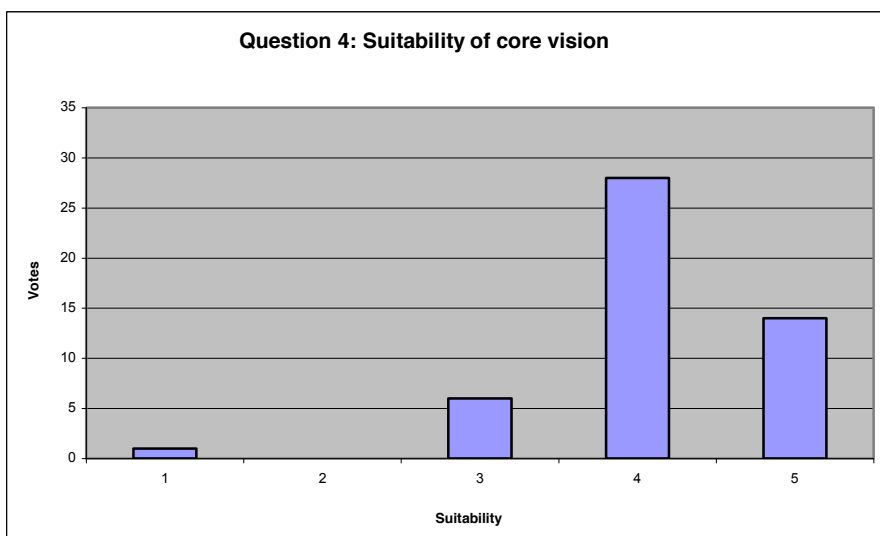


Figure 71: Votes for suitability of core vision in surveys

A6.5. Question 5

“In the following graphs, please specify if you agree with the majority votes expressed by experts involved in previous visioning workshops?

In case your opinion is different, please cross *no* and mark your own rating on the right of the graph.”

Independent Living

1 (Little)	2	3	4	5 (Very)
0	0	5	32	11

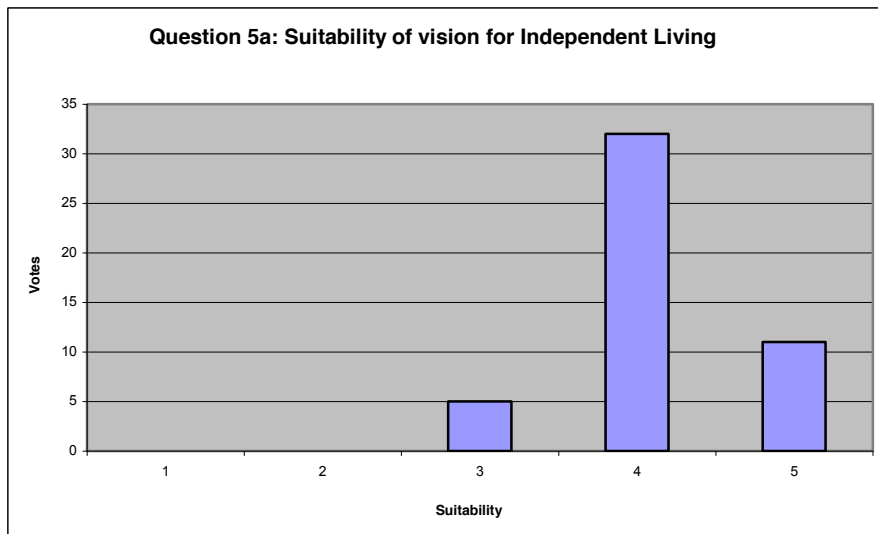


Figure 72: Votes for suitability of vision for independent living in surveys

Health and Care in Life

1 (Little)	2	3	4	5 (Very)
0	1	5	13	30

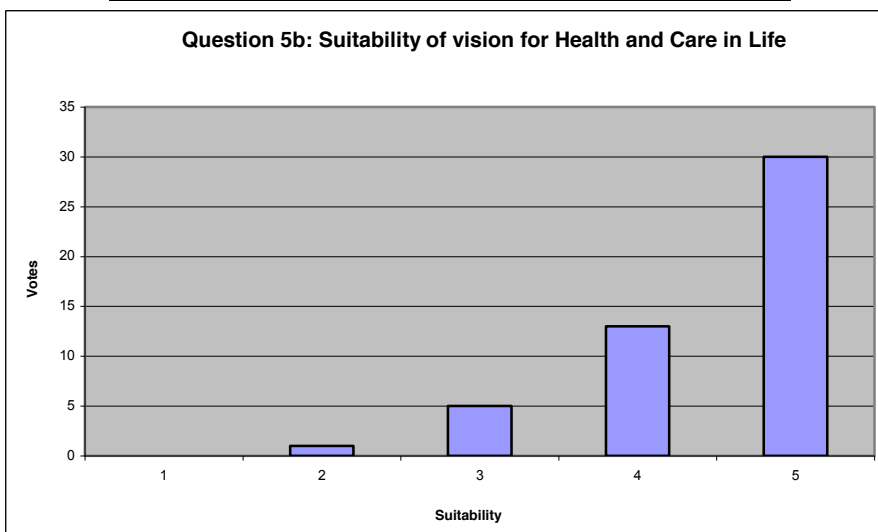


Figure 73: Votes for suitability of vision for health and care in life in surveys

Occupation in Life

1 (Little)	2	3	4	5 (Very)
0	0	7	14	28

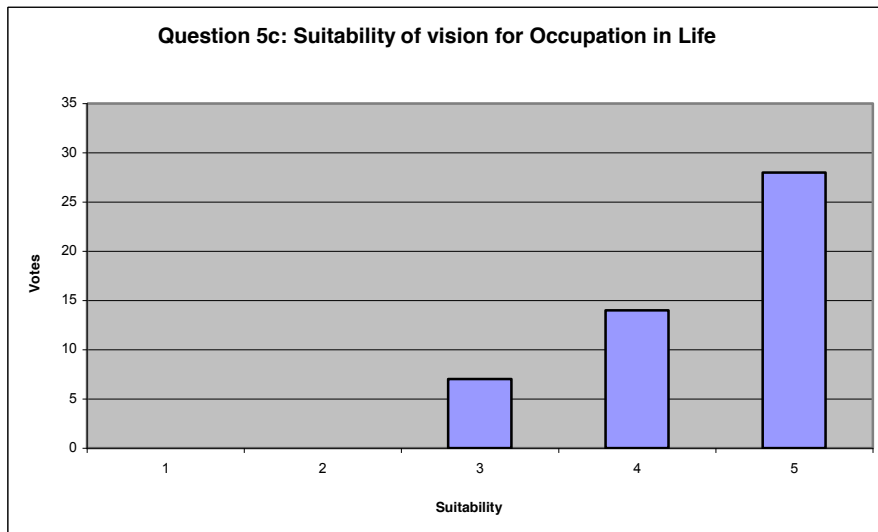


Figure 74: Votes for suitability of vision for occupation in life in surveys

Recreation in Life

1 (Little)	2	3	4	5 (Very)
0	0	7	19	23

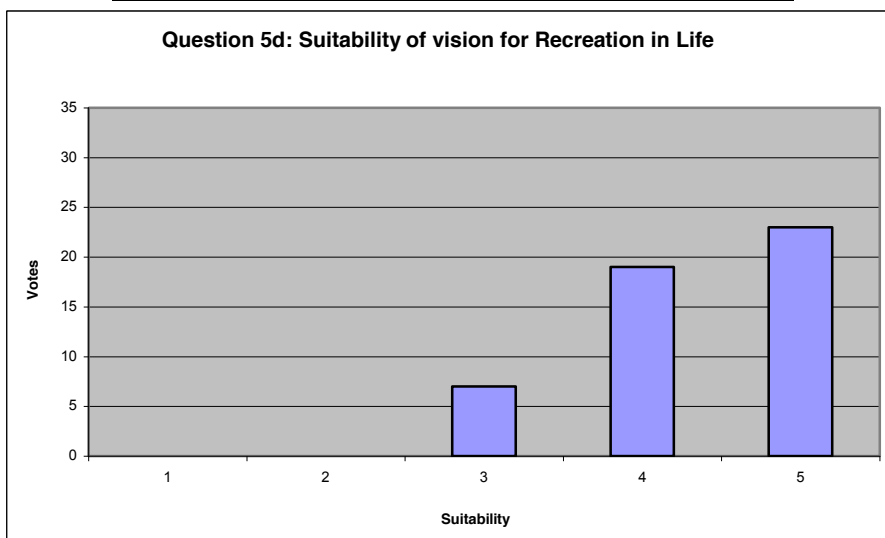


Figure 75: Votes for suitability of vision for recreation in life in surveys