# INNOVCARE – AAL-2014-192

Open ICT platforms and technologies to reduce and prevent the social and economic impact of elders care

## D5.5b: InnovCare Guidelines

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# Document Control

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# Revision History

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| 18/01/2019 | Iván Carrillo | Include guidelines and resources |
| 25/01/2019 | Iván Carrillo | Integrate collectives from partners contribution from the technical partners |
| 31/01/2019 | Iván Carrillo | Feedback, introduction, conclusions |

# Table of contents

# References

[1] "http://www.escueladisenosocial.org/wp-content/uploads/2015/07/Canvas-social.pdf," [Online].

[2] "http://socialleancanvas.com/the-canvas/," [Online].

[3] "https://canvanizer.com/canvas/rvcdtEaqiXZaa," [Online].

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# 1 Introduction

## 1.1 *Objectives*

InnovCare project can be classified within the so-called social innovation. As part of it, InnovCare project is said to provide information, knowledge, organizational models, services and social-entrepreneurial models that can tackle social challenges such as unemployment, ageing, social exclusion and social and environmental sustainability. From a societal point of view, InnovCare is a very promising and hopeful solution that can bring such improvements to or society, especially to the older adults, their relatives, friends and all the carers that will utilise it.

This deliverable stands for "*D5.5. Guidelines*" aims at outlining the expected social impact of *InnovCare* project by mean of a Societal Canvas. As planned this *D5.5 InnovCare Guidelines* deliverable second version has been expanded with a section describing the collectives from the different partners, as well as the guidelines for InnovCare. Taking this into account, this deliverable aims at reaching professional and non-professional carers that will have a better and in-depth understanding of how to perform and how to get the utmost benefits from its usage.

It is worth highlighting that *InnovCare* project is very ambitious regarding the social impact because of the reliability of the different components that compose it. Some of them are already into market which pragmatically means that they are already tested in depth.

## 1.2 *Scope of the deliverable*

This document is the result of the analyses of the different social impacts that are expected as outcome of InnovCare project.

The societal canvas shows us a basic representation yet complete about the relation model and the proposition to exchange value between providers and users of products or services. The addition of the social approach notably differs from the criteria of value delivery and the way in which the operative sustainability and economic action are understood. Social Canvas is a tool that facilitates the understanding and work with the relation model from a built-in point of view of the service processes that comprise the social initiative or the new social service.

Although this deliverable specially focuses on the social impact of this project, to do so, it is necessary to consider all the technical developments and the likely spread of the outcomes that is better analysed within the business models' deliverable D5.4.

The analysis made in the framework of this task is made taking into account several social lean canvas models, specially the following ones [1] [2]. Within this deliverable there is a schematic social lean canvas made by mean of an online tool called Canvanizer [3].

## 1.3 *Structure of the deliverable*

This document is composed of 6 chapters each of them very well differentiated. The structure of this document is depicted as follows:

- In chapter 2 we introduce the societal canvas theory.
- Chapter 3 tackles the adaptation of the social canvas to InnovCare case.
- Chapter 4 describes the collectives from the different partners contributing to the technology.
- Chapter 5 contains the guidelines of InnovCare solution.
- This deliverable ends up with a chapter in which the main conclusions are summarized.

# 2 Societal Canvas Theory

Within this chapter, it will be developed a theoretical introduction to what a Societal Canvas is.

It is worth highlighting that a business model canvas attempts to clearly articulate the rationale of how an organisation creates, delivers, and captures value [4]. To depict the social impact of companies with a social target, there has been made some adaptations from the original business model. In the following figure, it is shown the blocks that comprise this model:

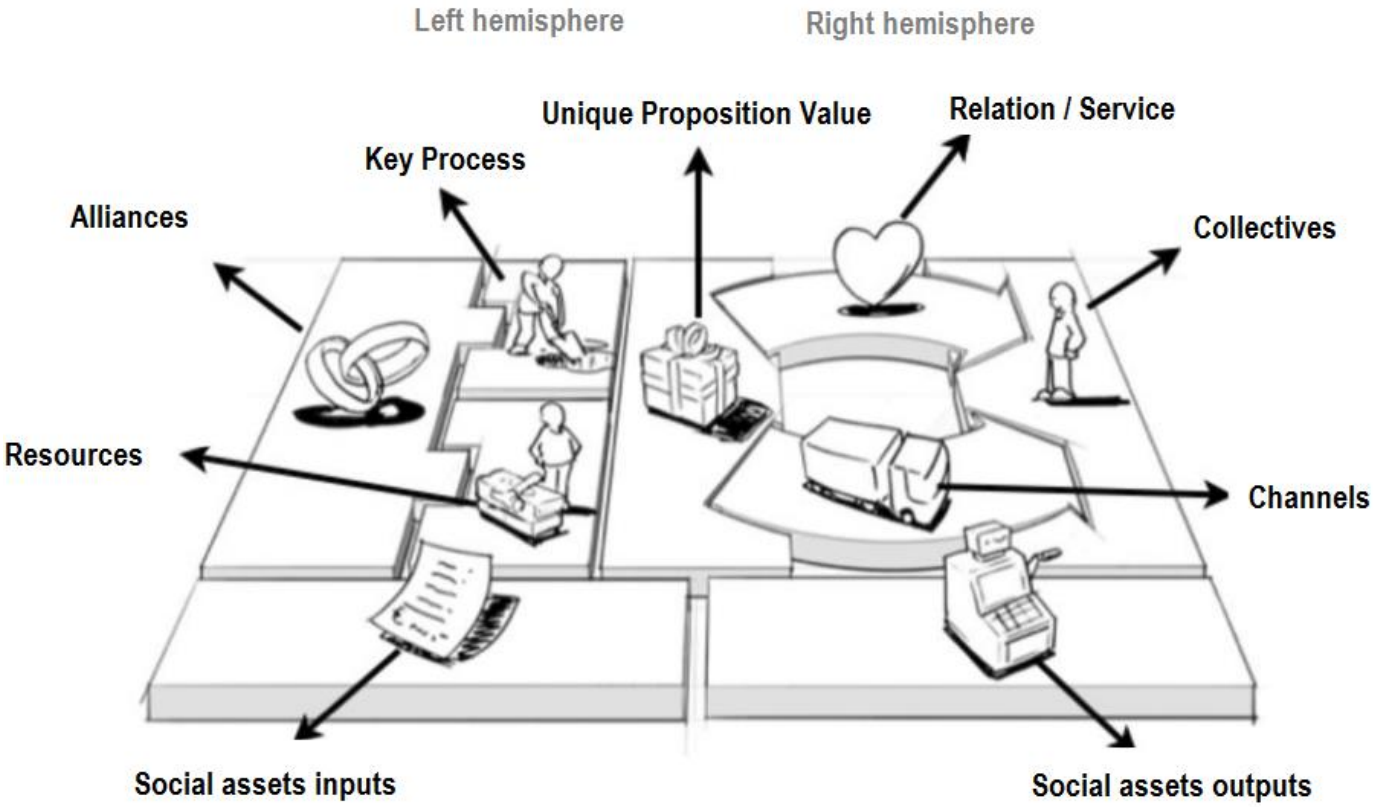



Figure 1. Social lean canvas

It can be said that social enterprises organize themselves in achieving these goals:

- They may directly support, train, and employ people who are experiencing some form of exclusion and disadvantage.
- They may provide services or products to directly meet a social need or achieve a social impact.
- They may generate income for a charitable or social purpose.

## 2.1 *Collectives*

"The different groups of people or organizations an enterprise aims to reach and serve".

Collectives are the receivers of our products or services. It is needed to depict their expectations because our *Relation/Service Model* is based on it. The following questions must be very clear:

- What are our more important Collectives?
- How about the size of the collectives? We may measure it.
- How personalized is the service offered?
- Is it a public service or a community resource?
- Is it necessary to transform an inefficient process?
- Are there relations between the collectives?
- Which value receives each of them?

It is important to set the metric of growth considering the target collectives and the level of maturity in their participation. To do so, there are several Social Value Metrics [5].

It is also important to point out who the first customers/users will be, i.e. the early adopters.

## 2.2 *Unique Value Proposition*

"The products and services that create value for specific collectives – what keeps customers returning to your enterprise". When defining a social canvas, this concept is redefined as follows:

"*Social value is defined as the social outcomes and benefits that are generated through the enterprise*".

Social enterprises must trade-off social and commerce value in order to succeed. This means that not only from social value an enterprise can climb the ladder, it has to also generate a 'commercial value'. So, a social enterprise often has two value propositions:

- The impact value proposition, the social value sought and its attractiveness to customers.
- The commercial value proposition, the goods and services produced and sold and its attractiveness to customers.

## 2.3 *Channels*

"How an enterprise communicates with and reaches its customer segments to deliver a value proposition".

The channels are the manners in which a venture aims at reaching the customers or users in a scalable way. Depending on the nature of the venture, these channels will vary significantly. It is also needed to differentiate the channels in which the venture will reach the different user segments, that is to say,

depending on the beneficiaries you are trying to reach, you may have to get creative in reaching them. Identify channels that are easy -or at least possible- for them to access.

## 2.4 *Relation / Services / Customer Relationships*

"The types of relationships an enterprise establishes with specific customer segments".

In social enterprises customer relationships are critical. Customers may be attracted to our value proposition just from a purely business perspective, and we should aim to retain their custom on this basis. It is worth noting that social ventures have positive feeling from customers that sense they are not only purchasing a product or receiving a service but also collaborating with a social end.

Another approach to this block is how social ventures are interested in pushing out the 'traditional' customer relationships with a business and explore how customers could become our 'community' or how they could co-create or co-produce the business with us.

## 2.5 *Social Asset Outputs*

"Outcomes expected from the performance of the value delivery".

The economic income is one of the key metrics of this block, but there should be added more indicators based on humanistic laws and integral and systemic vision of the quality of life of people.

In [6] it is said that a development system over which we want to measure the evolution of a human collective should have the following features:

- Customizable
- Stable and inter-generational
- Cohesive
- Innovative
- Applicable in small scale
- Integrator

An integrator vision of the social wealth should comprise and extend the achievements previously obtained during the economic development period with the new requirements of quality of life and wellbeing.

## 2.6 Key Resources

"The most important assets and resources (physical, intellectual, human, financial) required to make an enterprise work".

Key resources are the assets, tangible or intangible, that make your business model work. In the case of social enterprise, this refers to the resources that drive your commercial model and the resources that drive your impacts.

| Resources | Commercial | Impact |
|---|---|---|
| **Physical** | Facilities, infrastructure, buildings, vehicles, systems, distribution networks. | Special equipment and infrastructure, systems, accessible buildings |
| Intellectual | Brands, knowledge, contact management systems, partners, business knowledge and skills | Impact knowledge and skills, pro-bono support partners |
| Human | People, staff, partners | Support staff, brokers, powerful allies, support networks |
| Financial | Cash, lines of credits, access to finance | Access to funds to cover impact costs |
| Impact | | Methods and networks to assess and evaluate impact, all other assets needed to ensure impact delivery |

Figure 2. Key resources

## 2.7 Key Activities

"The most important things that need to be done to make the enterprise work".

To deliver the proposition value it is needed to carry out some key activities (commonly these are the processes of study, diagnose, production, communication, evaluation…). These activities allow the venture to deliver to its users the value proposition through different channels and with a concrete kind of personal or technological relations. These activities must ensure both commercial and social value.

Key activities across the commerce and impact of social enterprise may be:

- Complementary: Complementary activities may be leveraged for greater efficiencies across the delivery of commercial and impact value
- Opposing: there may be activities where it is difficult to balance commerce and impact value delivery

Being specific about what activities are critical to support and deliver your impacts is helpful not only in understanding what needs to be done on a daily basis to maintain your impact focus, but also to costing your impact.

## 2.8 *Alliances / Key Partnerships*

"The network of suppliers and partners that make the enterprise work".

This block must include the alliances need to execute our relation / service model with guarantees. These partnerships must complement our capacities and empower our value proposition, optimizing the consumed resources, and decreasing the uncertainty. These are the entities that actively participate in the building of the needed services and processes.

## 2.9 *Social Asset Inputs*

This block collects the social assets that play a role as input within the social process or initiative. Some intangibles like confidence or culture may be necessary as input to the process, since in the case of their inexistence, the service may be blocked. The trade-off of social asset input and output must be positive to consider an initiative of social interest.

In common lean canvas business models, this block refers to the revenue streams, the cash an enterprise generates from each customer segment (subtracting costs from revenues to create earnings). As aforementioned, in this case the focus is a trade-off between these streams and the intangible of the impact generated.

# 3 InnovCare Societal Canvas

In this chapter, the societal canvas is adapted to InnovCare project outlooks and forecasts for its solution.

In first place, it has to be cleared out the anchor purpose of InnovCare project: "*to provide and enhance the quality of life of the older adults by mean of personalised assisted living ICT services for this segment of the population to enlarge their autonomy, improve their physical, mental and emotional wellbeing, prevent further dependence, and facilitate networks to support self-care. Better self-management does lead to healthier citizens, more appropriate (health) service usage, and fewer unplanned hospital admissions*".

InnovCare aims at supporting older adults in independent living and at detecting functional decline, consequently avoiding hospital admissions.

InnovCare proposes an integrated care programme, which includes physical, cognitive, and social activities, InnovCare brings an important added value to all health and care systems in the sense that it proposes a well-structured programme which can be easily adopted in any institution while is very well accepted (adherence rates demonstrate it) by the end users.

## 3.1 *Collectives*

The potential stakeholders can be distinguished among the next three well-differentiated following groups:

***Older adults***: to enhance and promote behaviour change in older adults – going from passive care recipients to well-informed, active, engaged, and committed individuals. In addition, the system aims at empowering older adults in self-management and detecting functional decline (trend analysis) in an early stage. Focus is on healthy older adults with mild age-related impairments as physical limitations, sensory thinning, and cognitive decline. Patients in advanced stages of their disease are out of the scope.

- Older adults are monitored through wearable technology in a continuous, unobtrusive way. In addition, they can perform health measurements by making use of tele-monitoring devices or apps on the smart phone and answer simple questions to collect more subjective data about their state.
- Older adults receive reminders, alerts and coaching based on automatic data analysis or based on suggestions from others.

- Older adults have direct access to a (fully integrated) health record combined with information centres and apps concerning health and disease specific topics. They can grant others access to this data through a permission module.
- Older adults can initiate or receive video calls in order to communicate with both formal and informal caregivers.
- The older population will be enabled to be socially active – in several dimensions:
    - In their homes by being digitally engaged with people, games, and other activities;
    - By providing them with the information and motivation digitally – to be active and participate in outdoors activities in their communities;
    - By enabling them to communicate (web/mobile video conferencing and chats) with other InnovCare members – in order to create a social community of people with same goals.

It is important to distinguish older adults taking into account their level of digital literacy:

a. Low level digital literacy older adults: people who grew up before Internet became part of our lives. This group it is also composed by people that suffer from digital illiteracy. This is the most challenging potential group of stakeholders within the framework of InnovCare project.
b. High level digital literacy older adults: this group belongs to a new generation. They are more assertive, more active, and highly value self-determination. They are also more familiar with ICT and other aspects of modern technology.

***Informal caregivers***: to facilitate (remote) monitoring and support of independent living in older adults by training informal caregivers to use web services, apps and interactive tools allowing them to communicate, share their experiences and support each other while keeping active in the society through their daily activities.

- Informal caregivers can be granted (full or partial) access by the older adult through a permission module. Also, a one-time, password-enabled access option can be chosen. Different roles can be defined.
- Informal caregivers can receive an alert when something seems to be wrong.
- Informal caregivers can use the video call functionality to start or receive video calls to communicate with the older adults.
- Informal caregivers can make use of an agenda to be shared with the older adult, family and friends, other informal caregivers, and care professionals. In this agenda, informal caregivers can manage appointments and reminders. This way, they play a supportive role in daily planning. In addition, this agenda function might be also beneficial for the informal caregiver, enabling a better balance between their personal life and caregiving.

- Informal caregivers can offer support to older adults in configuring, personalizing, and using the system through a web interface and mobile devices, using a browser. When preferred by the older adult, informal caregivers can act as administrator as well.

These stakeholders will gain visibility and become active partners for supporting seniors in their new self-care lifestyle. Making a parallelism with the ICT sector, we consider informal caregivers as active sensors of Senior's health related activities and status. Both older adults and informal caregivers are increasingly referred to as "experts by experience".

- ***Formal caregivers*** can make a description of a single visit (EMR) themselves or upload data. This data is always accessible for the professional who created this information.
- Formal caregivers can consult the full patient history (EHR) when granted access by the older adult. Besides continuous access, there is a one-time, password-enabled access option as well.
- Formal caregivers can use the video call functionality to start or receive video calls to have e-consults with the older adults.
- Formal caregivers can use InnovCare as a tool for accurately measuring and quantifying specific signs or symptoms, consequently supporting them in decision making. Based on this information, they can empower and coach the older adults.

To summarise, *health professional and formal caregivers* will empower and train their patients to enhance their autonomy.

## 3.2 *Unique Value Proposition*

The main unique value proposition is to help older adults stay independent in their own homes. This is done in a cost-effective manner to become a mass market solution for this segment of the population that lacks good incomes in many cases.

The value propositions can be enumerated as follows:

- Novelty
- Cost reduction
- Risk reduction
- Customization
- User friendliness
- Efficiency
- From the user side (older adults), the impact value can be seen as an increase of:
    - Their autonomy
    - Their wellbeing

This is one of the most important parts of InnovCare project because of these two highly valued facets. Increasing the older adults' autonomy and wellbeing in an unobtrusive and user-friendly way will keep older adult engaged to this solution, fostering the use of it, enhancing the quality of life of their relatives, improving the cares coming from both formal and informal carers.

## 3.3 Channels

In first place, it is worth highlighting the necessity of involving all the stakeholders in order to accomplish a solution that solves the problems in the most suitable way. To do so, older adults, informal and formal caregivers must be part of the decision making during the development stage. This is done by mean of the different pilots in which InnovCare is evaluated and improved after the feedback obtained from them.

## 3.4 Relation / Services / Customer Relationships

InnovCare aims at enhancing the traditional relations between older adults and their caregivers (formal and informal).

The relations can be clearly differentiated depending on each collective:

- Older adults: although the relation with this group can be thought as indirect from a business perspective, it has to be taken into account that it is expected to work closely with this collective in order to offer the best solution based on their feedback from pilots and reviews.
- Older adults will interact with their carers (formal or informal ones). At the beginning, carers will have to teach how to use this solution. Another important duty is the engagement of their relatives in order to foster the usage of InnovCare.
- Carers: the relation with carers must be very close. InnovCare must solve the issues that arise after the deployment of the solution. Moreover, its continuous enhancement and update must be a requirement. The evolution of the platform based on their feedback has to be made to keep engaged the users.

The relation between the different collectives interested in InnovCare can be seen as follows:

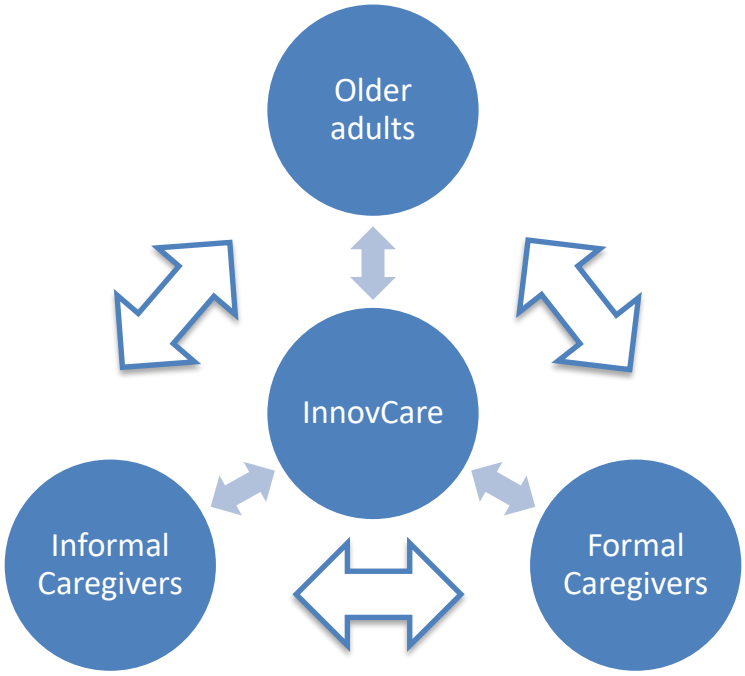



Figure 3. Relation between collectives

It is worth highlighting that every collective is able to interact directly with the InnovCare solution, but also with the other collectives. InnovCare solution will enlarge the collaboration and interaction among the different collectives.

## 3.5 *Social Asset Outputs*

InnovCare has a massive potential impact in terms of social wellbeing because of the increase of older adults and the services they need. These two reasons will also lead InnovCare to a magnificent goal in the economic field.

InnovCare will directly impact on the lives of older adults. There are several forecasts about the size of this segment of the population that foresee that by 2020 around 25% of the EU population will be over 65; People aged from 65 to 80 will rise by nearly 40% between 2020 and 2030

Moreover, it is expected that InnovCare solution plays an important role on the mHealth penetration across the Member States. InnovCare will help the development of the new and sustainable health and care systems.

From an economic point of view, we can depict the impact of InnovCare solution as follows:

- Almost all developed markets already have mobile penetration greater than 100%. mHealth could save 99 billion EUR in healthcare costs in the European Union (EU) and add 93 billion EUR

to the EU GDP in 2017 if its adoption is encouraged. About 70% of the revenue is expected to come from countries in Western Europe with the remaining 30% from countries in Eastern Europe. The forecast illustrates the mobile health market share in Europe in 2017, by service category. Monitoring is projected to account for 65 percent of the mobile health market opportunity in Europe. Germany accounted for 1 billion U.S. dollars of the European mobile health market. In 2017, the mobile health revenue is projected to amount to 23 billion U.S. dollars worldwide.

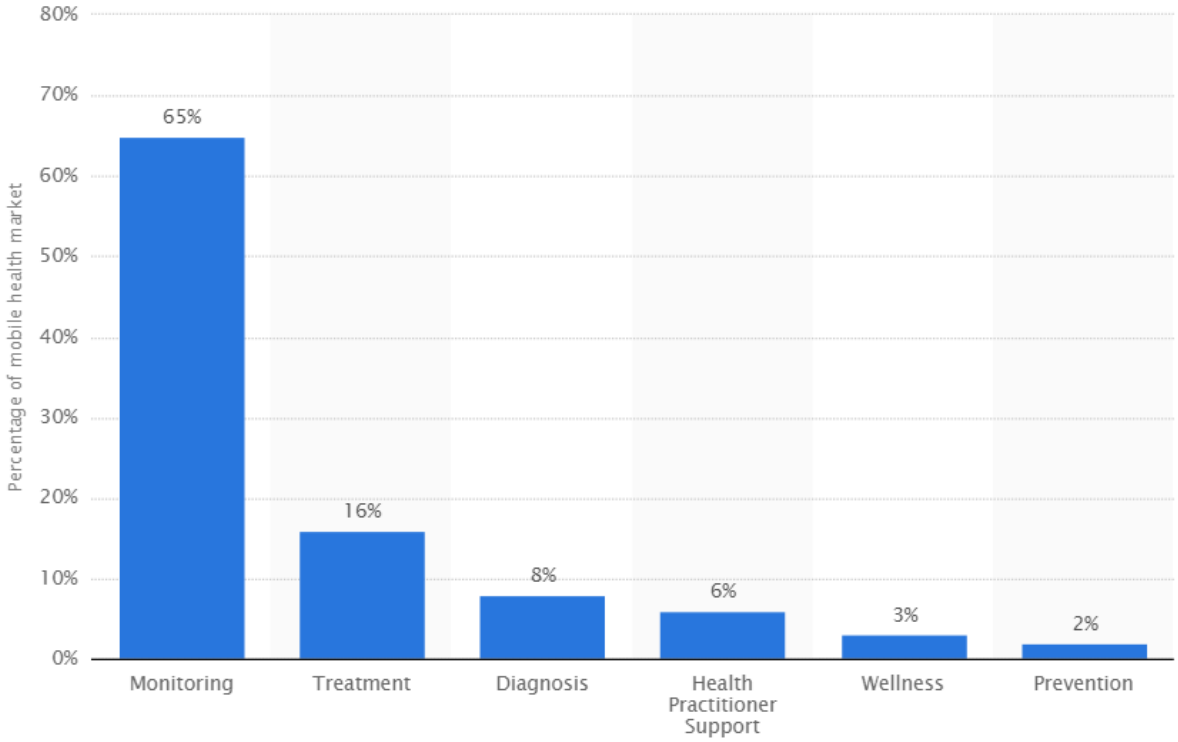



Figure 4. Mobile health market share in Europe in 2017 [7]

## 3.6 *Key Resources*

Taking into account the different resources depicted previously, we can address the ones related to InnovCare solution:

- Physical Impact:
    - ***eHealthStudio platform***: this platform, provided by LifeOnKey, was designed to meet challenges of the health information space to build connectivity between healthcare professionals, marketers, and patients, with their associated family, and informal caregivers.

- ***Dashboard subsystem***: this is an agnostic, web-based framework designed by Wellness Telecom to provide a flexible yet powerful tool for graphical interaction with big data repositories. The dashboard's agnostic character enables interoperability among various systems by relying on widely used standards. *This framework has been adapted to match InnovCare's requirements.*

- ***Communication center:*** this feature just needs a standard web browser and it relies on webRTC technology. Overall it provides a simple, clear interface and includes all common interaction functionalities. Although most of the communication sessions will involve only two people, it also supports conferences with multiple users.

- ***Wearable technology:*** the wearable technology of ACROSSING project is provided by Brevidius. This wearable is a kind of smart watch with new functionalities that suit older adults' requirements and needs.

    - In first place, this smart watch has an adapted interface for older adults to ease its usage. The users can make phone calls regardless the matter of them, (normal calling to their family, friends and whoever; and emergency calls). This smart watch can also be used to measure the heartbeat, to set alarms or remainders…

- ***mHealth "Mememtum":*** this is a complete monitoring platform. The end-user interface is a smartphone chat-bot application capable of:

    - Communicate with the user using a WhatsApp like interface.
    - Send questions, tests and reminders to specific needs.
    - Specific knowledge database accessible via bot using dialogs.
    - Easy tracking of evolution: Trends and 3 variables: Medical, Activity and Emotional.
    - Adaptability.

- ***Decision Making System:*** this software delivers real-time, automated provision of personalized services and interfaces to be used in any platform or system.

    - The DMS is used to analyse the data coming from the rest of modules and act depending on this data. The main target of the DMS is to establish a rule-based adaptive interface relying on the cognitive state of the users. By doing this, there are some expected outcomes such as engagement of the users, ease their interaction with ICT technologies and so on.

- Intellectual impact: the IPR agreements, certifications and the “knowhow”.
- Human: the people involved from developers to administrative workers.

Regarding the impact assessment, the most important key metric is the number of older adults that are engaged to use InnovCare platform. The bigger this number is, the more success is accomplished. But not only this number is important, to engage them, it is necessary the attraction of the other two potential stakeholders.

## 3.7 *Key Activities*

The solution is a platform with a high malleability. The project idea and the implementation can be modified to accommodate other user segments or organisational environments than those included in the primary implementation. In spite of concentrating on the described special user groups in the project phase the utilisation of InnovCare is not restricted to them. In fact, one of the big advantages of InnovCare is its easy and flexible expandability. So, if other user groups will be identified to need a special service it is just necessary to survey the special needs and the resulting service requirements in a formal way and InnovCare will (semi-) automatically provide them a usable service. In case some users need or want implementations of new services widgets.

InnovCare project takes advantages of the opportunities that ICT offers:

- This technology offers the chance to boost older adults’ independence.
- To enable care organisations and local authorities to deliver better quality at lower costs. It is also worth highlighting the personalisation of services that ease the relation between older adults and ICT technologies leading professional/informal caregivers to enhance their services.

InnovCare proposed solution comes from the enhancement and promotion of behaviour changes among elderly so as to make them go from passive patients to active, engaged and committed individuals.

Instead of starting from scratch, InnovCare project set down its pillars on the adaptation and integration of different innovative commercial solutions, mostly based on Ambient Assisted Living technologies.

To foster the usage of InnovCare solution, it will be designed following accessibility and usability guidelines. Usability focuses on how intuitive and easy a solution is, and comprises five characteristics: effectiveness, efficiency, engagement, error tolerance and easiness to learn.

## 3.8 *Alliances / Key Partnerships*

It is utmost important to establish strong alliances and partnerships in order to make InnovCare succeed.

First of all, the consortium must establish a strong alliance, at least, all those partners willing to reach the market. This involves the conciliation of a trade-off to make the commercialization noteworthy for all of them, IPR management, roles designation…

- Governmental care organizations: nursing homes, older adult residences, dependency law care.
- Private older adult residences to test the features and validate the business model.
- Informal caregiver organizations and community carers are the two groups more reachable from the consortium.
- Physical device providers such as wearables, the needed infrastructure…
- Dissemination agencies to help broaden the expected outcomes during the first stage and to regularly promote InnovCare diffusion campaigns…

## 3.9 *Social Asset Inputs*

Some intangibles expected coming from older adults:

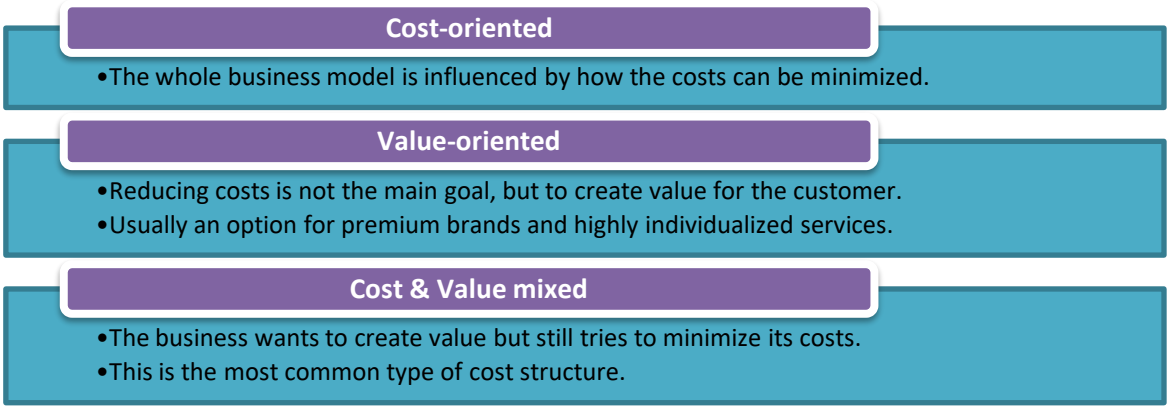
- Confidence
- Self-esteem
- Health
- Wellbeing
- Social wealth
- Independence
- Self-sufficiency
- Freedom
- Happiness
- Comfort
- Safety

Some of the tangible inputs come from the expected revenue streams that depend on the different exploitation strategies:

- Software as a Service
- Monthly subscription
- Related consulting services

- Concierge Services
- Upfront implementation
- Licence
- Leasing
- Usage fee
- Commission

There are different types of cost structures, the most important being a *cost-driven* or *value-driven* model, or a mix of these two. The *cost-driven* business model focusses on minimizing the incurring costs at all ends. The *value-driven* model, on the other hand, is less concerned with the cost implications but does rather focus on the value creation. This approach is implemented by high-end solutions and the luxury industry.



## 3.10 *InnovCare Societal Canvas*

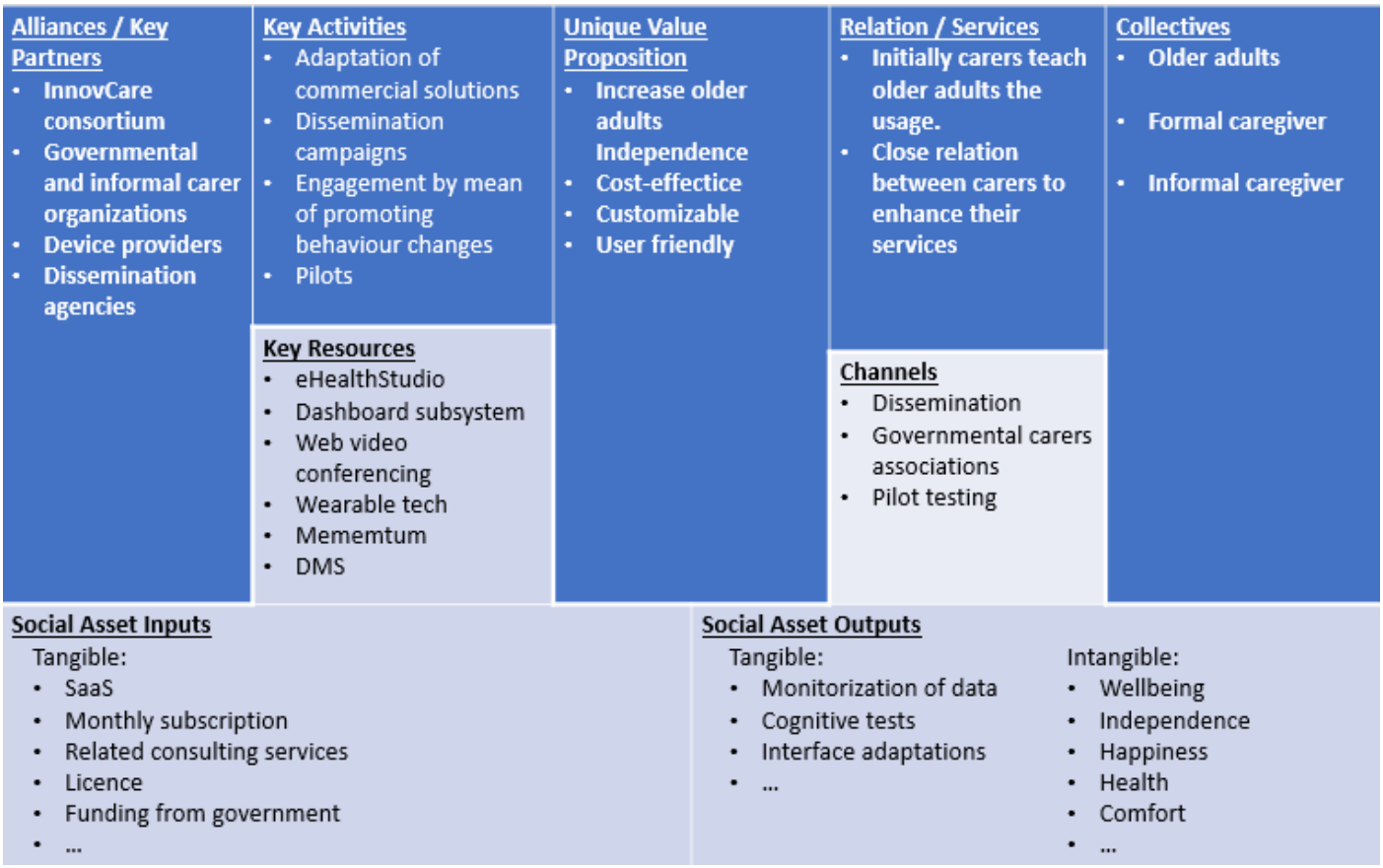



Figure 5. InnovCare Social Canvas

# 4 Collectives from Partners

We will describe here the different collectives – from the different partners – that are contributing to the technology.

## 4.1 *Taniwa*

**mememtum** is a tool for the remote monitoring of groups of patients. **taniwa** has been working on mememtum the last two years mainly in developing neurological tests to evaluate the motor status of Parkinson's Disease (PD) patients. Finger tapping tests on the screen of the smartphone or tremor measurements using the device accelerometers are the results of that work. On the other hand, mememtum's interface is now:

- a chat bot that can maintain dialogs with the end-user.
- A complete monitoring platform with questions, tests, activity measures,
- A trending tool. Emotional, Activity and Neurological areas.

Our main collectives are (1) chronic of patients (or elder with mild aging issues) (2) caregivers and (3) healthcare entities.

examples of use

diabetics
get state and food intakes
gather activity and blood parameters every hour
identify trends
proactive alarms

hospital patients
get state and procedures
share information with family caregivers
conversational customer service
continue the care at home
follow injury evolution using pictures
integrate with existing IT services

new drug supervision
get side effects
send specific questionnaires
real time group and individual adherence
data analysis

mememtum

- Market Size:

As mememtum is an open monitoring tool that can be addressed heterogeneous groups of people, the market size is almost unlimited.
The elderly are one of the focus of mememtum and this group size, as we already stressed is growing each year.
People caring for other people is another huge segment including the informal caregivers and professional resources and institutions.

**People caring other people:**

In EU : average 34% (56 millions)
In USA : 13,55% (43,5 millions)
Canada : 23% (8,1 millions)
Australia : 12% (2,88 millions)

- How personalized is the service offered?
  Mememtum can adapt its features to specific groups in several ways:
  - Questions.
  - Neuromotor tests.
  - Connection to specific knowledge databases,
  - Information automatically gathered.

- Are there relations between the collectives?
  We see patients, elder and caregivers as a whole. But each of these groups have specific views and needs that we try to cover with mememtum.

- Which value receives each of them?
  - Patients and elder:
    - Self-monitoring and empowering.
    - Engage caregivers and community.
    - Independence.
  - Caregivers:
    - Help tool to identify where to help.
    - Proactive support.
    - Monitoring.
    - Optimize resources.
  - Institutions:
    - Improve quality of service.
    - Expand assistance.
    - Intelligent use of resources.

Early adopters:
- Elderly in good health.

- Care institutions
- Hospital with focus on increasing adherence.

## 4.2 Wellness Telecom

Wellness Telecom participation within InnovCare has been addressed to the development of two applications included within the core platform, these are the following:

- **CommCenter (RTC application):** This application enables a direct and fluent communication between different types of users.
- **Dashboard (Data representation):** It allows displaying, monitoring and checking the parameters measured by the Care watch and Mememtum app.

These applications have been developed in a user-friendly way and specifically adapted for elders in order to optimize the ease-of-use of both applications, as well as, the involvement of the users.

## 4.3 ISOIN

ISOIN developments within InnovCare contribute in the most part to the backend and the core of the platform. The open IoT integration hub within the DMS, the middleware that provides the interoperability layer between the external modules and InnovCare, is not targeted to any specific collective but rather must be considered as one of the trunk services that enable the provision of the rest of InnovCare functionalities.

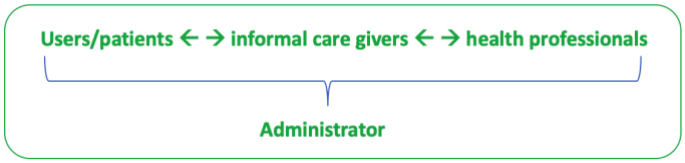
In a similar manner, the interface personalization and assistive modules included in the DMS do not provide any direct functionality to specific collectives, but rather are meant to complement the existing InnovCare functionalities in order to promote user engagement and improve overall user experience of the platform.

## 4.4 LifeOnKey

LifeOnKey has developed – within InnovCare platform – the infrastructure for the system as well as the medical records and some other web-applications.

Based on LOK contribution, we will describe the collectives based on the following categories (decided in Section 2 of this document.

- What are our more important Collectives?
  In the LOK contribution– as well as InnovCare application – we have several different collectives




- Users/Patients
  The users are the most important ones – as they are the main reason for building this system. The users might be patients – depending on their health status – which effectively defines our target users (See Delivery D5.4 in InnovCare Business Plan)
- Main Target groups, in this collective, are:
  - Users - Relatively healthy seniors, with minor aging-related health issues
  - Patients – seniors with MCI, which do form daily limitations;
  - Patients - seniors with physical impairments, which do form daily limitations
  - In the future – Patients – seniors one or multiple chronic diseases
- Informal Caregivers – a relative of the user/patient. Not all users/patients have an informal caregiver – only if they are not independent.
- Health Professionals – nurses and physicians – that remotely manage the user/patient.
- Administrators – two sets of administrators (i) one that manages the IT; (ii) administrator from a home for seniors that manages the registration, use etc.

- How about the size of the collectives? We may measure it.
  Number of patients is almost unlimited; Size of the group of informal caregivers is less or equal to the users/patients; Size of the health professionals is much smaller than the number of users/patients. Usually one health professional can take care of dozens of users/patients.
- How personalized is the service offered?
  The service is very personalized by collectives (since they have different functionalities) – but also the different clients can ask for changes or customizations for each collective.
- Is it a public service or a community resource?
  This is a public service.
- Is it necessary to transform an inefficient process?
  No, this is a new very efficient process.
- Are there relations between the collectives?
  There are relations between the user/patients, of course – and the relations with the health professionals – only if they belong to same institution (clinic, or hospital, or home for seniors, etc.)
- Which value receives each of them?
  The growth of all collectives is unlimited – even though we will start with few clients – until full commercialization.

The early adopters will be as follows:

- For users/patients – people literate to technologies – more like the “baby boomers”; people that are relatively “health” and independent. The system is built to keep them independent in their own homes.
- For the informal caregivers – they come with the users of the system – and it is assumed that they also are technology literate.
- Health professionals are all used to such system – early adopters will be advances telehealth/teleassistance clinics

## 4.5 *Brevidius*

Until the Innovare project the most important collective for Brevidius were mentally disabled people (and their formal and informal caregivers). The features of MyWepp, like the (visual/audio) agenda, e-health measurements, steps, location, communication, are meant to enable them to live as independent as possible. In return, it could well be that the InnovCare platform turns out to be relevant for this collective as well.

Most of these features and functionalities of MyWepp have been offered to the collectives of older adults within the InnovCare project. We concentrated on the use of the Care-watch (connected to the InnovCare platform). But the features of MyWepp can be used on any device with an internet connection.

From the InnovCare project we learned that we really have something to offer to the collective of:

- Older adults with mild cognitive impairment (MCI)
- Their informal caregiver(s), often their partner, who can use InnovCare and the Care Watch to measure important e-health indicators, give reminders of appointments, activities and for instance medication. Also, the option to communicate in case of need with the watch is important for informal caregivers.
- Formal caregivers can use the data of the watch and can be reached with it
- Organizers of social events can use the agenda and reminders of InnovCare and the watch to activate the older adults to join social activities.

# 5 InnovCare Guidelines

This chapter contains the guidelines to use the InnovCare solution in a real environment. The following guidelines are not meant to be an in-depth description of the system, but rather a set of guides and resources to configure the InnovCare platform in a real scenario with end-users and caregivers.

## 5.1 *Formal caregiver setup*

Formal caregivers can register in the platform a described in this section

- Go to www.innovcare.org and click on “provider login”
- In the login page, click on “join now”
- Start registration process:
    - Choose Physician - Geriatric as the profession-specialty
    - Select “AdultWellness” as your code
    - Use your name and your surname – they will be also used as username for the InnovCare Watch registration
    - Choose an ID that you can easily remember
    - The 4 parameters to login to the InnovCare Platform are: username, country, ID and Password. These parameters are essential. Choose them so that you can remember
    - Essential to fill all (*) marked fields in the registration pages
    - After registration – the system goes automatically to the formal caregiver homepage
- In order to work with the patient’s data, the formal caregiver can either enter the patient’s reference in the form below to add them to their patient list or register a new patient via the top menu: Add > New patient > InnovCare and follow the registration process (see Older adult setup section next for reference).
- Once a patient is selected, the first page you see will show the key medical history. In order to edit it,
    - Click on the MENU in “ADD/UPDATE” – move down to “Add Medical History”.

- ✓ A dialog box – you can add your medical terms (ask your GP to give you a list of diagnosis, medications, and allergies – the three are the most important terms to be registered.
- ✓ After you write down the terms – please don't forget to click on "UPLOAD".

- Go back to the Menu – and click on "My Health" – now you will see the data you just entered into the system.
- There are several options available, from medical history to medication or visit data, they all share a similar work flow. For details please refer to the eHealthStudio help section.

## 5.2 *Older adult setup*

On the other hand, an older adult can register by itself in the InnovCare platform as described in this section

- Go to www.innovcare.org and click on "user login"
- In the login page, click on "join now"
- Start registration process – a suite of pages to digitally sign the informed consent, document personal details, and some medical data.
  - Choose InnovCare as the plan
  - Use your name and your surname – they will also be used as username for the InnovCare Watch registration
  - Choose an ID that you can easily remember
  - The 4 parameters to login to the InnovCare Platform are: username, country, ID and Password. These parameters are essential. Choose them so that you can remember
  - Essential to fill all (*) marked fields in the registration pages
  - After registration – the system goes automatically to the Home-Page=HOME
- The HOME is the "Main InnovCare Center" – from which you can go to all applications that are in the InnovCare Platform.
- Go to "My Watch" – your login name and password to register your watch are presented on this page.

  Username: name.familyName@innovcare.org

Password: 8888

- Go to “Mememtum”, you will find there the username and password to register with Mememtum app.
- Create passwords for any informal caregivers required:
    - Go to Menu – and then ADD/UPDATE – move down until you can click on “ADD INFORMAL CAREGIVER”
    - Register one or more informal caregivers. **Don’t forget to write down the password**
    - The informal Caregiver logins to InnovCare Platform – by using 4 parameters: 3 of them are the USER parameters: the username, country and ID, the 4th parameter is the password just assigned by the system.
- If you have a formal caregiver:
    - Go to “My Health” – the first page you see will show the key medical history that was introduced by your formal caregiver.
    - By clicking on “i” on the left of each term – the system will open up a new tab in which you can see explanations about this term – from governmental trusted sites in English.
    - You can also click on the “G” next to terms (more than one) – and then click on “SEARCH” – the system will open for you a google page – in which you can see a list of occurrences where the medical terms on your medical record are documented (all of them that you have clicked the “G” for **together**).
    - You can explore the “MENU” (a menu **only** for the medical component of the InnovCare system.
    - Click on HOME to go back to the “Main InnovCare Screen”.
- If you **do not have** a formal caregiver
    - **Optionally** – you can **by yourself** edit the data in “My Health” – anyhow please note that it is not meant to be used directly by the user himself.
    - The first page you see will shows the key medical history. At this stage it is empty.
    - Click on the MENU in “ADD/UPDATE” – move down to “Add Medical History”.

- ✓ A dialog box – you can add your medical terms (ask your GP to give you a list of diagnosis, medications, and allergies – the three are the most important terms to be registered.
- ✓ After you write down the terms – please don't forget to click on "UPLOAD".

- Go back to the Menu – and click on "My Health" – now you will see the data you just entered into the system.
- By clicking on "i" on the left of each term – the system will open up a new tab in which you can see explanations about this term – from governmental trusted sites in English.
- Click on the MENU in HOME – to go back to the "Main InnovCare Screen".

## 5.3 *Dashboard*

Go to "Dashboard" on the main menu (formal caregivers, please select a user to see the data first), where you can see the senior's data by following the steps below.

- Choose in the left which module's data you want to use – at the moment "MyWepp" and "Mememtum", but in the future newly integrated modules will be selected here as well.
- Choose the language
- Choose the date range ("from" -> "to"), to see the data

## 5.4 *Communication centre*

In this module the user can stablish a chat/call/videoconference with its contacts. The informal and formal caregivers are already linked to their respective patients; therefore, no manual actions need to be performed to manage the address book.

## 5.5 *My Watch*

Go to "My Watch" on the main menu, where the watch configuration page will be displayed.

- In the main page, the different watch options can be configured (fall detection, measurement rate, synchronization options, alarm buttons…)
- Clicking on the top right corner of the page, on "Client", a drop-down menu will pop up where you can select "Calendar". In this page it is possible to set up alarms and reminders for the senior, that will be synchronised and notified in their watch.

In order to synchronize the watch with the platform, and start receiving measurements and notifications, the credentials in My Watch page must be introduced in the watch during the initial setup.

## 5.6 *Mememtum*

In the Mememtum page, the credentials of the user to log in Mememtum are displayed, along with a set of video tutorials for each of the tests in the app for reference.

In order to install Mememtum, open InnovCare in a smartphone, go to Mememtum, and tap the "Get on Google play" button to trigger the installation process. Once installed, open the app and insert the credentials shown on Mememtum's page. The user will start then receiving periodic questionnaires and requests to perform the different tests.

## 5.7 *Additional resources*

In order to provide support and assistance to the users, the different submodules have additional resources to assist the different users.

**eHealthStudio guides**

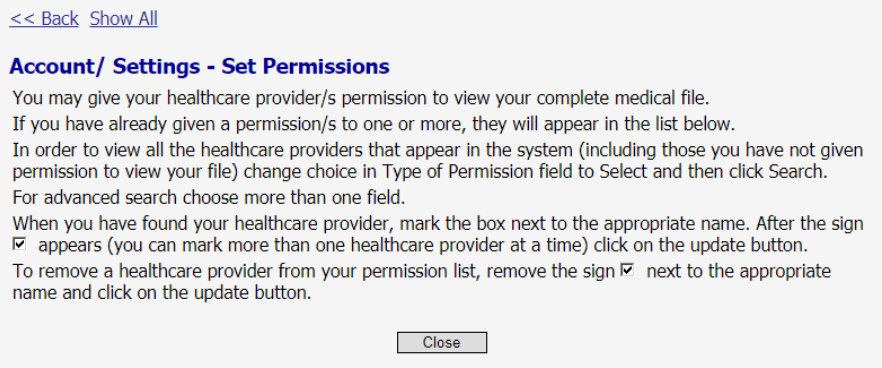



Figure 6. Older adults quick reference guide (I)

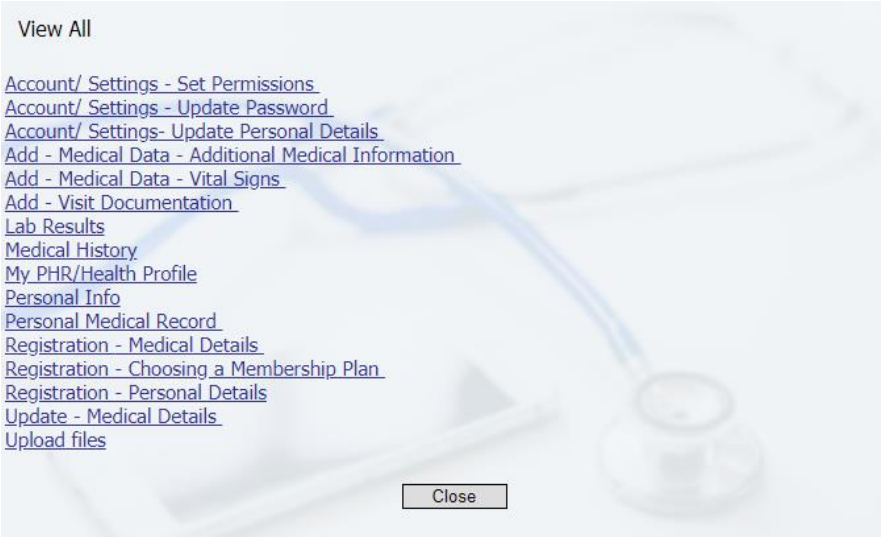



Figure 7. Older adults quick reference guide (II)

## Interactive step-by-step tutor


Figure 8. Step-by-step tutor

## Interface personalization

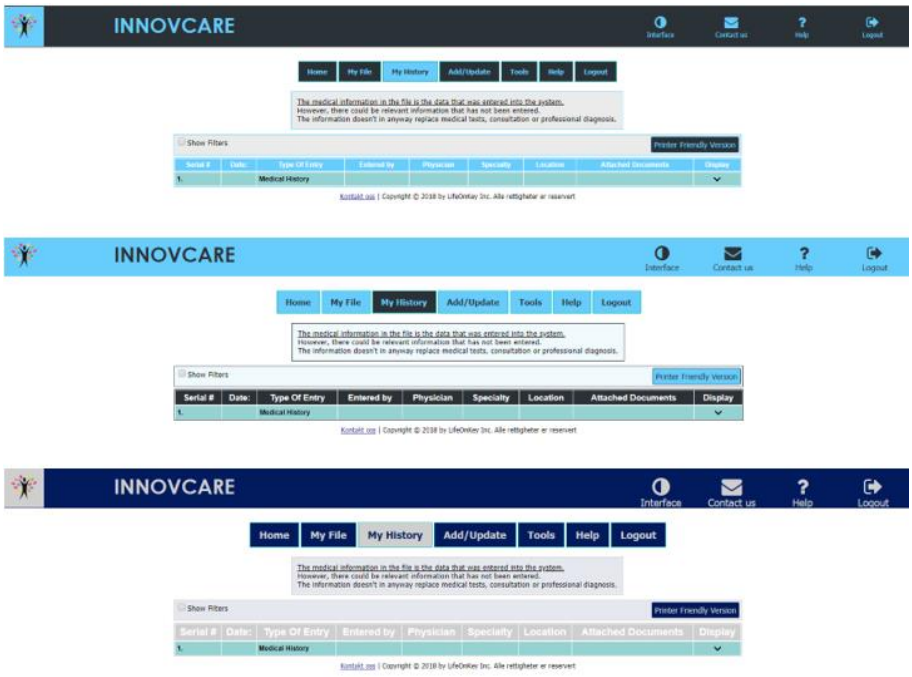



Figure 9. Interface personalization

## Ticketing application

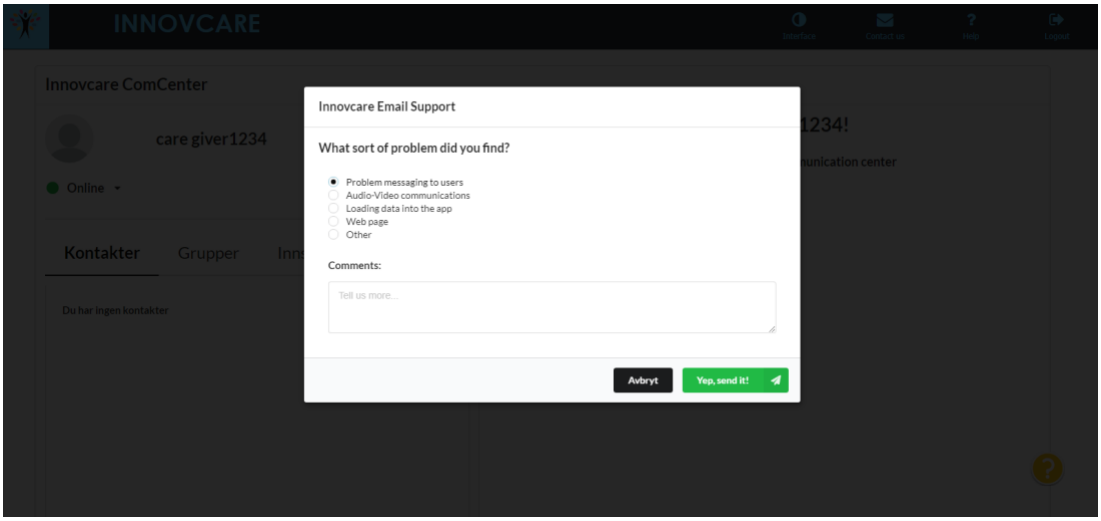



Figure 10. Ticketing application (I)

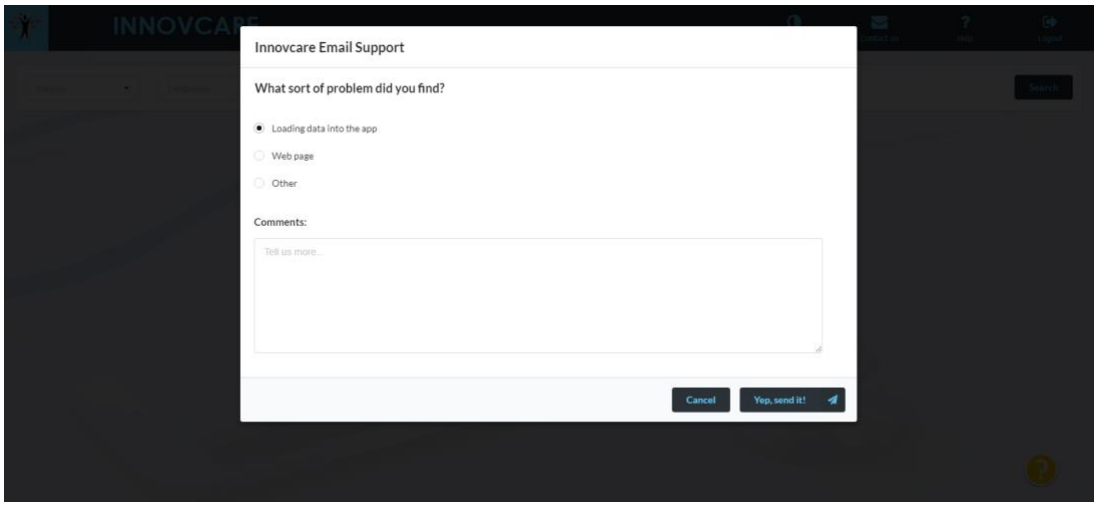



Figure 11. Ticketing application (II)

## Mememtum tutorial videos

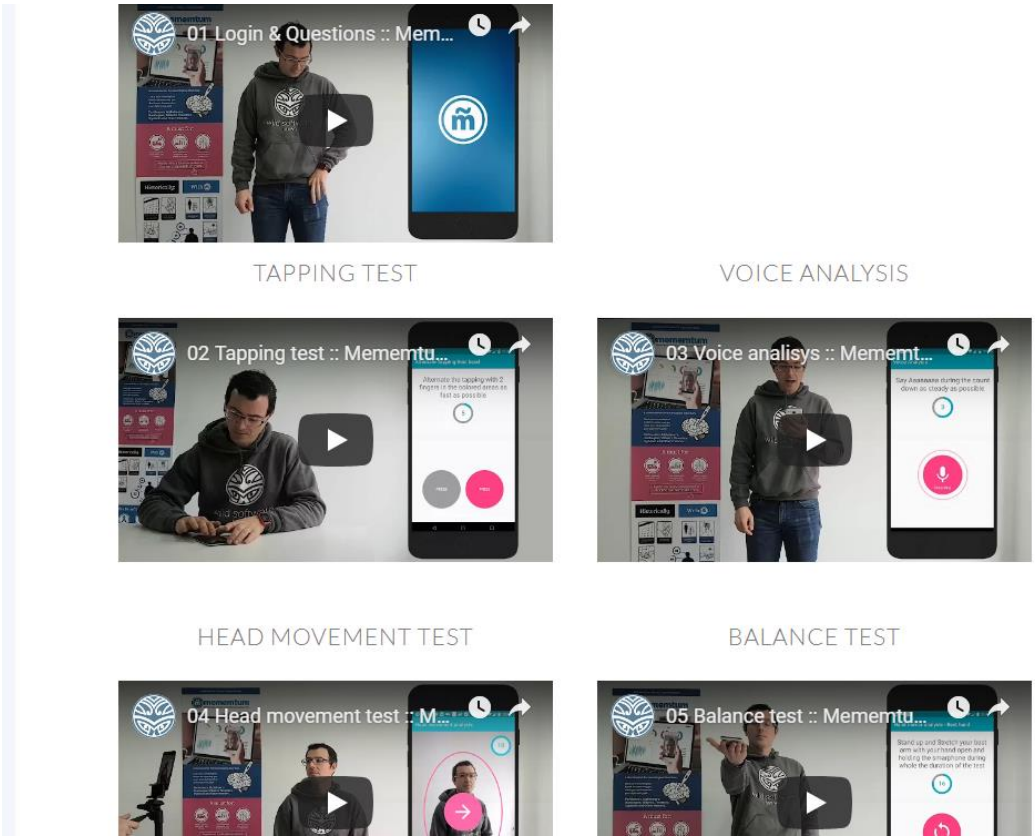



Figure 12. Mememtum tutorials

## MyWepp guides


Figure 13. MyWepp guides

# 6 Conclusions

InnovCare solution will succeed at enhancing and enlarging the independence of older adults. InnovCare platform builds, integrates and merges different highly innovative components already tested that bring up an effective solution to achieve its purposes.

InnovCare's outcomes have been studied from the perspective of the social impact that it will generate. To reach these targets it is necessary the involvement of the carers that will have to teach how to use this software to older adults. Dissemination activities play a crucial role to make InnovCare known. It is also worth highlighting the necessity of keeping the value propositions active throughout the whole life of this project and the future updates of InnovCare will have to take them into account. The contribution of all partners belonging to InnovCare consortium, formal and informal caregivers, device providers, and all the allies has to remain truthful.

As an AAL project, the inclusion of InnovCare to the market will improve the wellbeing, independence, happiness, health, comfort and many other intangible key metrics related to older adults' wealth.

# Annex I: List of figures