Implementation and Upscaling of AAL Solutions

Chair
Dr. Henk Herman Nap – Team eHealth, Vilans

Agenda

14:00-14:05	Welcome and short introduction (Henk Herman Nap, Vilans)
14:05-14:15	eHealth successes and 'failures' - lessons from the past (Henk Herman Nap, Vilans)
14:15-14:30	AAL business model (Frederic Ehrler - Swiss)
14:30-14:50	Business models and upscaling of Lifestyle monitoring in The Netherlands (Johan van der Leeuw, Vilans)
14:50-15:05	Public procurement of eHealth innovations across Europe (Richard Foggie & Sofia Moreno-Perez – UK & Spain)
15:05-15:25	Panel Discussion (all + Dutch AAL NCP Geja Langerveld)
15:25-15:30	Closure

eHealth Successes and 'Failures'

Turning hindsight into Foresight

Dr. Henk Herman Nap – Team eHealth, Vilans

Vilans

Kenniscentrum langdurende zorg

Vilans

- Centre of Expertise for long-term care
- Improve quality of care for
  - Chronically ill
  - Vulnerable older people
  - People with disabilities
- For professionals & managers, insurers, municipalities
- Innovation, research and development (H2020, VWS, AAL...)
- Dissemination of (established) good practices
- Implementation

eHealth - Where are we?
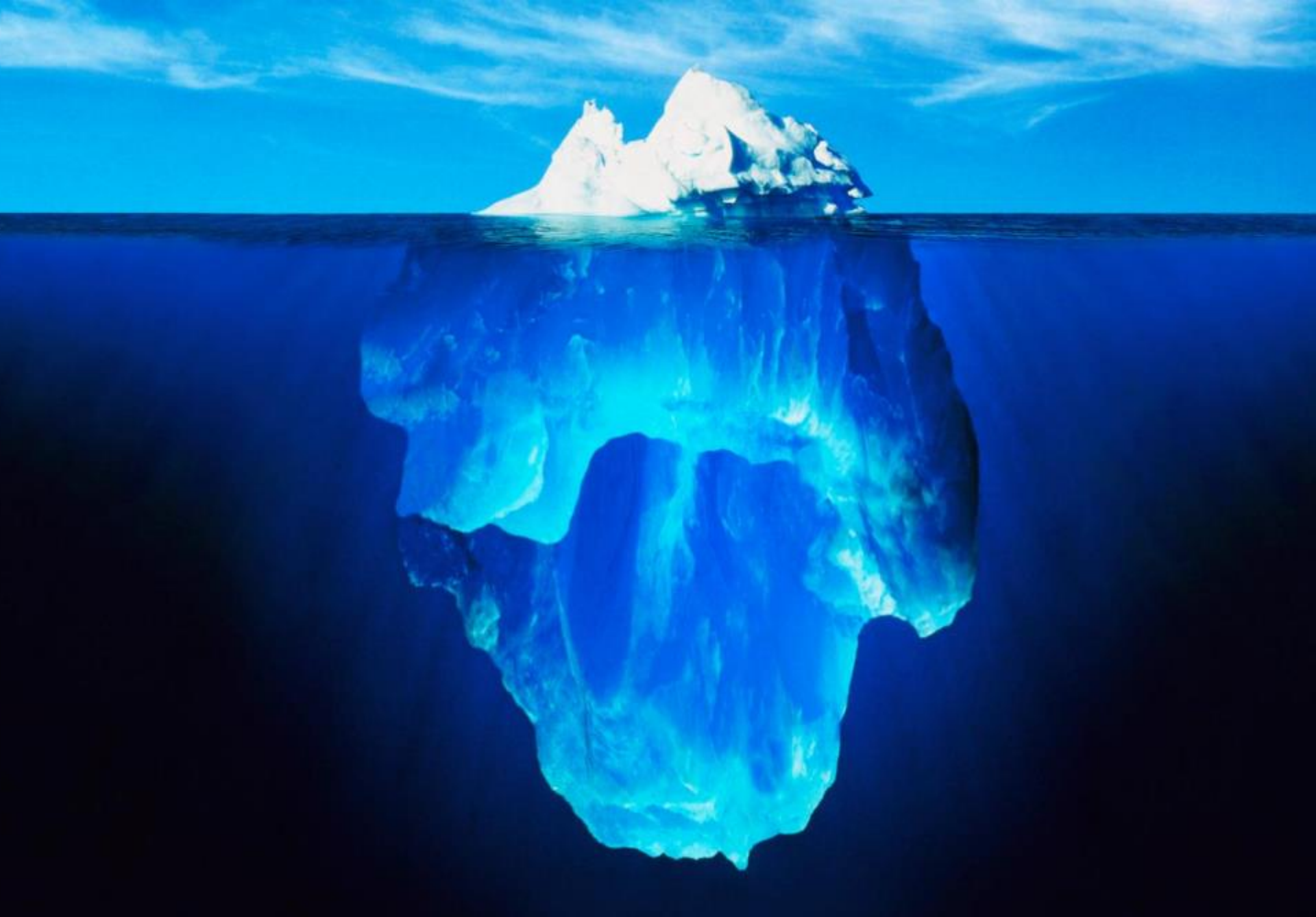
"Positive findings are around twice as likely to be published as negative findings. This is a cancer at the core of evidence-based medicine."
- Ben Goldacre

Point Solutions Are (Ultimately) Pointless (Eric Peterson)

- Adopting eHealth has more to do with workflow integration and payment models.

- The majority of health tech applications and platforms are narrowly defined, purpose-built to address a single disease state or deliver a single class of interventions.

- Doctors don't have the bandwidth to manage multiple, dedicated solutions.

Get the Picture

Software for the assessment of a client (VVT)

- A care professional has 20 minutes to do an assessment
- It takes 1.5 to 2 hours…

- *Accessibility & Usability*
- *Keep It Simple!*

Cooking games

Physical games

Teaching Older Adults to Play Minecraft

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ABSTRACT

Digital games have become a popular pastime among older adults and are increasingly used in therapeutic interventions for this age group. Nonetheless, the literature on how to instruct older gaming neophytes to a new medium is scarce. The goal of this paper is to contribute to the body of knowledge on game instruction for older adults through the exploratory, in-depth analysis of a 5-session workshop with 3 retired older adults (aged 64, 67 and 78). During this course, the older adults were introduced to the game Minecraft. The paper provides a number of recommendations with regards to the instruction, as well as an overview of how the participants perceived the game and the potential added value it holds for their lives.

Categories and Subject Descriptors

I.6.8 [**Types of Simulation**]: Gaming - K.8.0 [**General**]: Games

Keywords

the game is popular with young children, and the prospect of getting to know a hobby of their grandchildren was expected to be enticing to our target age group [13].

In Minecraft, there are thousands of additional content sources and game modifications (known as "mods") that extend the base game to a large extent, but for the workshop we relied on "vanilla" (i.e., unmodified) Minecraft. Primarily, we aimed to avoid overwhelming the participants with unnecessary complexity. This is to increase comfort and familiarity as the participant increases their aptitude for the game. This can be called "progressive disclosure", characterized by slowly introducing incrementally more complexity only as quickly as the player is comfortable [8].

The study had the following research goals:

1. to study the introduction of Minecraft in the lives of older adults (through a classroom experience),
2. to research the possibilities and challenges of playing

Participants

TONY (67, MALE)　　　MAY (64, FEMALE)　　　SUE (78, FEMALE)
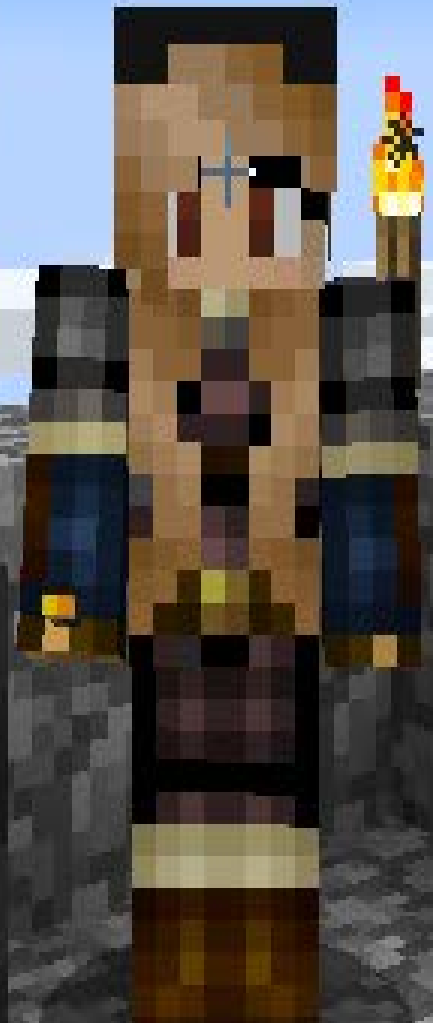
From constraints & disabilities to opportunities & abilities

Too much…
focus on wellbeing?

- Restorative environments
- Training games
- Sociale platforms
- TV platforms
- Social robots
- Etc.

Who is going to pay for this?

Work with the organizations that pay...

Validation is Key?

Vilans
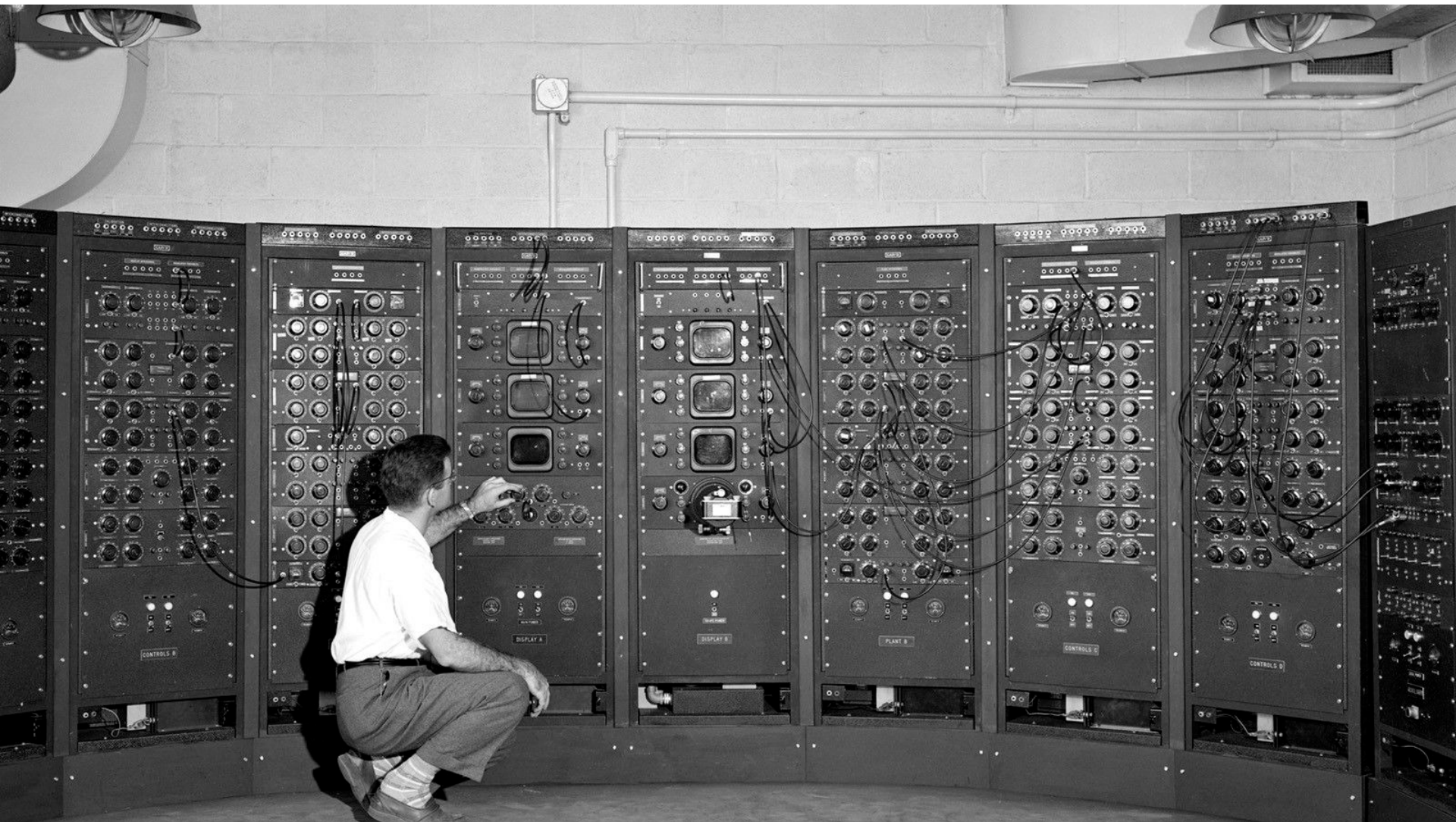
Wrap up

- Be more honest in dissemination
- Share failures & successes
- Get the whole picture
- Understand the difference between research and marketing a product
- Look at eHealth now and can we make it better?
- Start out with abilities and opportunities for the aging population
- Focus on care and wellbeing, know where the money goes

More info?

Please contact the Vilans eHealth team:

- Dr. Henk Herman Nap, Senior Advisor/Scientist Innovation in eHealth, Vilans h.nap@vilans.nl

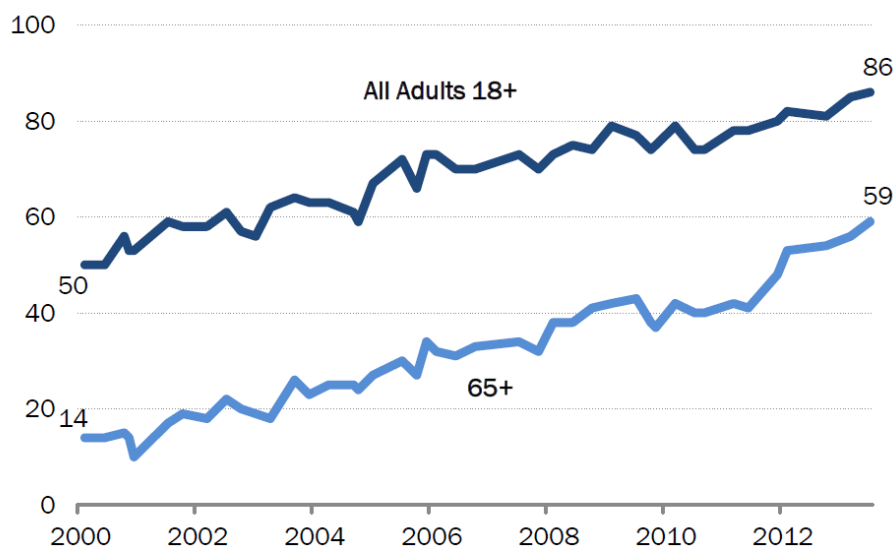www.**domoticawonenzorg**.nl

Upscaling mobile app for elderly market

Frederic Ehrler, PhD

University Hospitals of Geneva

An increasing adoption of technology

Internet adoption over time, seniors vs. all adults

% of seniors/all adults who go online, 2000-2013

Cell phone and smartphone adoption among seniors

% of seniors (ages 65 and older) who own a ...

	Cell phone	Smartphone
Total for all 65+	77%	18%
Age		
65-69	84	29
70-74	84	21
75-79	72	10
80+	61	5
Education		
High school grad or less	70	10
Some college	80	19
College graduate	87	35
Household Income		
<$30,000	67	8
$30,000-$49,999	83	15
$50,000-$74,999	88	28
$75,000+	92	42

Pew Research Center's Internet Project July 18-September 30, 2013 tracking survey.

PEW RESEARCH CENTER

Senior population is a promising market for mobile app

- New Michigan State University research has found that the use of tablets does make it easier, breaking down some of the barriers that keep seniors from getting connected.

The new generation of senior app are rising
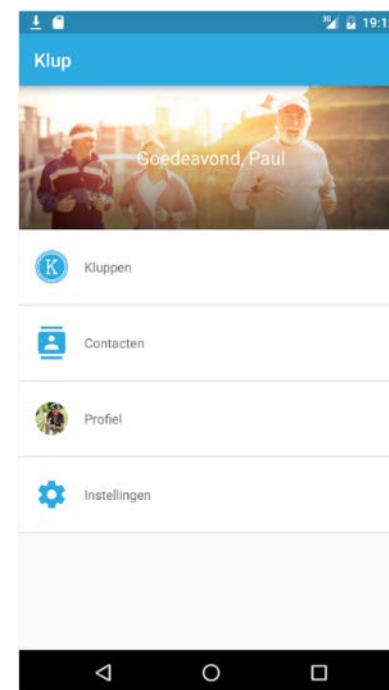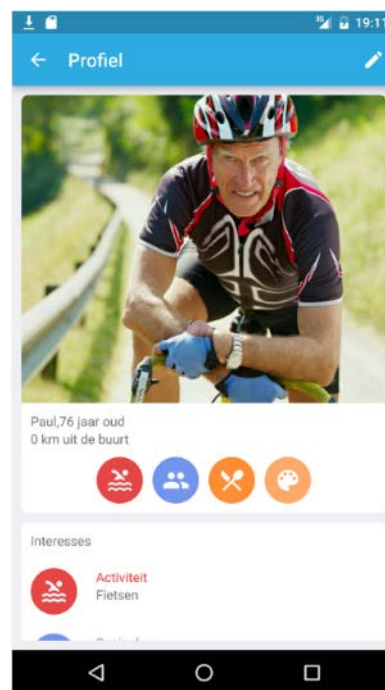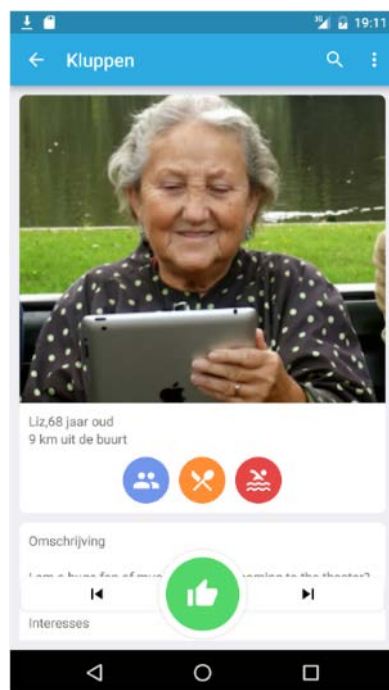
What kind of app do they use

- iBooks (free)
- Words With Friends (free).
- NPR (free)
- Netflix (free)
- Luminosity Brain Trainer (free)
- AllRecipes (free)
- The Weather Channel (free)
- Well Being Plus (free)
- MedWatcher (free)
- Medisafe
- Virtual Pillbox
- Red Panic Button ($1.99)
- Find my iPad (free)

The Business Model Canvas

Key Partners

Who are our Key Partners?
Who are our key suppliers?
Which Key Resources are we acquiring from partners?
Which Key Activities do partners perform?

- App platforms
- Press release distribution services
- Translators & country-expert designers
- Satisfied customers (→ good ratings)

Key Activities
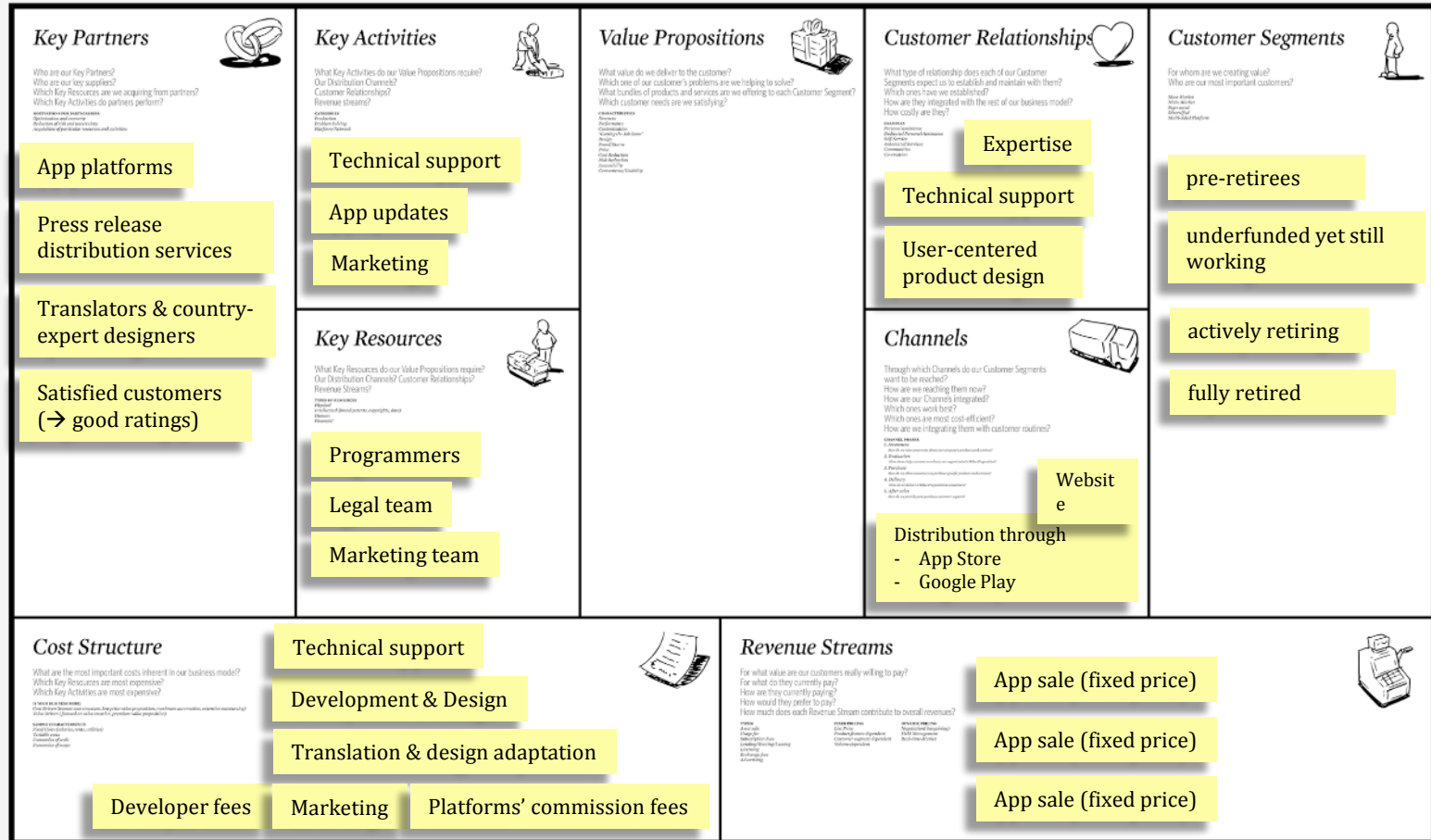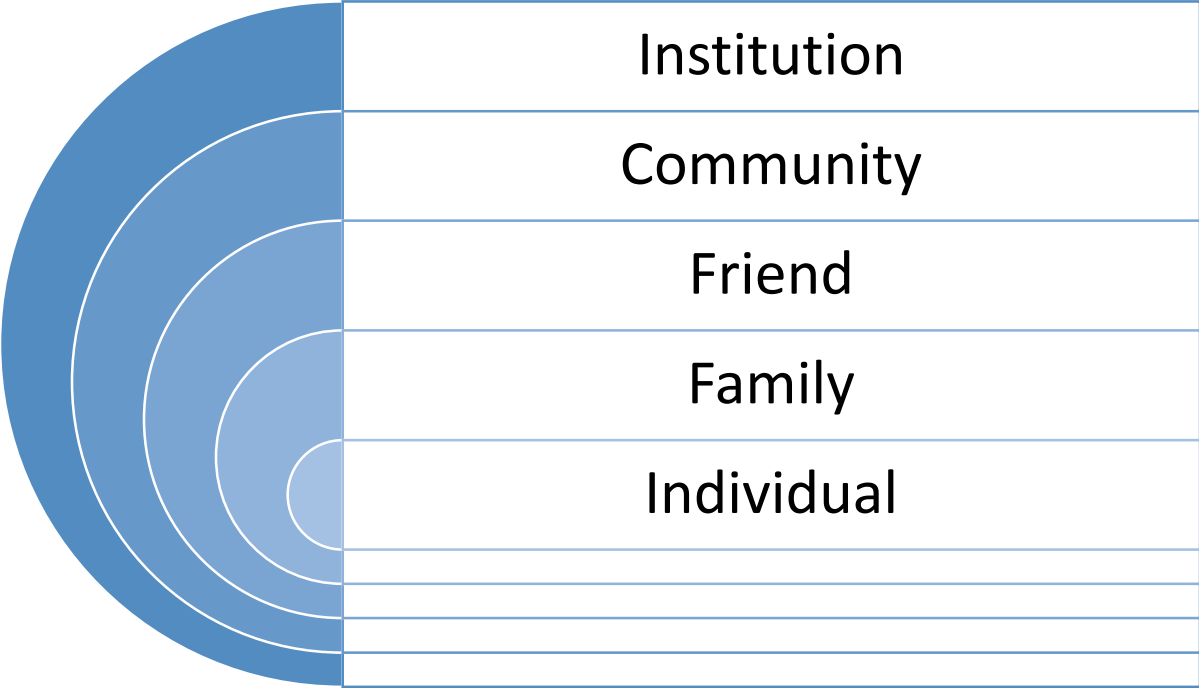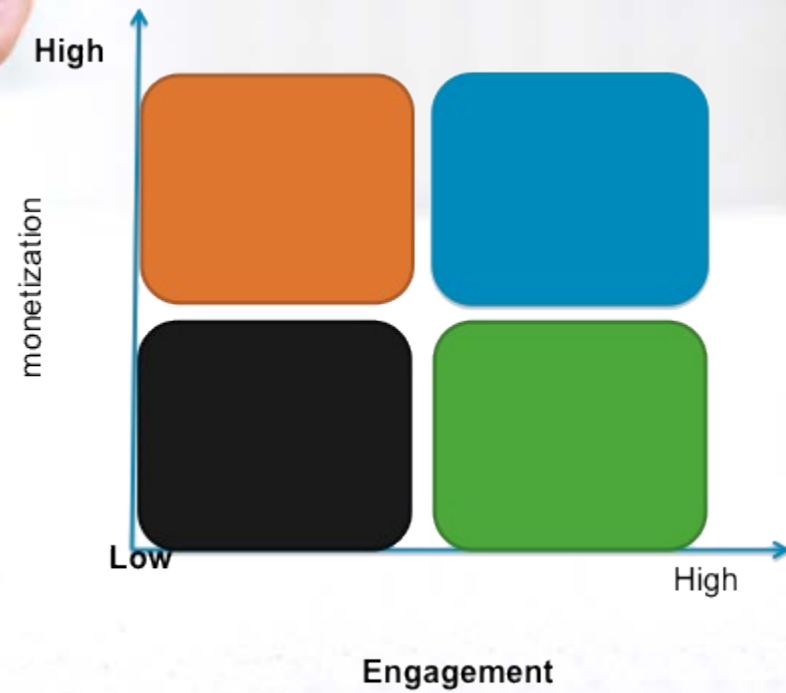
What Key Activities do our Value Propositions require?
Our Distribution Channels?
Customer Relationships?
Revenue streams?

- Technical support
- App updates
- Marketing

Key Resources

What Key Resources do our Value Propositions require?
Our Distribution Channels? Customer Relationships?
Revenue Streams?

- Programmers
- Legal team
- Marketing team

Value Propositions

What value do we deliver to the customer?
Which one of our customer's problems are we helping to solve?
What bundles of products and services are we offering to each Customer Segment?
Which customer needs are we satisfying?

Customer Relationships

What type of relationship does each of our Customer Segments expect us to establish and maintain with them?
Which ones have we established?
How are they integrated with the rest of our business model?
How costly are they?

- Expertise
- Technical support
- User-centered product design

Channels

Through which Channels do our Customer Segments want to be reached?
How are we reaching them now?
How are our Channels integrated?
Which ones work best?
Which ones are most cost-efficient?
How are we integrating them with customer routines?

- Website
- Distribution through
  - App Store
  - Google Play

Customer Segments

For whom are we creating value?
Who are our most important customers?

- pre-retirees
- underfunded yet still working
- actively retiring
- fully retired

Cost Structure

What are the most important costs inherent in our business model?
Which Key Resources are most expensive?
Which Key Activities are most expensive?

- Technical support
- Development & Design
- Translation & design adaptation
- Developer fees
- Marketing
- Platforms' commission fees

Revenue Streams

For what value are our customers really willing to pay?
For what do they currently pay?
How are they currently paying?
How would they prefer to pay?
How much does each Revenue Stream contribute to overall revenues?

- App sale (fixed price)
- App sale (fixed price)
- App sale (fixed price)

Customer segment: Elderly are part of an large ecosystem

Institution
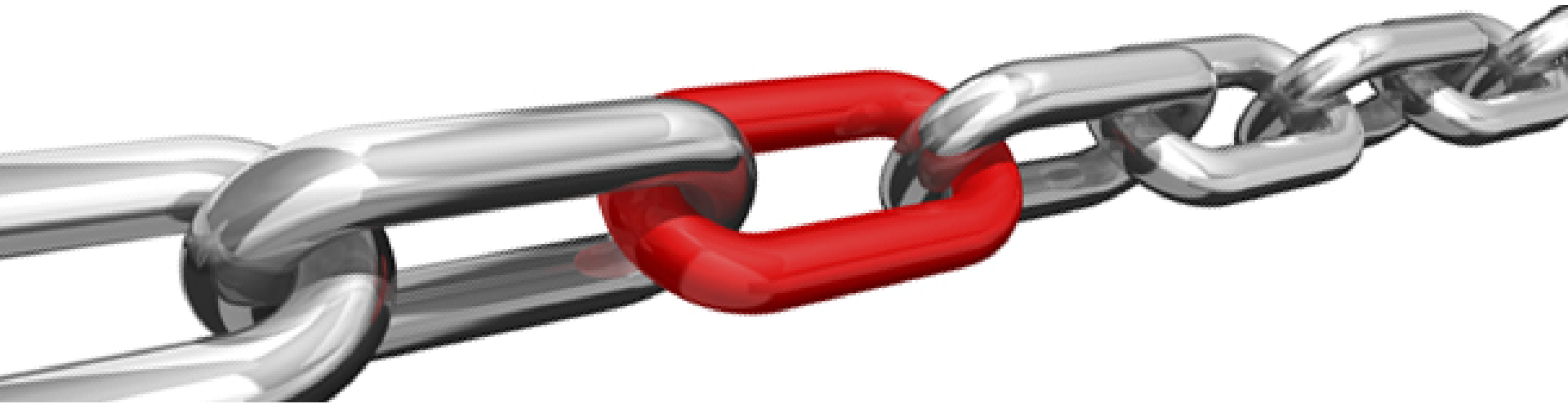
Community

Friend

Family

Individual

The customer segment

Key partners

- This building block refers to the network of suppliers and partners that make the business model effective

- In order to optimize operations and reduce risks of a business model, organization usually cultivate buyer-supplier relationships so they can focus on their core activity

Key partners

- App platforms
- Press release distribution services
- Translators & country- expert designers
- **Satisfied customers (→ good ratings)**

Marketing

- Building a great product isn't enough to make your app the next Angry Birds

- to create a sustainable app, you need to build in solid marketing and distribution strategies to get your app into the hands of the people who need it most.

- Marketing to seniors involves establishing a relationship, building **trust** and **providing opportunities for growth**, **learning and interaction**.

- Seniors are known for developing long-term brand loyalty, so **an honest and forthright approach is vital to reaching this important segment of the population**.

Strategies to capitalize on the marketing and distribution of your new app

1. Research your market to determine where the majority of your senior population resides
2. Develop advertising vehicles that are most likely to reach seniors
3. Create marketing avenues that invite seniors to participate, learn and meet new people
4. Go where seniors go
5. Make it easy
6. Add personal service

Communication Chanel

- communication channel selection is related to Education, age, income, and living arrangements
- Elderly people who did not complete high school were less inclined to select any of the channels.
- Age was a factor, especially if the individual was over 80 years old.
- Individuals living alone were less likely to be reached through newspapers and organizations. Gender did not directly influence source selection

The Selection Of Communication Channels By The Elderly To Obtain Information R. Irwin Goodman 1992

Revenue stream

- Several possibilities
  - Selling the app
  - Licensing
  - Direct sell

Selling the app as a full package

- Sell Platform: *SellMyApp*, *Fliptopia*,…

	SellMyApp	Fliptopia
Registration fees	-	$29.-
Commission to the platform (over total selling price)	20%-30%	Max (15%, $150.-)

- Include: source code, illustration, social network account, certificates, etc…
- The value increase with the number of sell already performed, recommendations, …
- Possibility to negotiate the price with the buyer

Top-5 revenue models by popularity and earnings
Average revenue per app-month, for lower 95% of developers by earnings (n=1,473)
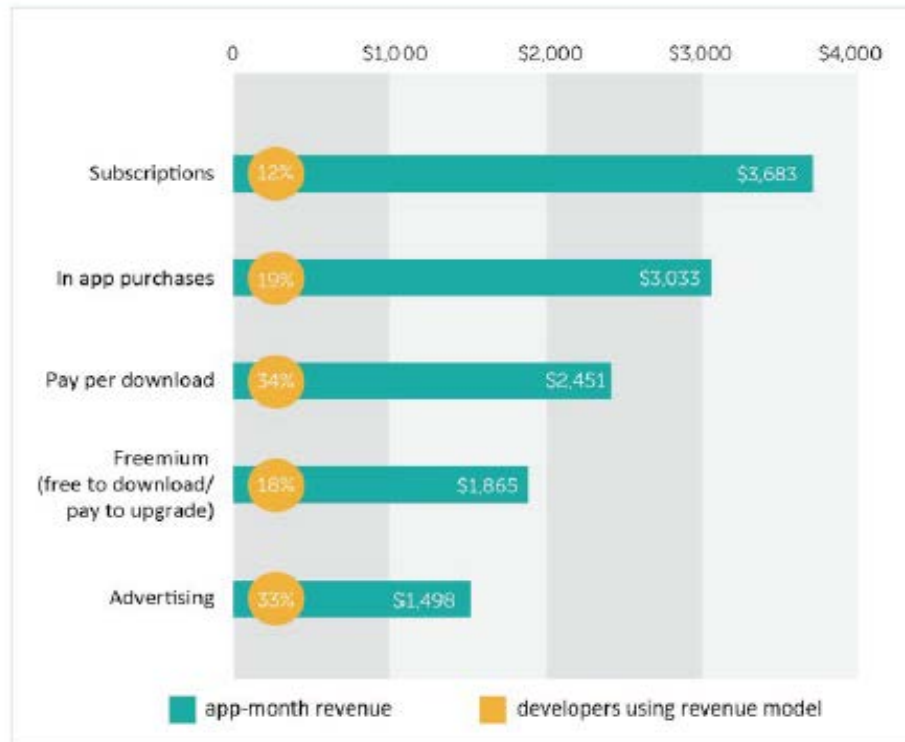
Revenue model	app-month revenue	developers using revenue model
Subscriptions	$3,683	12%
In app purchases	$3,033	19%
Pay per download	$2,451	34%
Freemium (free to download/ pay to upgrade)	$1,865	18%
Advertising	$1,498	33%

app-month revenue　　developers using revenue model

visionmobile　BlueVia

Revenue model use varies by platform

Percent of developers using revenue model, by primary platform (n=1,393)

	Android	BlackBerry OS	iOS	Java ME	Mobile Web	Qt	Windows Phone
Pay per download							
Freemium (free to download / pay-to-upgrade)							
Advertising							
In app purchases							
Work on commissioned apps							

Legend:
- over 50%
- 35% to 50%
- 25% to 35%
- 15% to 25%
- less than 15%

vision mobile   BlueVia

Direct sell: at what price

- Looking at similar app on the market

The costs

HOW MUCH DOES YOUR ORGANIZATION SPEND TO DEVELOP & DEPLOY ONE APP?

14%	21%	17%	19%	18%	11%
$50K or less	$50K - 100K	$100K - 200K	★ $200K - 500K	$500K - over 1M	I don't know

$270K:
Average cost per app
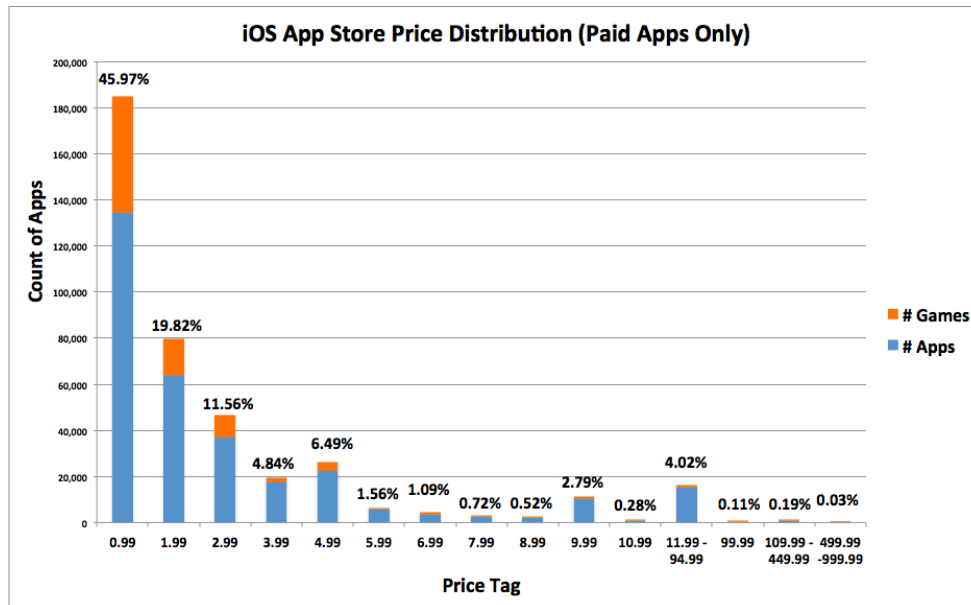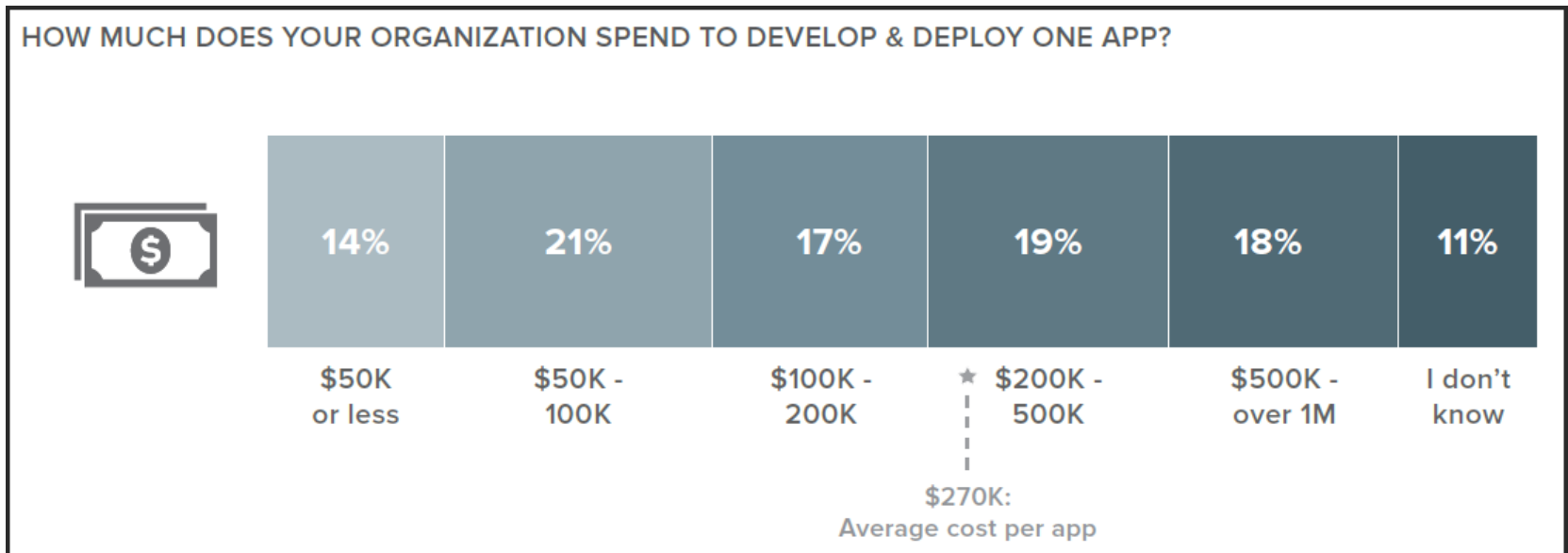
Hidden cost

The industry norm for software maintenance is about 15 to 20 percent of the original development costs. So if your app cost $100,000 to build, roundly estimate to pay about $20,000 per year to maintain the app.

- App developer cost
- App sell
- Update on new devices

Any Question…

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Vilans

Implementation & upscaling

..of the AAL-solution ROSETTA

datum **28th september**

door **Johan van der Leeuw**

Who is Vilans?

- Dutch National Expert center for the longterm care
- Supporting care organizations
- Partner in the AAL-projects:

- ROSETTA: 2009 – 2012
- Happy Walker: 2012 – 2015
- Palette V 2.0: running

- Mainly as workpackagemanager for WP trials & evaluation

AAL-project ROSETTA 2009 - 2012

- Targetgroup: at home living people with dementia during the whole dementia-process
- The whole system is adaptable to the stage of dementia & following the dementia process. Plus: on one framework

  - Mild dementia: Day Navigator -> giving structure in the day, active reminders
  - Moderate dementia: Early Detection System (EDS) -> lifestylemonitoring by a network of sensors & trendanalysis software
  - Severe dementia: Unattended Autonomous Surveillance (UAS)-> network of sensors & surveillance software for falldetection.

May 2012: and then?

- During and direct after the project two commercial partners were not interested anymore in commercialising the system

- But: the project was coordinated by TNO, a Dutch large governmental financed R & D organisation -> i.e. Fraunhofer in Germany and Austrian Institute for Technology (AIT).

- In 2012 TNO was asked by the Dutch ROSETTA-partner and careorganization Zorgpalet Baarn-Soest to develop a residential version of the UAS-surveillance part of ROSETTA -> for the nursing home setting, dementia care.

-> Project UAS – Kleinschalig GroepsWonen, financed by a Dutch regional government, 2012 - 2013

Start up: Dutch Domotics

- The next episode: the coordinator of AAL-project ROSETTA from TNO decides to start a company -> Dutch Domotics

- With as initial core product the UAS –residential version for nursings homes

- And NOT for instance the orginal UAS surveillance for at home living people with dementia.

- WHY?
UAS residential /nursing home version has a positive businesscase for the care organization. The UAS for home dwelling people has a positive SOCIAL businesscase, but is not positive for the care organization

Market introduction failed in first instance

- In 2014 market introduction failed: to limited market penetration in a closed Dutch Market for residential care technology

- Vilans had a meeting with the market leader in The Netherlands for nurse call systems & communications -> the Swiss/Swedish company ASCOM

- Message: the current systems of ASCOM used in the Dutch Nursing homes are not fitted (enough) for the residential dementiacare.

- Summer 2014: partnership ASCOM – Dutch Domotics

- From that moment onwards the UAS system residential version is sold

- 2014 -2015: a first larger implementation project is evaluated by Vilans with reporting & communication (together with a competitor).

UAS Residential: dementiacare nursinghomes

Figuur 2: Voorbeeld van sensorische bewaking derde generatie, het Unattended Autonomous Surveillance (UAS) systeem van Ascom/Dutch Domotics (2015)ᵏ

Smart Nursing Home

Receive alarms

Live overview of residents

Personal alarm settings

Technical notifications

Status UAS-residential 2016

- UAS residential together with ASCOM communications operational at more than 30 locations -> nursinghomes for residential dementia care

- Often a positive businesscase for the care organization -> based on more efficient nightcare

Back to 2014

- And what about the original technology developed for home dwelling people with dementia??

- Financed partly from the revenues of the UAS-residential sellings Dutch Domotics developed a **total new system** for home dwelling people with dementia -> the SENSARA-system

Link to ROSETTA

- The new development is only very faintly related to the original AAL-project ROSETTA;

- 1. Focus on lifestylemonitoring, the second part of ROSETTA for people with moderate dementia -> but the lifestyle monitoring itself is totally different.

- 2. Adaptable to the stage of dementia & following the dementia process -> surveillance can be added when the person with dementia develops severe dementia with for instance fallrisk

- 3. A conclusion from the ROSETTA-pilots in 2012 in NL, Belgium and Germany was NOT to use camera-technology for emergency situation detection. Therefore the whole system is only based on a sensor network.

SENSARA-system; characteristics

- In principle sold to the informal caregiver -> plug & play

- An smartphone app for the informal carer(s)

- At the moment when the professional carer(s) are entering the situation -> the so-called ''case manager user interface''.

Achievements

Market Launch

2015 — Partnership GreenPeak and launch Independent Living. Trials together with Virgin Media, Unity Media, Telekom Italia. Ongoing trials with multiple large telecom operators.

2014 — Commercial launch Nursing Homes with partnership Ascom (1,2 m revenue)

2013 — Proof of concept Nursing Homes

2012–2013 — Market research and company start

Research & Development

2012-2013 — Phase 4: Nursing Home pilot Zorgpalet Baarn-Soest

2009-2010 — Phase 3: Dementia project Rosetta (AAL): Netherlands, Germany & Belgium

2006-2009 — Phase 2: Independent Living pilot Zorgpalet Baarn-Soest

2001-2003 — Phase 1: Short pilot (3 weeks)

Our Technologies & Customer Segments
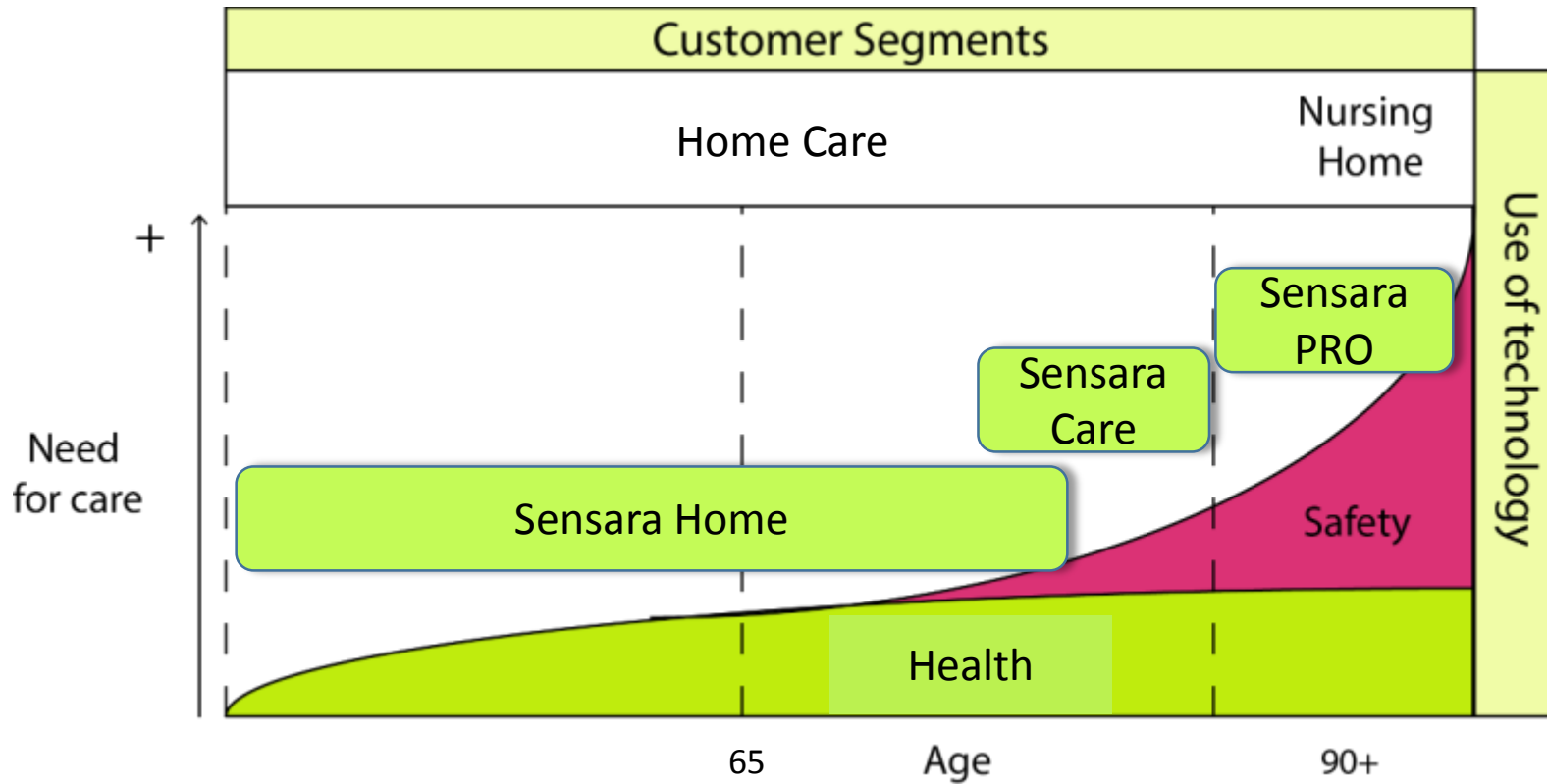
Sensara: monitoring app for informal carer

Notifications

Sensara Home
Home Care
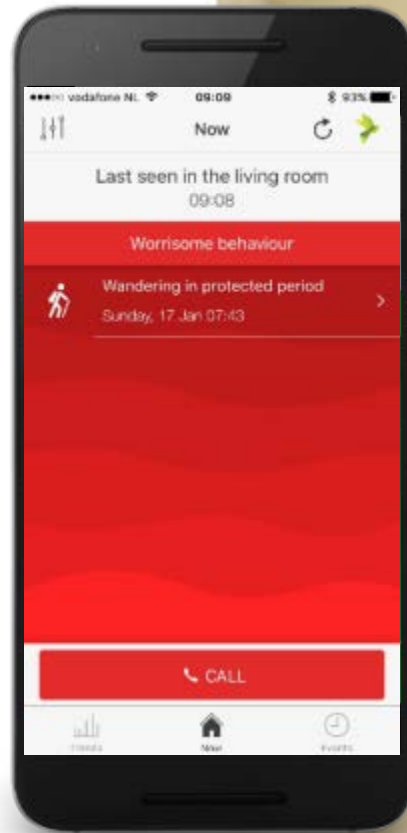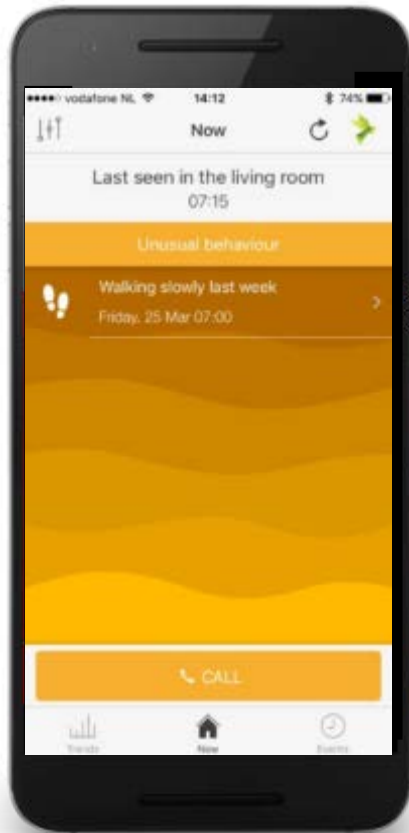
Know that your loved ones are doing well.
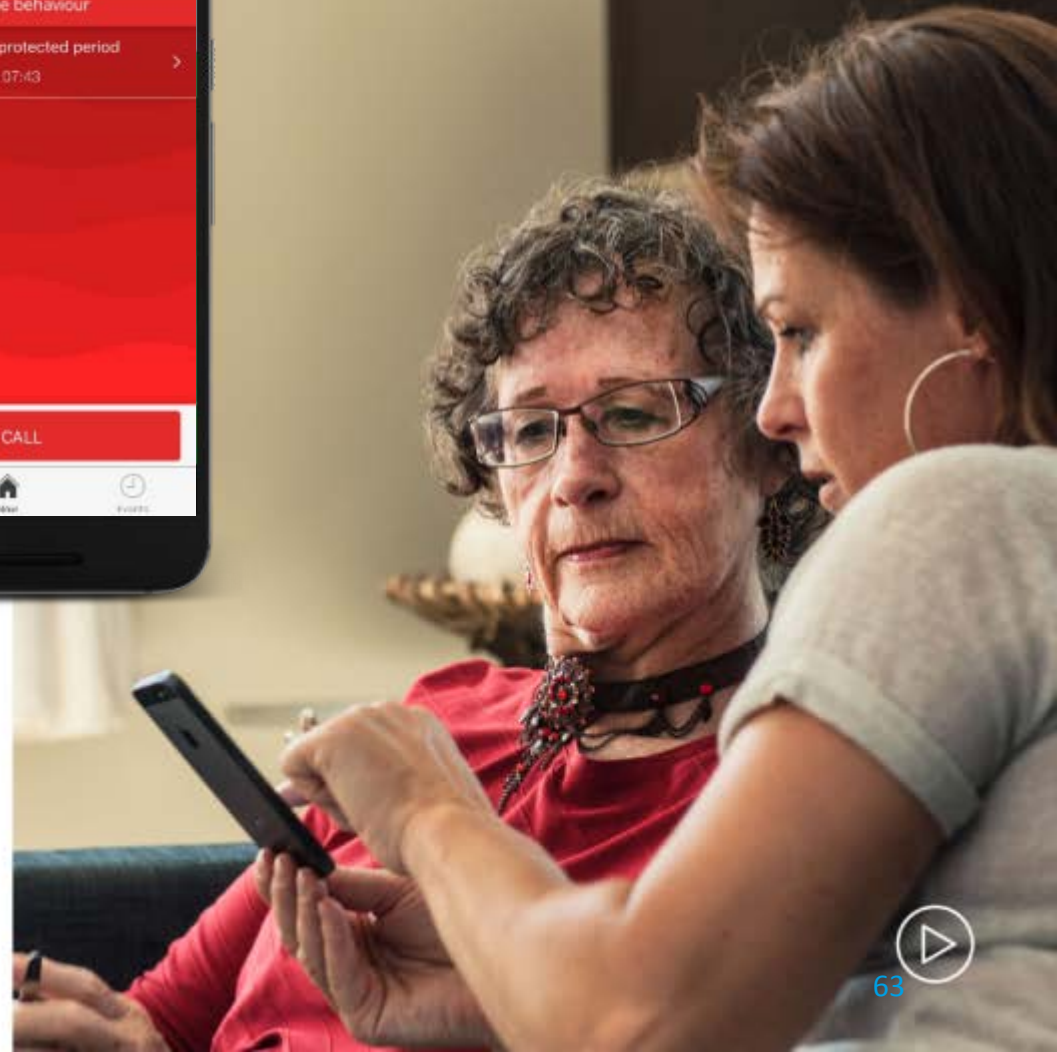
Professional Home Care

SENSARA-system; status 2016

- In The Netherlands (and abroad): not sold in great numbers to informal carers -> unknown yet

- In limited numbers sold to care organizations in mainly pilot settings

-> Business-to business, business-to-consumer: selling the system to a care organization, offering the system to their care clients

-> Still the same problem as what was the base for the strategic decision in 2012: first development for the residential care, because the businesscase for the care organization is then often possitive. But the businesscase for the care organization is NOT possitive in case of the Sensara systeem for home dwelling people with dementia. Meaning: a lot of hesitation.

Businesscase for lifestyle monitoring

- The social businesscase is positive but the BC for the care organization not. Why?

- 5 quantitative revenues in the social BC and 2 qualitative revenues

- BC, when the system is sold by a care organization -> 1 system operational during 7 years (lifespan of the system) at 2 clients

Revenues lifestylemonitoring 1

- 1. Postponement of nursing home admission -> indirect evidence

-> in NL (2 clients, during 7 years): **€ 6213,-**

- **2.** Anticipation short-term crisissituation -> early warning for for instance urinary tract infection

-> in NL **€ 2860,-**

- **3.** Anticipation on crisissituations originating from the dementia-process -> for instance the disturbed day-night rhythm
-> in NL **€ 10.000,-**

Revenue 3
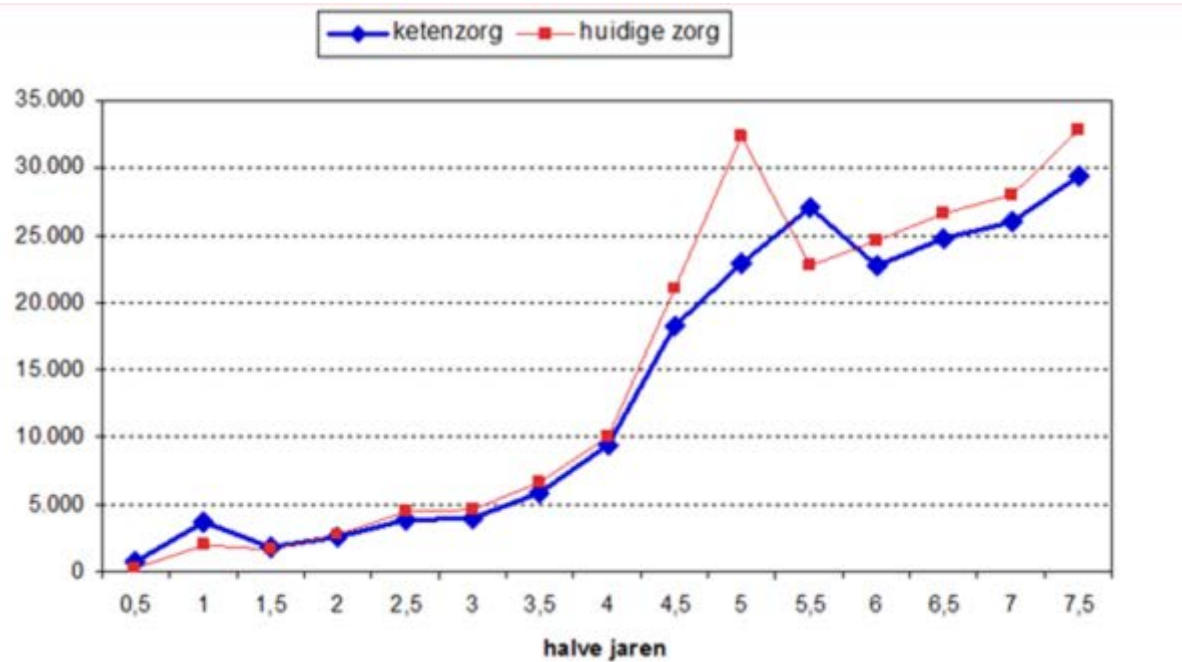
Revenues Lifestylemonitoring 2

- 4. More efficient communication informal carer – formal carer
NL: **€ 1050,-**

- 5. Substitution night care -> using lifestyle monitoring instead of regular home visits in the night

  NL: **€ 1300,-**

Total: € 21.423,- per system

Two qualitative revenues, based on evaluation studies:

- Lesser stress for the informal carer and improved quality of life of the informal carer

- A more balanced workload in the informal care network

Who benefits from the revenues?

In the Dutch situation:

- Revenue 1: the regional care office
- Revenues 2, 3 and 5: the care insurance company who has the person with dementia as client
- Only revenue 4 – limited to € 1050 during 7 years: the involved care organization.

- The 2 qualitative revenues: the informal carer(s)

How to solve this issue?

- A reimbursement rate: the care insurance company & the care office

compensates the care organization for their investments

-> in NL first developments on this point:

    - July 2016: general agreement between the Dutch care organizations and the care insurance companies on financing 'home care technologies'' including life style monitoring.

Main principles: SHARED SAVINGS. & longterm agreements

Initial investments by the care insurance company & return on investment at the end of the longterm agreement.

Business-to-consumer, consumer-to-business

But enough??

Another strategic path is business-to-consumer, consumer-to-business:

- The system is not sold to the care organization but to the informal carer(s)

- When the professional care gets a role during the dementia process, the care organization can buy software to hook on the system originally sold by the informal carer.

Questions & remarks?

STOPandGO

Sustainable Technology for Older People – Get Organised

Workshop session 21 AAL Forum – Implementation & upscaling of AAL-solutions in the care for older people
SOFIA MORENO

PPI Pilot project funded by the European Commission

What is the problem ?

Public Services have to evolve to afford the increasing burden in demand with limited budgets. Public Administrations need to buy innovative services
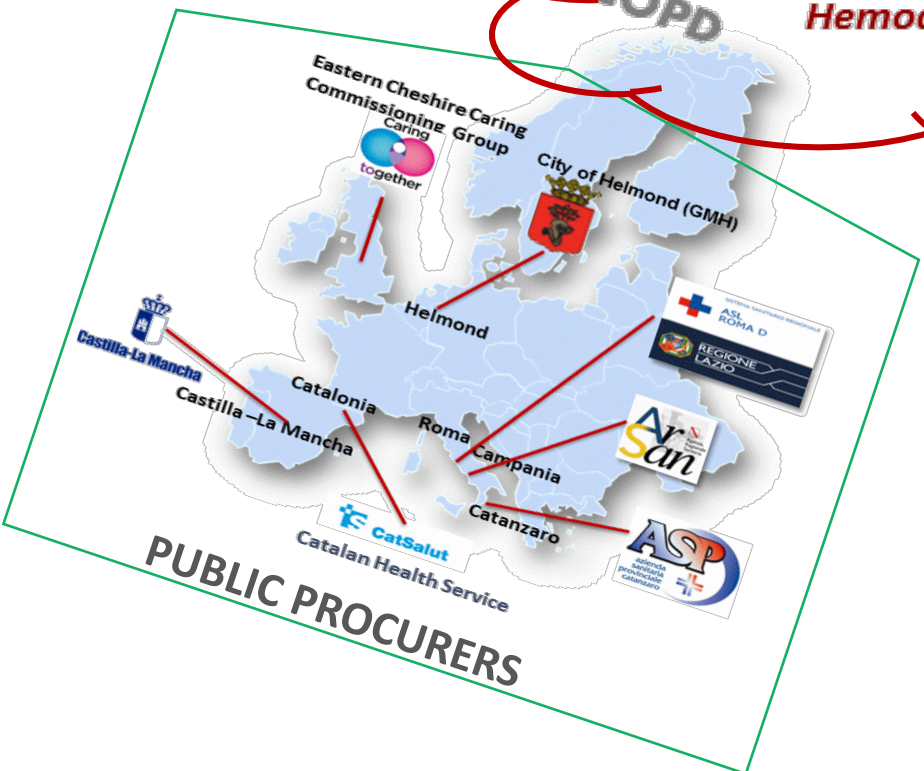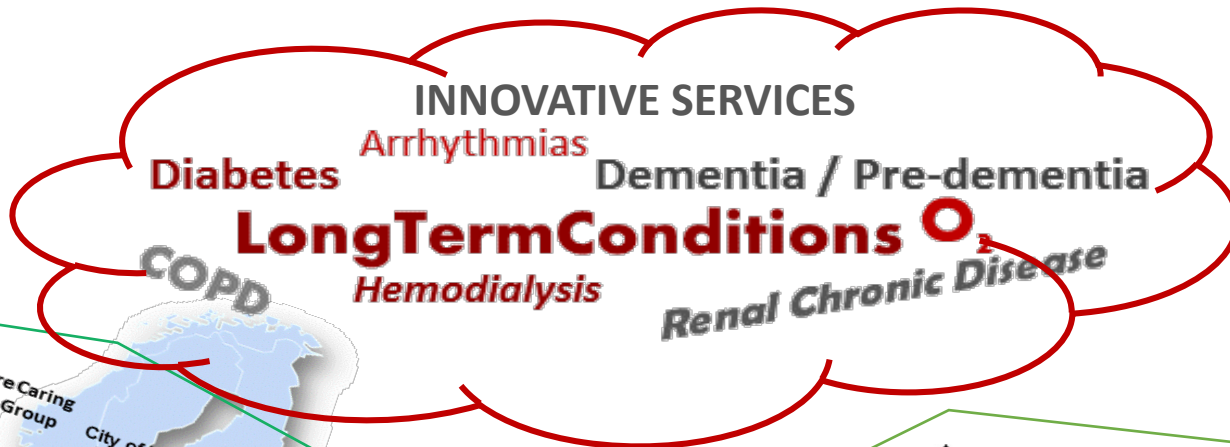
What is **feasible**????? What can the market offers? Who knows that?
Apples & Oranges, how to compare the options???

Procurement rules & legislations not designed to assume risks!
How to buy innovation???

Who is involved?

> 17 M€ in 7 innovative local procurements across Europe
(20% of procurement costs funded by)

INNOVATIVE SERVICES

Arrhythmias

Diabetes

Dementia / Pre-dementia

LongTermConditions O_2

COPD

Hemodialysis

Renal Chronic Disease

PUBLIC PROCURERS

Eastern Cheshire Caring Commissioning Group

Caring together

City of Helmond (GMH)

Castilla-La Mancha

Helmond

ASL ROMA D

REGIONE LAZIO

Catalonia

Roma

Castilla –La Mancha

Campania

ArSan

Catanzaro

CatSalut

Catalan Health Service

ASP
Azienda Sanitaria Provinciale Catanzaro

KNOWLEDGE PARNERS

Smart Homes

nwc
NORTH WEST COAST
ACADEMIC HEALTH
SCIENCE NETWORK

iSC
Instituto de Salud Carlos III

Federsanità Servizi

tsa

Knowledge Transfer Network

If you want to know about the solution:

Everything you wanted to know about Public Procurement of Innovative Services for Elderly People but were afraid to ask! Preliminary lessons learnt from the STOPandGO project

16:00-17:30	Workshop 25	Workshop 26	Workshop 27	Workshop 28	Workshop 29	Workshop 30
	Your apps and services on the open TAVLA platform *Chair: Martin Petzold* Speakers: Javier Ganzarain	Merging technical development and an ageing workforce *Chair: Sibylle Olbert-Bock* Speakers: Jacqueline Lemm	Public procurement of AAL solutions – Preliminary lessons learnt from the STOPandGO project *Chair: Sofia Moreno Perez* Speakers: *Ilse Bierhoff*	From recognising motion to emotion awareness - Perspectives for future AAL solutions *Chair: Oliver Korn* Speakers: Gerald Bieber	Domotics and robotics for Alzheimer's disease *Chair: Antonio, Greco* Speakers: Daniele Sancarlo	Improving autonomy with robotics *Chair: Einar Nielsen* Speakers: *Michael Früh*

PPI … good lever for implementation and scaling-up!!

- Services implemented under a PPI scheme should be market ready. Industrialization stages already implemented. Validation through pilots already took place also.

- Players are not those typically involved in R&D but the ones on real procurement. That implies a long decision making chain … including political levels

# PPI … good lever for implementation and scaling-up!!

- The funding scheme (low in comparison with conventional R&D) and the complexity of the process can only motivate the involvement of real interested players. The goal is not the funding but the results!!

- The innovation is funded for one year provision but the service is designed to stay.

- The PPI addresses the risk related with the service definition (market research, indicators) and implementation. Pave the way for scaling-up!

EXAMPLES

FGS Hospital de la Santa Creu i Sant Pau - *Spain*
procurement process at a glance

Global treatment of Sant Pau Hospital patients at risk of sudden death needing Automatic implantable debrifrillator (or Cardiac resynchronization) therapy, including implantation, remote control follow-up and treatment of device complications

- Value-based healthcare tender / Risk-sharing/
- Awarded on 17th May - , Companies' consortia building pending
- 150 pacients per year + 500 patients already implanted and followed in our center
- 10.394.595,12 € in total - 4 years duration
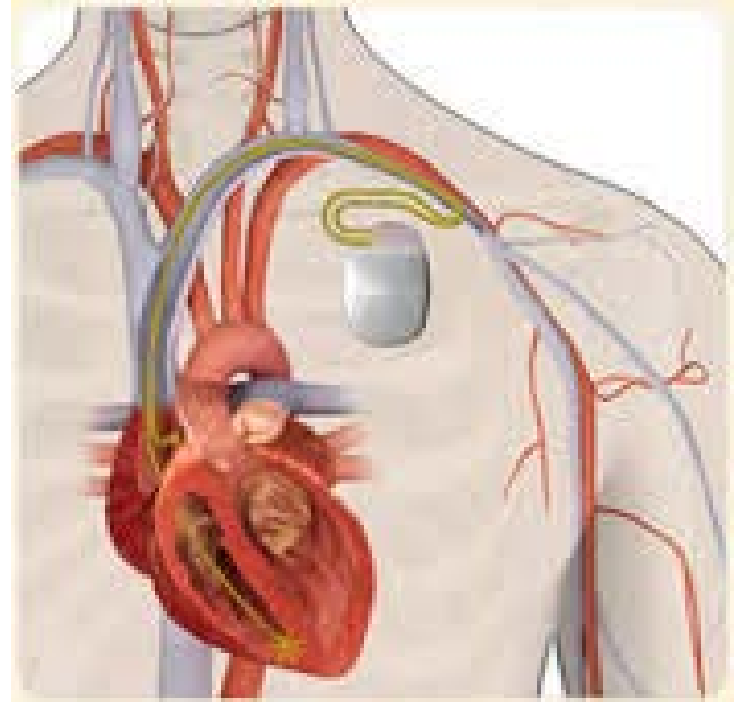
Expensive devices, need for careful follow-up to obtain good results, need for battery exchange when battery depletion, 10% of lead malfunction at 10 years

Sant Pau

Liverpool City Council -England
Help to live at home

- To recommission personal care services, community support and day opportunities for Older people across the City. The Aim is to bring all of these services together under one contractual arrangement.

- We expect to support 2700 service users weekly, total budget for Personal Care Services for 16/17 is £15.992m and 17/18 £15,312m

- More people, more complex needs, less budget, less carers

- *We have tried to encourage the care providers to innovate and deliver the service with technology but have not been successful as we could not afford the technology cost.*

THANKS

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What's another problem?

- If you thought getting TECS to Public Procurers was hard work … what about the Public?

Innovation?? I just need stuff that'll help me and my family. I don't qualify for public support, so am going to have to help myself!

What is there?

Where can I get it?

Is it affordable?

If only I could get it up the High Street …

At last!

- **Over 30 TECS offers to be included**

- **a dedicated section of the**

- **January 2017 Argos catalogue!**

- **As High Street retail as it gets in the UK.**

- **>7,000 outlets; massive online presence.**

- **TECS but sports, kids and tech departments will list, too.**

To make it last …

- **TECS vendors need to be:**

  - **prepared to cope with volume**
  - **savvy to retail customer service**
  - **offer an attractive margin**

These guys will follow …

- **Dixons Carphone Warehouse**

- **Boots – maybe …**

- **we are winning!**

Panel Statement 1

"Young adults should invest in AAL technologies & services to support their parents and future selves"

Panel Statement 2

"We are delaying the implementation and upscaling of AAL solutions"

Panel Statement 3

"The current AAL market is a technology push"