



## SOCIAL INTERACTIVE CARE SYSTEM TO SUPPORT THE WELLBEING OF PEOPLE LIVING WITH DEMENTIA

### D.4.3 BUSINESS MODEL RECOMMENDATIONS

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**Authors:**

Linda van der Windt

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*D4.3 Business models recommendations including impact assessment*



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## Management summary

The goal of this report is to recommend the best business model to make Many-Me successful. The report describes the trends on the market of dementia and the different aspects of the market we need to take into consideration: demographics, economical, competitors, target market and market need.

The Many-Me solution offers support to cope with the disease and live an active and meaningful life as long as possible. Enabling support and information when and if necessary to increase their safety, autonomy, and participation in social life, through a social interactive care system based on ICT assistive technology.

The Many-Me solution is split into 2 complementary packages, one for the primary user, the Patient and one for the secondary user, the caregiver( formal or informal).

### **Patient package: B2C- individual consumers**

The package for the Patient integrates 3 embedded solutions accessible through the Many-Me Patient Launcher App:

- Many-Me Patient Activity Recommendation App
- Many-Me Angel for Patient
- Many-Me PHR

### **Caregiver package: B2B- care providing institutes**

The package for the Caregiver integrates 4 embedded solutions accessible through the Many-Me Caregiver Launcher App:

- Many-Me Caregiver App
- Many-Me Community App
- Many-Me Angel for Caregiver
- Many-Me PHR

In the process of finding the best business model for Many-Me we took four types of business models into consideration. The subscription, paid, freemium and free forever business model. In table 5.2 we analyzed all these models in perspective of the Many-Me solution and the best fitting model.

Based on the different Business models we would suggest a combination of Subscription and Freemium which we will call a Paymium Model. This model is suitable for both B2C and B2B market.

## 1. Introduction

The AAL Market and Investment Report was commissioned by the Ambient Assisted Living Association and aims to provide a consolidated view of the existing market and investment information in Europe for the AAL domain. It covers data relevant for AAL and related technologies including current status, trends and future perspective for opportunities in the European Union (EU) and where possible link these to innovation in delivery of services.

The AAL domain broadly represents solutions (i.e. bundled products and services) that have an information and communication technology (ICT) component and are of direct value for older people, their families and carers to enhance their health, wellbeing and independence.

Products and services may also benefit older people indirectly by increasing the efficiency and effectiveness of systems responsible for their wellbeing, health and care. The scope of the AAL report is therefore largely limited to market developments that exclusively or predominantly focus on ageing and the older people. The AAL report also introduces the new and emerging business models that will shape the AAL market in the near future and provides an overview of the technologies that enabled the development of AAL solutions. While the primary goal of the report is to monitor the European market, relevant information on global markets is also included to provide context and indicate the potential for growth.

The AAL Market and Investment report published in May 2018, is a key document for the Many-Me solution which can help demonstrate how our solution can address the market and market needs and expectations and what relevant expectations the solution can have after the project has ended. After the project has concluded we want to make sure that all partners are able to help PwD<sup>1</sup> and their care network and together we can have a commercial success with the market ready product.

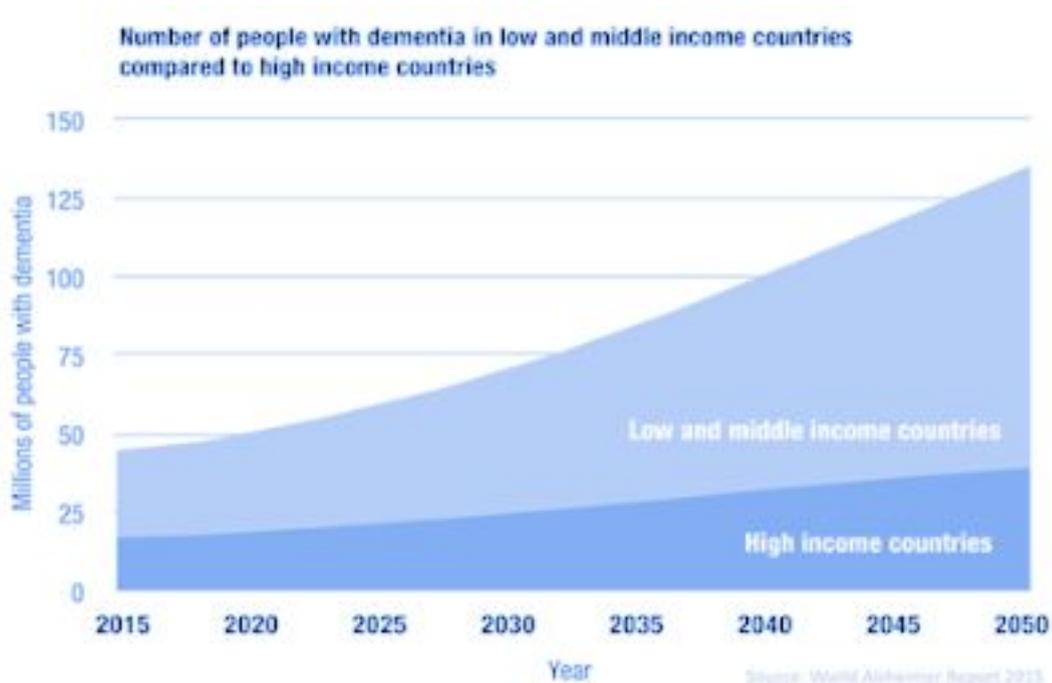
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<sup>1</sup> Persons with dementia

## 2. Trends

### 2.1 Global trends

Every 3 seconds, someone in the world develops dementia, this brings the total of new cases of dementia to 9.9 million people a year. There is an estimate of 46.8 million people who are living with dementia worldwide in 2015. It is estimated that this number will grow substantially in the coming 20 years reaching the 75 million in 2030 and 131.5 million in 2050. As shown in graph 2.1 it can be seen that 58% of the global population lives in the low and middle income countries, this will continue to increase to 68% in 2050. Because healthcare improves every year, people are living longer and healthier lives. This comes with other diseases and disorders, where dementia is one of these<sup>2</sup>.



*graph 2.1*

Globally we define four trends which are relevant for the Many-Me solution:

- Rising life expectancy: more people live longer and need longer and more intensive care

<sup>2</sup> Alzheimer disease international 2015 - <https://www.alz.co.uk/research/statistics>

- Great wish for independency of older people: people are less willing to be dependent on caregivers or other people.
- Decreasing care budgets: average stays of patients in hospitals are shortened
- The spread of information and knowledge through technology<sup>3</sup>

## 2.2 European trends on Dementia

The ratio of people in the EU that are aged 65 or above compared to the people aged 15-64 is expected to increase from 28% in 2015 to 50% in 2060. On average, healthcare consumption increases with age, for example, individuals aged 50+ accounted for almost 70% of all in-patient hospital days in 2013, despite being only about 40% of the population. As a result the need for (long-term) healthcare will increase, since the number of people aged above 65 will increase within the EU. The increase of ageing people will put pressure on the healthcare system and social sector. The social sector will notice that the elderly are in need of care and daily support, ICT solutions may help them to live longer and independently in their own homes.

With old age come certain disorders but also one of the main issues within Many-Me is dementia. Dementia reaches almost 6% (10.5 million people) of the EU population who are 60 years and older. The most well-known disorder from dementia is Alzheimer's disease, which causes dementia in 65% of all cases. The number of people with dementia is estimated to increase from 10 million in 2015 to 13 million in 2030 and 19 million in 2050. Prevalence of dementia increases exponentially with age, doubling with every 6-year increment in age, peaking among those aged 85+ in Europe. With this increase it can be expected that dementia will play a big role in terms of supporting the elderly. This impacts both the quality of life of the PwD as well as the informal caregivers (family members who provide care)<sup>4</sup>.

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<sup>3</sup> United nations 2015 - World Population Aging

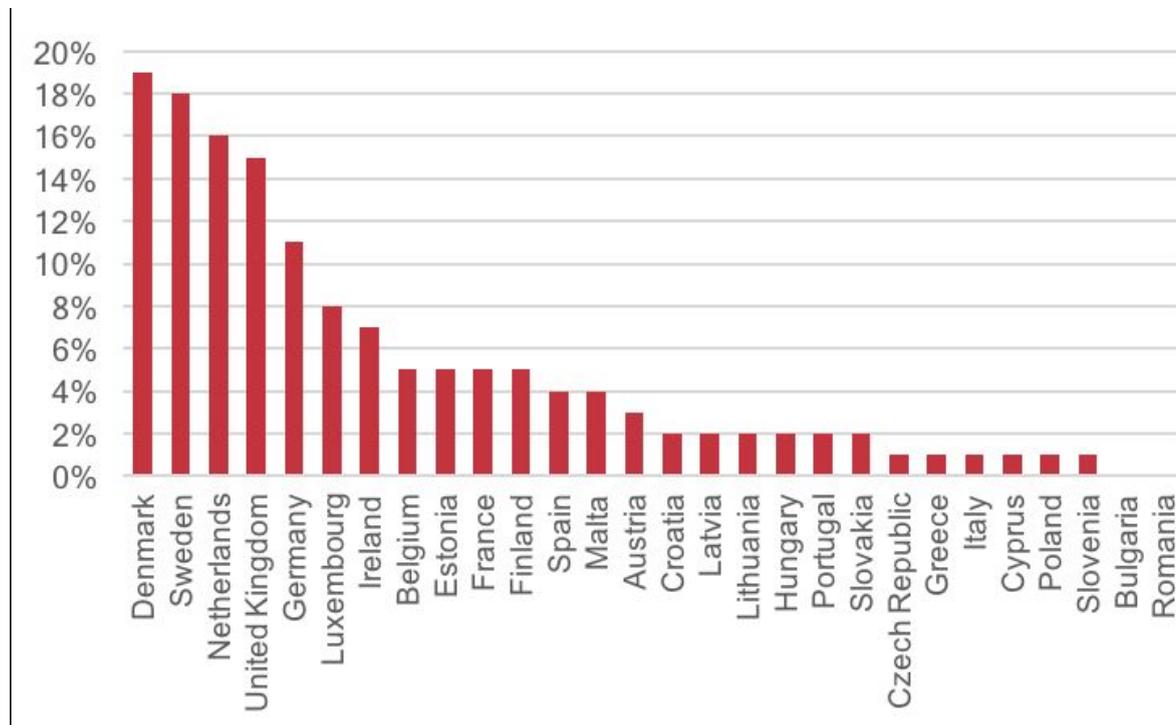
[http://www.un.org/en/development/desa/population/publications/pdf/ageing/WPA2015\\_Report.pdf](http://www.un.org/en/development/desa/population/publications/pdf/ageing/WPA2015_Report.pdf) & Benoit Guerin et al, 2015 - [https://www.rand.org/pubs/research\\_reports/RR920z1.html](https://www.rand.org/pubs/research_reports/RR920z1.html)

<sup>4</sup> AAL 2018 -

<http://www.aal-europe.eu/wp-content/uploads/2018/06/AAL-Market-report-Technopolis-180604.pdf>

### 3. Market

#### 3.1 Demographics (segmentation)



Percentage of 55 to 74 year old that purchase telecommunication services online<sup>5</sup>

#### 3.2 Economic

The total estimated worldwide cost of dementia is US\$818 billion in 2015, which represents 1.09% of global GDP. By 2018, the global cost of dementia will rise above a **US\$ trillion**.

This figure includes costs attributed to informal care (unpaid care provided by family and others), direct costs of social care (provided by community care professionals, and in

<sup>5</sup> AAL 2018

<http://www.aal-europe.eu/wp-content/uploads/2018/06/AAL-Market-report-Technopolis-180604.pdf>

residential home settings) and the direct costs of medical care (the costs of treating dementia and other conditions in primary and secondary care).

Direct medical care costs account for roughly 20% of global dementia costs, while direct social sector costs and informal care costs each account for roughly 40%. The relative contribution of informal care is greatest in the African regions and lowest in North America, Western Europe and some South American regions, while the reverse is true for social sector costs.

This means that if global dementia care were a country, it would be the 18th largest economy in the world. The annual costs exceed the market values of companies such as Apple (US \$742 billion) and Google (US \$368 billion). More information is available in the World Alzheimer Report 2015<sup>6</sup>.

Looking at a research of Alzheimer Europe costs of institutional care per PwD is estimated on € 12.000,- per patient per year, average for European countries. These costs are for informal and formal care. The total societal costs per case are estimated to be 8 times more in Northern Europe than in Eastern Europe.

Regional COI-patterns in Europe (billions €) in 2008.

European Regions	Direct costs	Informal care	Total costs
Northern Europe	35.8	17.3	53.0
Western Europe	27.2	25.3	52.6
Southern Europe	11.3	46.2	57.4

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<sup>6</sup>Alzheimer Europe

<https://www.alzheimer-europe.org/Research/European-Collaboration-on-Dementia/Cost-of-dementia/Regional-National-cost-of-illness-estimates>

Eastern Europe	6.3	7.8	14.2
Europe (including Turkey)	80.6	96.6	177.2

In the base case, the total costs of informal care in Europe is 33 billion € (27 billion € in EU25) (table 13), with a range from 2,202 to 5,148 € per case and year, depending of region.

In summary, the total societal costs of dementia in Europe were estimated to 103 billion € where informal care in the base case constituted about one third of the costs (table 15). The average annual societal cost per demented is 12000 € in Europe and about 14000€ in EU25.

### 3.3 Competitors

We describe the Many-Me competitors in this section, first all separate and in 3.3.1 we analyze all competitors on their functions compared to the Many-Me functions.

#### 3.3.1 Current competitors

In table 3.3.1 below the consortium identified possible competitors that are at TRL (Technology Readiness Level) level 5 or higher and highlighted the core technical features of each service.

Currently running AAL projects in the field of elderly persons and dementia are:

[2PCS](#), [Day Guide en Co-Train](#), [Living well with Anne](#), [eWare](#), [ManyMe](#), [Mi-Tale](#), and [Playtime](#). **SUCCESS**

Table 3.3.1

App Link/Name	Description
<a href="http://myclevermind.com/the-app/">http://myclevermind.com/the-app/</a>	<p>My Clevermind is a voice activated iPad app in which the user can ask a personal assistant (MYIRA) about things such as the weather, time, date etc. Furthermore the application includes several modules such as:</p> <ul style="list-style-type: none"> <li>- Internet</li> <li>- Nutrition and Exercise</li> <li>- Friends &amp; Family (Facebook, Twitter, Google+ and Pinterest links)</li> <li>- Trivia</li> <li>- Games</li> <li>- News</li> <li>- Music &amp; Movies (Linked to Vimeo, Vudu, Youtube, Black and White movies and Jango)</li> </ul>

<http://www.mindmate-app.com/>

MindMate® is the best companion for those ‘young at heart’ who want to reduce the risk of developing memory loss or manage memory decline as they age.

Mindmate makes a difference to your health & wellness through brain exercise games, food & nutrition tips, innovative physical workouts and helps you stay independent using helpful tools & classic entertainment offerings. The mindmate app has the following functions:

**Brain Games** - Stimulate grey matter and reduce the risk of developing cognitive decline.

The MindMate App provides fun and interactive Games to stimulate your cognitive abilities based on world-leading research. Equally useful for Alzheimer’s, Dementia or Parkinson’s patients.

**Food & Exercise** - Stay active with expert advice on MindMate.

Eating the right things and doing exercises can make a real difference to your life. The MindMate App provides you with specially curated physical exercises and nutrition advice to help you live a healthier lifestyle and stay physically, and mentally fit.

**TV & Music** - For those leisurely afternoons.

We have a MUSIC & TELEVISION section within our app where you can watch, listen, dance and sing along with your loved-one to the greatest movies and hits from the 40s, 50s, 60s, 70s and 80s. You can then test your knowledge with our music quizzes!

**My Life** - Cherish your memories.

We let you build your life story, which can be shared with your family and friends. You can also store all the personal information, such as preferred food, favorite music etc. This is especially helpful when you have existing memory problems or wish to see a doctor or visit a hospital.

**Tools** - For those daily routine tasks.

For those users who already live with an early stage of dementia or alzheimer’s or normal aging, the MindMate App provides a unique everyday-tools package. This package contains tools to make notes, to-do lists and customisable reminders to help you in everything from grocery shopping to remembering anniversary

<a href="http://www.dementia-app.nl/">http://www.dementia-app.nl/</a>	<p>The Dementia app is a care app for informal caregivers and their client with dementia. The app features six functions these are:</p> <ul style="list-style-type: none"> <li>- Screen saver Function: The app always starts on the screensaver mode so the client can see what day it is and if any activities are planned.</li> <li>- My day Function: The client with dementia can tap the screen at any time to see what activities they have planned for the day. When an activity is done on that day it won't show up anymore on the agenda so the client can't doubt about it.</li> <li>- Agenda Function: With the agenda function the informal caregiver can make appointments or reminders for the client with dementia, which is being put in the client their agenda. If the client sees the appointment a confirmation will be sent towards the informal caregiver .</li> <li>- Log Function: With the log function the family members, friends and case managers or caregivers , can keep it each other up to date about their personal experiences with people with dementia.</li> <li>- Contact Function: Within the contact function you can reach out to your informal caregiver by video calling them or you could leave a message for your informal caregiver</li> <li>- Photo album Function: In the digital photo album precious photos can be put onto a timeline and be connected with musical fragments. This can be done remotely by the informal caregiver or on the device of the client with dementia.</li> <li>- Memory games Function: It is possible to play various memory games. Not only at the home of the patient but with the video calling function as well. The people with dementia can play a game at any time</li> </ul>
<a href="http://www.guard2me.com/">http://www.guard2me.com/</a>	<ul style="list-style-type: none"> <li>- Switz's equivalent of Many-Me Angel service (geolocation, alerts by SMS )</li> <li>- Need to buy a special watch (major drawback)</li> <li>- No caregiver center, direct family contact</li> </ul>

<a href="http://www.zonmw.nl/alfa">www.zonmw.nl/alfa</a>	<p>Alfa is a AAL project which lasted from 2012 to 2017. ALFA developed a technology to support people in the beginning stages of dementia by stimulating the cognitive functions. ALFA has been set up to slow down the process of dementia.</p> <p>To do this the following instruments were developed in the ALFA project:</p> <ul style="list-style-type: none"> <li>- Visual stimulation, by monitors, projection or tablet to encourage people to walk.</li> <li>- To analyse the gait by sensor technology</li> <li>- A interactive daily planning tool or agenda</li> </ul>
<a href="http://www.aal-europe.eu/projects/happy-walker/">http://www.aal-europe.eu/projects/happy-walker/</a>	<p>The objective of Happy Walker is to develop an ICT-based solution, specifically targeted to the elderly people, that sustains the ability of the elderly people to use different types of transportation as well as their mobility.</p> <p>The proposed mobility oriented services will help the older adults by:</p> <ul style="list-style-type: none"> <li>● stimulating an active lifestyle;</li> <li>● enhancing the outdoor safety features such as, for example, drop-off detection and finding an accessible and friendly walking/driving route;</li> <li>● emergency alarming and localisation;</li> <li>● providing travel planning and support over heterogeneous transportation means;</li> </ul>
<a href="https://www.zembro.com/int-EN/">https://www.zembro.com/int-EN/</a>	<p>An elegant bracelet, it features smart functions and is connected to an app. Zembro personal alarm keeps you in touch with each other. At any time. Including those moments when it is so crucially important. And that gives everyone peace of mind. Because you're always nearby.</p> <ul style="list-style-type: none"> <li>- Belgian equivalent of Many-Me Angel service (geolocation, alerts by SMS )</li> <li>- Need to buy a special watch (major drawback)</li> </ul>
<a href="https://sensara.eu/">https://sensara.eu/</a>	<p>Sensara offers a solution for elderly who don't need nursing care at the moment, elderly that currently receive some home care, local communities to support their elderly population, and nursing homes. The Sensara system receives the signals from the sensors. The software examines all the present and past signals and determines if certain profiles are occurring.</p>
<a href="http://hallozorg.nl/">http://hallozorg.nl/</a>	<p>HalloZorg started in 2012 under the AAL name ConnectedCare. Since 2016 the platform continued the new platform under the name HalloZorg. With HalloZorg it is possible to set up a health network with family, friends and neighbours but also with caregivers.</p>

<a href="https://www.watchi.nl/">https://www.watchi.nl/</a>	<p>Watchi offers a personal GPS assisted alarm in the form of a smartwatch. The user is able to activate an alarm with the press of a button. With Watchi it is also possible to set up reminders for medicine or appointment.</p> <ul style="list-style-type: none"> <li>- Dutch equivalent of Many-Me Angel service</li> <li>- Need to buy a special watch (major drawback)</li> </ul>
<a href="https://www.yoom.nl/">https://www.yoom.nl/</a>	<p>YooM develops ICT solutions that empower care organizations and help people with chronic diseases, like immobility and dementia, to stay active. The YooM brand of bridging distance solutions, supports fundamental contact over distance, which helps care organizations to empower care professionals and clients into organizing their care contact needs. It enables clients, with handicaps, immobility and/or mental problems, to engage in social and health interactions according to their personal preferences. While at the same time allowing effective management of the care and contact moments.</p>

### 3.3.2 Analysis of competitors on function in relation to Many-Me functions

To have an impression of our position towards competitors we made a competitors analysis on functions. Shown in table 3.3.2.

At the moment only Yoom approaches the Many-Me functions the closest, but they miss the Angel function.

*table 3.3.2*

	<b>Many-Me Angel</b>	<b>Many-Me Patient/recommendation</b>	<b>Many-Me Community</b>	<b>Many-Me PHR</b>
<i>short description</i>				
Alfa	Red	Green	Red	Red
Dementia app	Red	Green	Red	Red
Guard2Me	Green	Red	Red	Red
HalloZorg	Red	Red	Red	Green
Happy Walker	Green	Red	Red	Red
Mindmate	Red	Green	Red	Red
Myclevermind	Green	Green	Red	Red
Sensara	Red	Red	Red	Green
Spotter GPS	Green	Red	Red	Red
Watchi	Green	Red	Red	Red
YoooM	Red	Green	Green	Green
Zembro	Green	Red	Red	Red
Nettie	Red	Red	Red	Green

### 3.4 Target market

In this section we define our two markets and our target groups and their main drivers. The strength of Many-Me is the integrated solution for all target groups.

The Many-Me solution targets on a business to consumer (BtoC)market and a business to business (BtoB)market.

For the B2C market we focus on patients with dementia in stage 1 and 2 and informal caregivers. For the B2B market we target on care providing institutes where all target groups occur. Typical for the buying process of consumers is they are driven by emotion. Buyers on a B2B market buy driven by logic, cause they want to save time and money.

The cost of a sale for the business-to-business market is more expensive and typically higher than the business to consumer market. The easiest way to explain this is that a business-to-business transaction often takes more consideration and more people tend to be involved, requiring more decision makers. The B2B consumer will more often than not need to be able to prove a return-on-investment for their purchase

We define four target groups:

Target Groups	Main motives
Patients in early stages of dementia	Independency and safety
Patients in middle stages of dementia	Support and safety
Informal caregivers	less stress, saving time, education and communication
Professional caregivers	efficiency, risk reduction, communication and coordination

### 3.5 Market need

The table below presents the aspirations and needs of each target group and the innovative ways in which current/future Many-Me solutions will/can respond.

Target Groups	Aspirations & Needs	Many-Me Proposed Solutions
Patients in early stages of dementia	<ul style="list-style-type: none"> <li>- Continue to live a meaningful life as part of their community</li> <li>- Stabilize/slow cognitive and functional decline</li> <li>- Reduce depression and isolation</li> </ul>	Based on detailed profiles, patient needs and preferences, Many-Me will offer customized support and matchmaking services: <ul style="list-style-type: none"> <li>- Gamification engine empowering them to help themselves</li> <li>- Matchmaking of users, allowing them to connect, meet, play and learn from each other</li> </ul>

		<ul style="list-style-type: none"> <li>- Support platform with customizable structure of information, advice and support, allowing users to select and engage based on their preferences</li> </ul>
Patients in middle stages of dementia	<ul style="list-style-type: none"> <li>- Live well and receive appropriate care, including by improving safety and orientation</li> <li>- Receive timely advice and human support when required</li> <li>- Prevention/alarm features to prevent serious risks</li> </ul>	<p>Many-Me will offer assistive services to help patients perform tasks, as well as a permanent connection with carers through smart mobile devices:</p> <ul style="list-style-type: none"> <li>- Patient smartphones will offer in an accessible manner audio &amp; video cues to help them safely perform tasks or find solutions to common problems</li> <li>- Many-Me Angel application will allow family or carers to use smartphones to “remote control” a patient in a stressful situation back to safety</li> <li>- The pulse and status of the patients will be monitored using a smart bracelet and other smart connected health measurement devices. Many-Me will trigger automatic alert for caregivers when various thresholds are reached</li> </ul>
Informal caregivers	<ul style="list-style-type: none"> <li>- Increased well being by reducing stress and care burden, as well as sharing responsibilities</li> <li>- Continuous education and learning about effective communication and provision of care for the patient</li> <li>- Access support networks by peers and professionals</li> </ul>	<p>Many-Me project treats the wellbeing and effectiveness of the informal caregiver as the central element of the system, aiming to enhance their skills and abilities in order to provide better care services while reducing overload and stress:</p> <ul style="list-style-type: none"> <li>- Intelligent algorithms will be used to help prioritize caregiver activities, including through intelligent reminders and a smart calendar function that rearranges itself based on user’s condition and inputs from selected users (patient, caregiver, doctor, and family)</li> <li>- Based on caregiver experience and needs, the system will recommend options to receive or provide training and reward their achievements through a gamification system</li> <li>- Informal caregivers will access and benefit from the structured information provided by a large network of peers and professionals, including to automatically receive motivational materials, notifications regarding critical aspects of working with dementia patients and the best rated discussion/topic from each day</li> </ul>
Professional caregivers	<ul style="list-style-type: none"> <li>- Increase the effectiveness of care and working conditions</li> <li>- Timely identify potential risks and quickly adapt to patient needs</li> </ul>	<p>The project aims at reducing the overall pressure on the healthcare systems by allowing people with dementia live longer and in better conditions at home as well as by offering professional carers tangible benefits through ICT solutions:</p> <ul style="list-style-type: none"> <li>- The system will use algorithms to help professional caregivers identify which patients need them most, as well as to recommend actions based on their patients medical profile and evolving patient situation</li> </ul>

*D4.3 Business models recommendations including impact assessment*

	<p>- Enhance communication and coordination</p>	<p>- By receiving feedback and information from informal carers, medical staff will be able to closely monitor treatment plans and timely address any emerging issues, including provide critical support through the Many-Me Angel application in life-threatening situations</p> <p>- By using a collaborative system, professional carers will not only learn from each other but build trust and enhance communication between a network of support with clear roles, responsibilities and procedures, aimed at improving quality of life for people with dementia</p>
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([https://www.thebusinessplanshop.com/blog/en/entry/market\\_analysis\\_for\\_business\\_plan](https://www.thebusinessplanshop.com/blog/en/entry/market_analysis_for_business_plan))

## 4. Proposition

### 4.1 Proposition and customer needs

The Many-Me innovative solution is developed to meet the needs of **older adults with early and middle stages of dementia to live an active and meaningful life as long as possible**. A PwD wants to feel safe, autonomous and participate in social life.

**“As a patient with (early-mild-severe) dementia, I would want my cure and care network to be with me and exactly where I am at that moment and every other moment. I would want my cure and care network to know where I am and how I am doing here and everywhere else. I would want to be in charge for as long as I can. I would want them to know what to do when I can’t anymore.”**

### 4.2 Core product

The Many-Me solution offers support to cope with the disease and live an active and meaningful life as long as possible. Enabling support and information when and if necessary to increase their safety, autonomy, and participation in social life, through a social interactive care system based on ICT assistive technology.

Moreover, what makes the Many-Me solution particular is the fact that it addresses not only the PwD, but **also formal and informal caregivers**, offering a number of assistive technologies that can enable them to connect to a network of caregivers, enabling close monitoring of patient status and response to treatment, alert over changes in patient condition and potential problems, reducing overburden and stress and playing an effective role in a resilient support network for the patients with dementia

1. With the Many-Me solution the patient connects with patients and caregivers, manages his health and provides his own doctors with the information they need. Caregivers can get access to the patient’s information and monitor, follow and interact with their patients.
2. With the Many-Me solution the patient and his/her caregivers (formal/informal) are able to help raise health literacy and educate informal caregivers through e-learning.
3. With the Many-Me solution patients friends and family or other dedicated (in) formal caregivers can truly take care of him when he can’t anymore.



#### 4.3 Services: two complementary packages

The Many-Me solution is split into 2 complementary packages, one for the primary user, the Patient and one for the secondary user, the caregiver( formal or informal).

##### **Patient package: B2C- individual consumers**

The package for the Patient integrates 3 embedded solutions accessible through the Many-Me Patient Launcher App:

- Many-Me Patient Activity Recommendation App
- Many-Me Angel for Patient
- Many-Me PHR

##### **Caregiver package: B2B- careproviding institutes**

The package for the Caregiver integrates 4 embedded solutions accessible through the Many-Me Caregiver Launcher App:

- Many-Me Caregiver App
- Many-Me Community App
- Many-Me Angel for Caregiver
- Many-Me PHR

#### 4.4 Many-Me Consortium

The Many-Me solution can only work if we don't try to reinvent the wheel. We need to connect patients, informal caregivers and formal caregivers. Therefore, our consortium consists of the right partners that are active in all these fields, including providers of the right ehealth tools and components. Most importantly they have a mutual believe in doing what we all do best and combining these forces to build the total package we actually all wanted to do in the first place to meet the need of PwD.

## 5. Business Models analysis

### 5.1 Business models: a general description

Many-me consists of different apps that seamlessly connect to each other. The four different apps focus on different target groups and functions; all together the whole circle around a PwD is covered by the four apps: the Many-me solution. This solution needs to have a business model that's sustainable and flexible.

The project intends to come up with four different kind of business models; Paid, Freemium, Subscription and Free.

In this chapter we describe different types of business models and make a small impact analysis based on the business model canvas. On that analyses we choose a model which will benefit Many-me.

#### **Free Model**

In this model, users don't pay to download or use the app. By removing the barrier of price, you increase the likelihood that users in the target market will download and try it, which can help to increase awareness of the app and grow its user base.

Some developers choose to offer their app for free and earn revenue by displaying ads within the app. Apps that generate significant ad revenue tend to be those with many users who spend a lot of time engaging with the app. If ads are shown in the app, make sure they are appropriate and relevant to its target market, as low-quality, obtrusive, or inappropriate advertising will reduce engagement and retention.

#### **Paid Model**

In this model, users pay once to download the app and use all of its functionality. There are no additional charges. The paid model resonates with users who prefer to pay once to get the full app experience, without in-app purchases.

Because the cost to download may make users consider the app's value more carefully, successful paid apps are often positioned as premium experiences through outstanding design, functionality, and marketing.

Since paid apps have only one point of monetization, marketing plays an even more important role in acquiring users. Successful developers make sure that their app's title, icon, description, preview, screenshots, and other marketing communications effectively showcase the premium nature of the app.

If you have multiple paid iOS/Android apps, you can leverage app bundles, which make it easy for users to buy up to 10 of your apps in a single purchase at a reduced price.

#### **Freemium Model**

In this model, users pay nothing to download your app and are offered optional in-app purchases for premium features, additional content, subscriptions, or digital goods. This model allows users to get something great at no cost and have the option to pay if they want to enhance their experience or engage more deeply.

Many successful freemium apps offer engaging experiences to all users, regardless of whether or not they choose to spend, and can provide customized experiences based on users' preferences. These apps are designed to be freemium from inception, and are built to allow for measurement and enhancement throughout the app's lifecycle.

While freemium apps are very popular, this model isn't appropriate for every app. Successful freemium apps operate as services that are continuously supported, often requiring sustained content development to retain users.

#### **Subscription Model**

In this model, users can buy in-app purchases to access content, services, and experiences for renewable or non-renewing durations.

Auto-renewable subscriptions give users access to content or services from within your app on an ongoing basis. At the end of each subscription duration, the subscription will automatically renew until a user chooses to cancel it. Auto-renewable subscriptions can offer in-app purchases that provide users with a range of service levels and durations to best meet their needs.

As with freemium apps, successful subscription apps focus on retaining users by providing app updates that continually improve the app experience. To be eligible for auto-renewable subscriptions, plan to update the app with feature enhancements or expanded content regularly.

Non-renewing subscriptions are for a limited duration and require users to renew each time a subscription ends. Users are notified when the subscription is due to expire with a prompt to purchase a new subscription.

Subscriptions can be offered as part of a freemium or paymium experience, and subscription in-app purchases can be offered alongside other in-app purchase types.

## **5.2 Business models for Many-Me**

In the process of finding the best business model for Many-Me we took four types of business models into consideration. The subscription, paid, freemium and free forever

business model. In table 5.2 we analyzed all these models in perspective of the Many-Me solution and the best fitting model.

*Table 5.2*

	Subscription	Paid	Freemium	Free forever
Type	Subscription model pay per use.	One time Sale	Free option for primary users and for secondary users. Monetized by backend adds. Paid for businesses and end user organisations	Free for everyone: primary users, secondary users and companies.
Benefits	Highest value	Lower cost sale	Viral adoption	Easy adoption
Challenges	High budget on marketing and sales for advertising Many-Me to care consumers, care institutions and other similar entities	Only getting revenue at the start.	High budget on marketing and sales for advertising it to medical professionals and doctors	Need to get a high usage in order to monetize it

Comments	High need of establishing a network of care institutions	Easy to implement by uploading solutions on Google Play Store	Requires a large number of users Usually sought out model chosen by Software companies launching a product	Not so many companies go for this model High investment to increase usage and user base which could not prove out so profitable at the end
Impact	reduce overburden and stress for professional carers Reducing time spent for formal carers through the Many-Me caregiver apps Budget reductions for care organizations spent on different solutions for streamlining the carer distribution process, route optimization, calendar and bookings optimization	Short term: increase PwD safety, autonomy, and participation in social life. Short term: introduce informal carers to tailored education, information and technological support	Long term: increase PwD safety, autonomy, and participation in social life. Long term: introduce informal carers to tailored education, information and technological support	Short term: increase PwD safety, autonomy, and participation in social life. Short term: introduce informal carers to tailored education, information and technological support

Revenues	High, all users pay	Low	High from business and end user organisations income	None
Impact partnerships In the business or marketing	High, partners with a lots of end users help to market	High, partners need to pay for it, might be conflicting interests	Partners are an important part of the business model	High partners provide end users
Impact assessment	High	Low	High	Medium

Viewing all these criteria for the four models we ranked them all to find the best fit. The conclusion is described in 5.3.

### 5.3 Conclusion

Based on the different Business models we would suggest a combination of Subscription and Freemium which we will call a Paymium Model. Its analyzed now as the preferable way to go forward, but still open for better suggestions and amendments within the consortium.

#### **Paymium Model**

In this combination of the paid and freemium model, users pay to download your app and have the option to buy additional features, content, or services through in-app purchases if they want to engage more deeply.

Successful paymium apps offer premium design, functionality, and content, plus advanced features intended to complement the experience.

As with paid apps, the cost to download may make users consider the app's value more carefully. Successful paymium developers set expectations about what users get when they pay upfront and what they will get if they purchase optional enhancements. If the features offered through in-app purchase are required to use a paymium app, this can cause a negative experience and may affect sales and retention for Many-Me.

In managing Many-Me's lifecycle, the paymium model offers the possibility of lowering the app's download price while using in-app purchases for ongoing monetization. Paymium apps can also be included in app bundles on the App Store.



#### *D4.3 Business models recommendations including impact assessment*

This model is suitable for both B2C and B2B market. The difference is that for the B2B market we will provide organizations with a way to subscribe as an organization, and not as an individual so individual caregivers don't have to buy it privately.



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