

CONFERENCE USERS & PRODUCERS: DEMANDS & USE

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The Certification-D team would like to thank the speakers for their participation and for making the presentations available for this report. The rights of the presentations and duties (e.g. image rights) are with the respective speakers.

Welcome note

Katrin Krah (ARCK)

As Lead partner of this project I want to welcome you to our online conference „Users & producers. Demands & Use” for our project Certification-D.

Hopefully, you and your loved ones are well, and all are healthy.

So, when we started this project, we were convinced of the positive impact this project will have. Now, after some time has passed, this impression has only been confirmed.

Technical support is an important issue and will become more and more important in the future. It opens up so many possibilities and chances to lead a self-determined and independent life in old age.

We are happy about the popularity of this project and look back on the successful collaboration with great partners from the NWE region. We are also looking forward to the further tasks that lie ahead of us.

Of course, the current situation plays an important role. We would have gladly liked to welcome all participants personally today.

Corona will present us all with new challenges. Nevertheless, we are going to accept them. With a little organization and flexibility, we can also solve these difficulties.

Nevertheless, we hope to be able to welcome everyone personally again soon.

We would like to thank all those who have contributed and made this online conference possible. We would also like to thank the speakers who fill the conference with life.

Daniel Zerweck (ARCK)

																			
<h1>PROJECT CERTIFICATION-D</h1> <p>Certifying assistive technologies for people with dementia living at home</p>																			
Dr. Daniel Zerweck, ARCK										01.10.2020 Krefeld									

1. The project
2. The progress
3. The perspective

	<p>Project Certification-D</p> <p>01.10.2020</p>	<p><i>Alexianer</i> ALEXIANER KREFELD GMBH KRANKENHAUS MARIA-HILF Akademisches Lehrkrankenhaus der Heinrich-Heine-Universität Düsseldorf</p> <p>1</p>
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The project

1. Observation/Idea/survey
2. Partnership
3. Interreg NWE Vb

	Project Certification-D	01.10.2020	Alexianer ALEXIANER KREFELD GMBH KRANKENHAUS MARIA-HILF Akademisches Lehrkrankenhaus der Heinrich-Heine-Universität Düsseldorf	2
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Idea

- Observation
- Products often do not meet our expectations
- PwD/caregivers do not know the products
- PwD/caregivers do not buy the products

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Certification-D

- runs from Sep-2019 to Mar-2023
- 11 project partners from Belgium, France, Germany, Netherlands, United Kingdom
- LEAD PARTNER ARCK Alexian Research Center Krefeld of the Alexian Krefeld GmbH
- 2 sub partners
 - ActionSense Ltd (UK, Ulster)
 - Fontys Hogeschool (NL, Eindhoven)
- 6 associated partners
 - Care Inn Ltd and Care Forum Wales (UK, Ruislip)
 - Centre Hospitalier Universitaire d'Angers (FR, Angers)
 - EAGP European Association of Geriatric Psychiatry (DE, Krefeld)
 - HSCP Clackmannanshire and Stirling Health and Social Care Partnership (UK, Stirling)
 - LYIT CoLab, Letterkenny Institute of Technology (IE, County Donegal)
 - RBS Center fir Altersfroen asbl (LU, Itzig)



Interreg North-West Europe Certification-D	Project Certification-D	01.10.2020	Alexianer ALEXIANER KREFELD GMBH KRANKENHAUS MARIA-HILF Akademisches Lehrkrankenhaus der Heinrich-Heine-Universität Düsseldorf	4
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Interreg NWE Vb



- 8 member states: Belgium, Germany, France, Ireland, Luxembourg, Netherlands, United Kingdom, Suisse
- THANKS for
 - 60%-funding which is about 2.3 mio € ERDF-funding
 - (total project budget is about 3.8 mio €)
 - THANKS for the support by the
 - The officers from the Joint secretariat
 - And the National Contact Points, especially from Germany, Luxembourg and the Netherlands

Interreg North-West Europe Certification-D	Project Certification-D	01.10.2020	Alexianer ALEXIANER KREFELD GMBH KRANKENHAUS MARIA-HILF Akademisches Lehrkrankenhaus der Heinrich-Heine-Universität Düsseldorf	5
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The progress: especially on Demands & Use – the view from inside

1. Four LLs
 1. are set-up
 2. This includes adapting our existing LLs and dealing with Ethical issues running Dementia LLs
 3. The LLs will be presented in short videos, which will be also found in our YouTube channel later
2. Three catalogues of functional and non-functional requirements based on certain product groups have been analysed
3. A framework for involving PwD for analysis within LLs was created

	Project Certification-D	01.10.2020	 ALEXIANER KREFELD GMBH KRANKENHAUS MARIA-HILF Akademisches Lehrkrankenhaus der Heinrich-Heine-Universität Düsseldorf	6
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The perspective: also raised by the supportive keynote and lectures in the afternoon

1. In our second Work package we deal with “Product & service optimization”: which means for the next two years
 1. that we will develop “Dementia Friendly Guidelines”
 2. that we will work on Design Support for SMEs AND
 3. that we will work on the further integration of products and services
2. Voucher scheme
 1. We will offer vouchers to evaluate products
 2. Currently we start preparing the call for SMEs to participate
 3. We will have to waves: one in 2021 AND one in 2022
3. In parallel we are working on the Certification process

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Certification Process

Marcus Sauer (GGT)

															
	<h1>Certification Process</h1>														
	Marcus Sauer											1st Oct. 2020			

Certification Process

- credible
- neutral
- by an independent body
- comprehensible
- based on transparent criteria

	Certification process	2020-10-01		1
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Step 1

- Self-declaration by the manufacturer / producer

Tailored catalog of criteria -> evaluate the degree of fulfillment

Catalog should not be too extensive (due to acceptance reasons).
Catalog must be adjusted carefully!

	Certification process	2020-10-01		3
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Step 1

- Self-declaration by the manufacturer / producer

Verification of the self-declaration by the certification body.
Possibly clarification together with the manufacturer / producer.

	Certification process	2020-10-01		4
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Step 2

- Usability test in the Living Lab

Context of use: "Who uses the product when, where and with whom?"

-> to be described by the manufacturer / producer

-> Who tests the product? -> PwD?

-> PwD with help?

-> nursing staff?

-> caregivers?

-> Definition of the test program by the certification body

	Certification process	2020-10-01		5
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Step 3

- Awarding a certification

Final check of all data and results

Report

	Certification process	2020-10-01		8
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Use of the mark

- What is important for the companies:
 - to use the mark for marketing and communication purposes
 - getting better access to the markets because of the recommendation
 - advise and recommendation by public organisations
 - easier public funding
 - getting significant, reliable and objective end-user feedback and opinions

	Certification process	2020-10-01	 GGT DEUTSCHE GESELLSCHAFT FÜR GERONTECHNIK	9
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The value of designing with people with dementia

Niels Hendriks (LUCA)

The value of designing with people with dementia

Niels Hendriks
Andrea Wilkinson
Lieke Lenaerts
Rita Maldonado Branco

LUCA
SCHOOL
OF
ARTS

Interreg
North-West Europe
CERTIFICATION-D

KU LEUVEN

Who are we?



Design & Dementia Why

Why design for for people with dementia?



Design & Dementia Why



Functional design

Wireless Care Alarm Kit with Lai

★★★★★ (29 Reviews)

- ✓ Alerts you when a person gets out of bed with a vibration and
- ✓ Full sensor mat, transmitter and pager system – everything
- ✓ Ideal for monitoring elderly patients or family members prone
- ✓ Can be used on the bed or on the floor

Availability: ✓ In stock now

Design & Dementia Why



CRDL – attachment



Active Minds – inclusion



Music Memory Box – identity

We need to reflect on how to design for psychological needs

Design & Dementia Why



Why design **with** people with dementia?

...is it relevant?

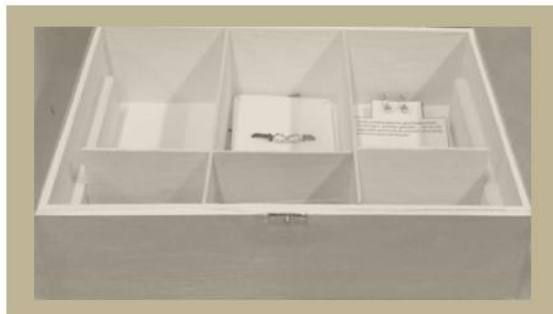
For people with dementia

For designers

For society

relevance for society





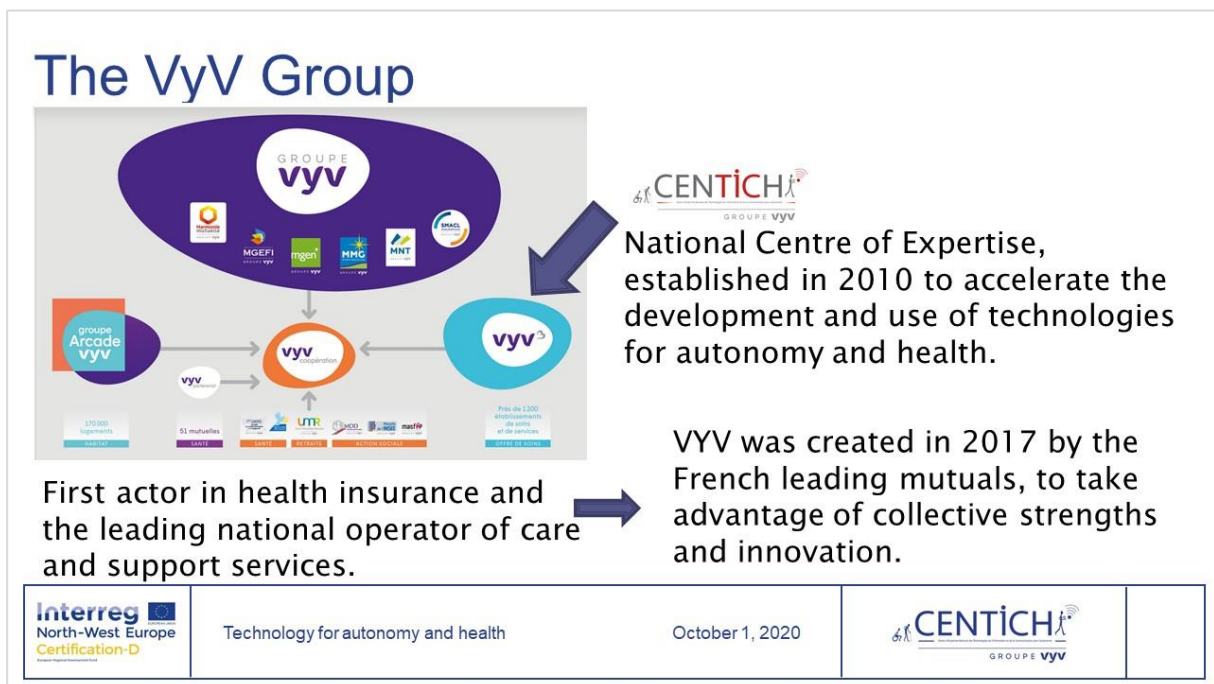
niels.hendriks@luca-arts.be
www.dementialabresearch.com

LUCA
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Interreg 
North-West Europe
CERTIFICATION-D
European Regional Development Fund

KU LEUVEN

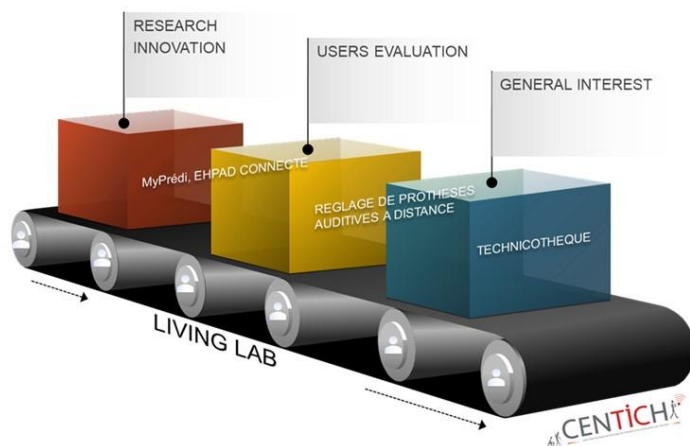
Jawad Hajjam (CENTICH)...

[illegible]

The VyV Group

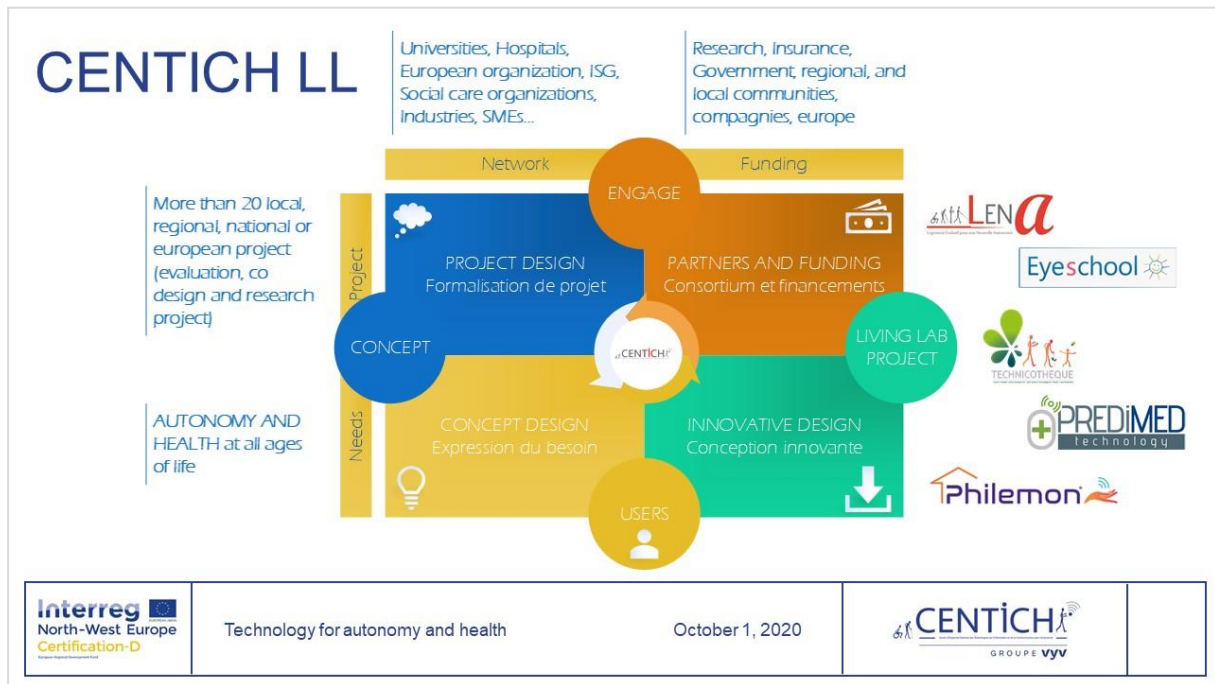


CENTICH LL



CENTICH is a private, non-profit organization, It was to promote the technologies for autonomy and health in France.

Its bring together academics, manufacturers, SMEs as well as user associations to promote ICT as a way to increase autonomy among elderly and disabled people.



Stakeholder inclusion for a holistic approach

A Living Lab is a multi-stakeholder organization set-up to carry out innovation projects that follow the principles of open and user innovation and focus on real-life experimentation.

Dimitri Schuurman, imec.livinglab

	Technology for autonomy and health	October 1, 2020	
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Stakeholder inclusion for a holistic approach

Stakeholders are considered as co-creators who do not only serve as informants but also have the power to shape outcomes by contributing with their knowledge and expertise.

Despite its importance, stakeholder engagement often remains a practical challenge as well, as only little research has been conducted on the actual stakeholder participation stages.

	Technology for autonomy and health	October 1, 2020		
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Stakeholder inclusion for a holistic approach

OBJECTIVE

The aim of the Living Lab is to effectively involve stakeholders, through engaging in participatory methodology that facilitates co-creation.

Stakeholder participation will be examined and analysed by investigating the phases of design, implementation and evaluation processes.

The assumption is that greater involvement will lead to more effective results. Stakeholder engagement must be able to be done on different aspects as citizen, patient, student, business and policy-maker angles.

	Technology for autonomy and health	October 1, 2020		
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Stakeholder inclusion for a holistic approach

EXPECTED OUTCOMES

The primary goal is to achieve early and effective stakeholder participation in the development of the process.

The outcomes of the Stakeholder involvement will be aimed to set out factual information and will conclude with recommendations arising from the work.

	Technology for autonomy and health	October 1, 2020		
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Stakeholder inclusion for a holistic approach

THE EXAMPLE OF THE QUADRUPLE HELIX STAKHOLDER ENGAGEMENT

Quadruple helix stakeholder engagement is a central factor in Living Labs. It brings together stakeholders from public institutions (at the level of cities, regions & local, regional, national & European policy), private organizations (start-ups, SMEs, corporations), as well as academia (researchers, universities, research organizations) and citizens. This leads to the inclusion of representatives from each sector in innovation processes, creating results from which all involved stakeholders can benefit.

Ines Vaithinen (ENoLL) and Koen Vervoort (imec)

	Technology for autonomy and health	October 1, 2020		
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Stakeholder inclusion for a holistic approach

THE EXAMPLE OF THE QUADRUPLE HELIX STAKHOLDER ENGAGEMENT

Facilitating exchanges and collaborations between diverse group of stakeholders is important for creating holistic solutions that serve all of them.

For example, in an autonomy and health-related Living Lab project focusing on seniors with lost autonomy or chronic disease, their caregivers, occupational therapist, families and doctor should be included as well.

	Technology for autonomy and health	October 1, 2020	
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Stakeholder inclusion for a holistic approach

INTELLIGENT BUILDING FOR RETIREMENT HOME IN ANGER



	Technology for autonomy and health	October 1, 2020	
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Cooperation with SME: from idea to market

Rens Brankaert (TU Eindhoven)

																	
	<h1>Cooperation with SME:</h1> <h2>from idea to market</h2> <p>dr. Rens Brankaert</p>																
	NL Consortium												1-10-2020				





AGING GONE AWRY

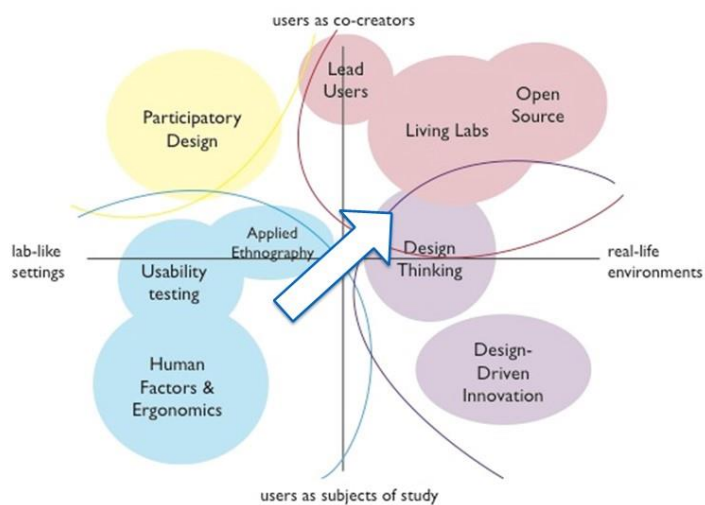
Why the pharmaceutical industry is giving up the search for an Alzheimer's cure





Supporting Companies

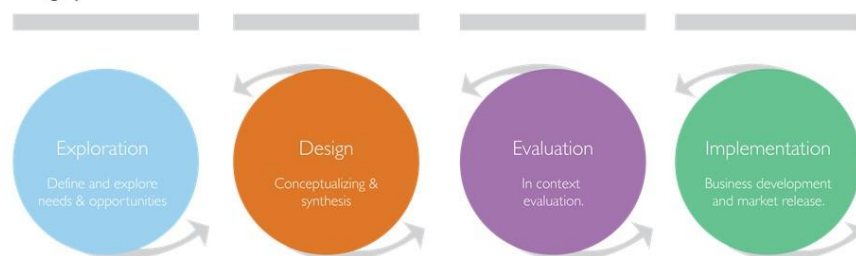
- Support research & development
- Contact with end-user segment
- Support improving product offering
- Keep up to date with state of the art research
- Provide an opportunity for different markets



Collaborate in Living Labs

- Real-life environment of the product
- Involve users as co-creators
- Aid in providing a person-centered perspective

Design process



Activities

Interactive experience flow, personas & focus groups Ideation methods, prototyping & co-creation In context home sessions & stakeholder co-reflection Scaling up, venturing & validation of concept

(Brankaert 2016)

Case example:
Collaborating with all stakeholders, the AmbientEcho









"Ik heb haar nog nooit zo opgewekt gezien. Ze praat ineens heel duidelijk over haar verleden, dat doet ze normaal nooit. Prachtig om te zien!"

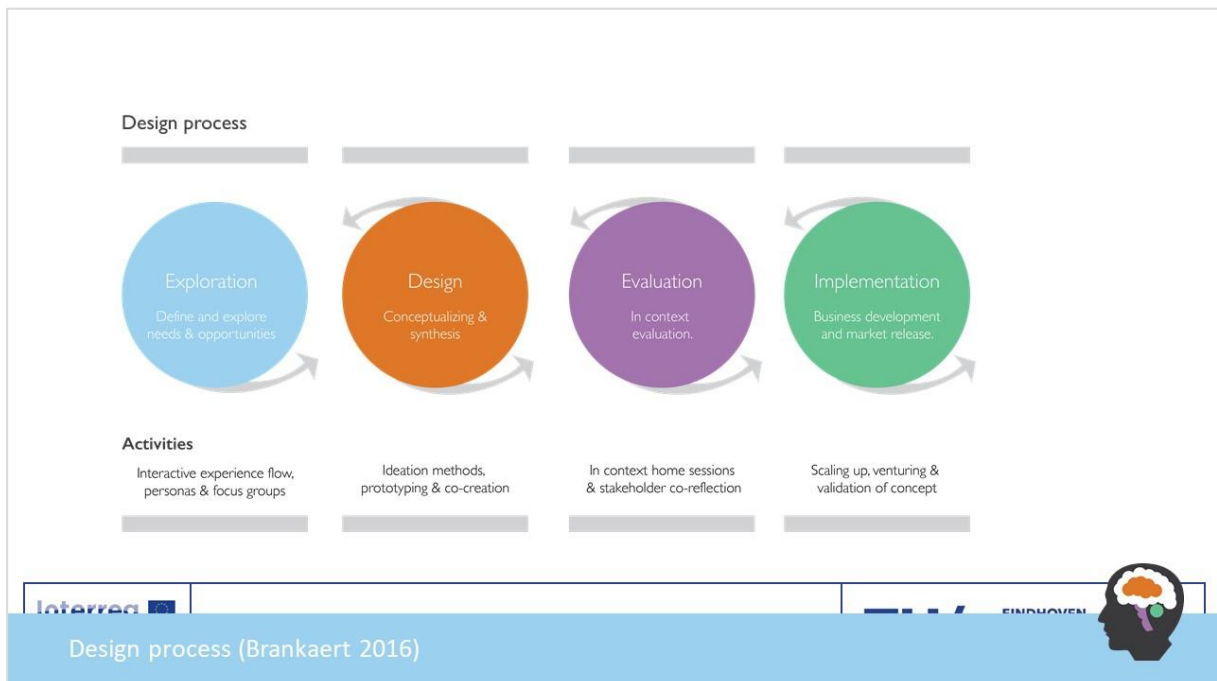
zorgmedewerker Thuvine

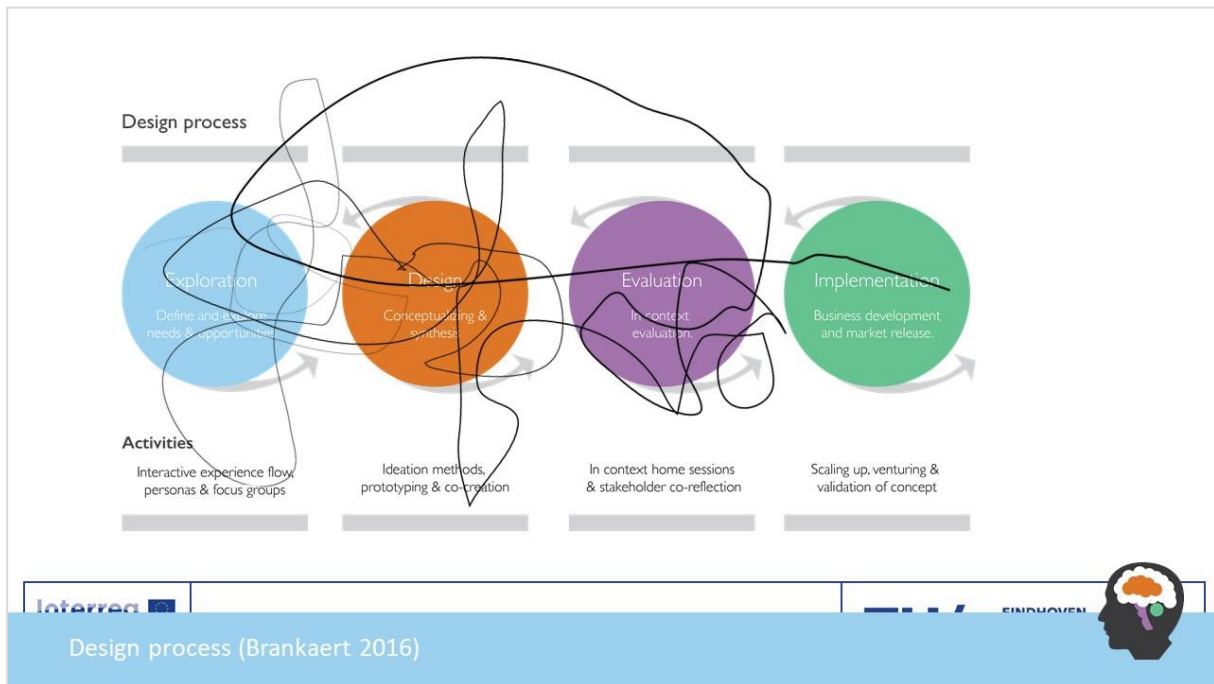
Myrte Thoolen, Rens Brankaert, and Yuan Lu. 2020. AmbientEcho: Exploring Interactive Media Experiences in the Context of Residential Dementia Care. In Proceedings of the 2020 ACM Designing Interactive Systems Conference (DIS '20).

Warm Technology (IJsselsteijn et al. 2020)

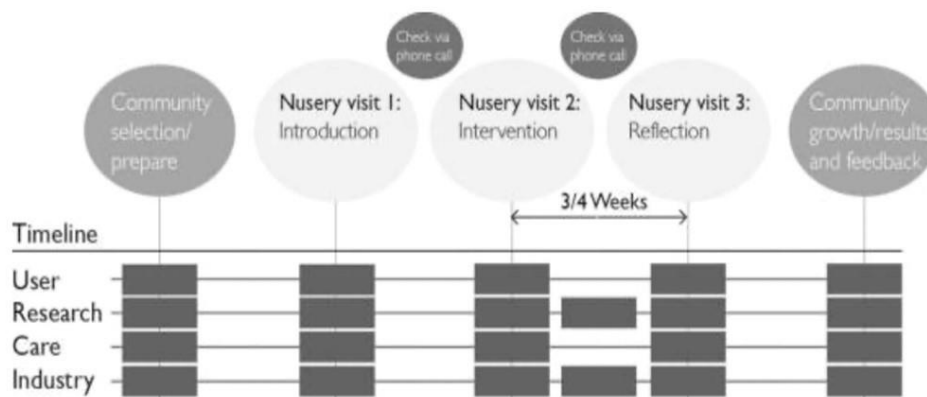
- 1) Focused on potential, building further on skills and experiences individuals have,
- 2) Contributes to both social and emotional needs
- 3) Is user friendly and personally empowering
- 4) Is aesthetically pleasing and non-stigmatizing
- 5) Supports the richness of human sensory and motor skills and personal context.







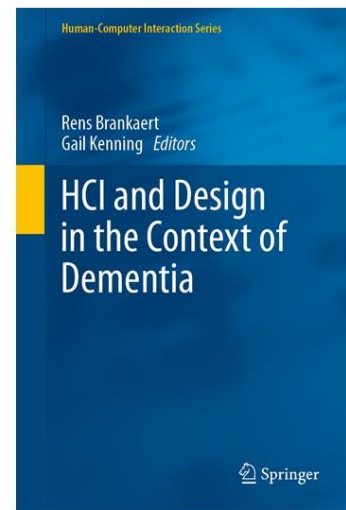
WP 1.4: Living Lab Protocol



www.DementiaAndTechnology.com

Further reading

- HCI and Design in the context of Dementia
- (Brankaert & Kenning, 2020)



Brankaert R.; Kenning, G.(Ed.) (2020). HCI and Design in the Context of Dementia (Springer HCI series)

Houben M., Brankaert R., Bakker S., Kenning G., Bongers I., Eggen B. (2020)The Role of Everyday Sounds in Advanced Dementia Care (CHI2020, Best paper award)

Brankaert, R. & den Ouden, P. H. (2017). The design-driven living lab: a new approach to exploring solutions to complex societal challenges. Technology Innovation Management Review, 7(1), 44-51.

Brankaert, R. (2016). Design for dementia : a design-driven living lab approach to involve people with dementia and their context Eindhoven: Technische Universiteit Eindhoven

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R.Brankaert@fontys.nl



Living Labs as exploration and working method

Liselore Snaphaan (Tilburg University Tranzo / mental health care organisation GGz Eindhoven)



Living Labs as exploration and working method

Dr. ing. Liselore Snaphaan
Senior researcher
Tilburg University Tranzo / mental health care organisation GGz Eindhoven, The Netherlands

Eindhoven, October 2020

TILBURG UNIVERSITY

GGzE

Tranzo

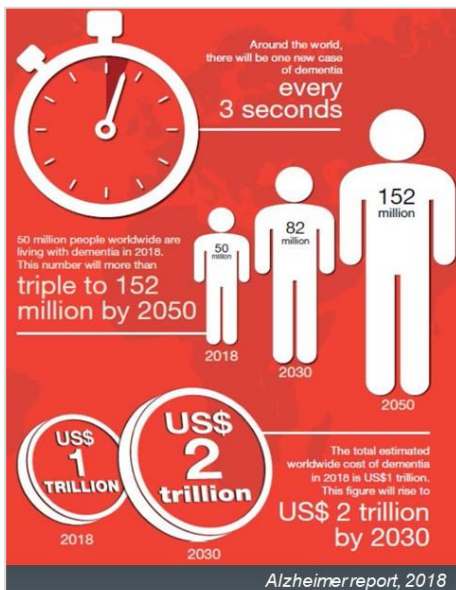
- Challenges in dementia care
- Multi stakeholder approach
- User Centered Design
- Case study
- Lessons learned

Overview

TILBURG UNIVERSITY

GGzE

Tranzo



FACTS

- Sharp increase of people with dementia
- Ageing in place will be stimulated
- Burden informal caregivers
- Increase availability in assistive health innovations

Challenges in dementia care



Solving the gap between innovations and its use



User-centered design is an iterative process, where the goal is the development of usable products, services or systems, achieved through involvement of potential users of a product, service or system in system design (Karat, 1996).

User Centered Design

1. User focus
2. Active user participation
3. Early prototyping
4. Continuous iteration
5. Multidisciplinary design teams
6. Integrated design

Key principles of UCD

Gulliksen et al., 2003



Multimodal "theratainment" solution

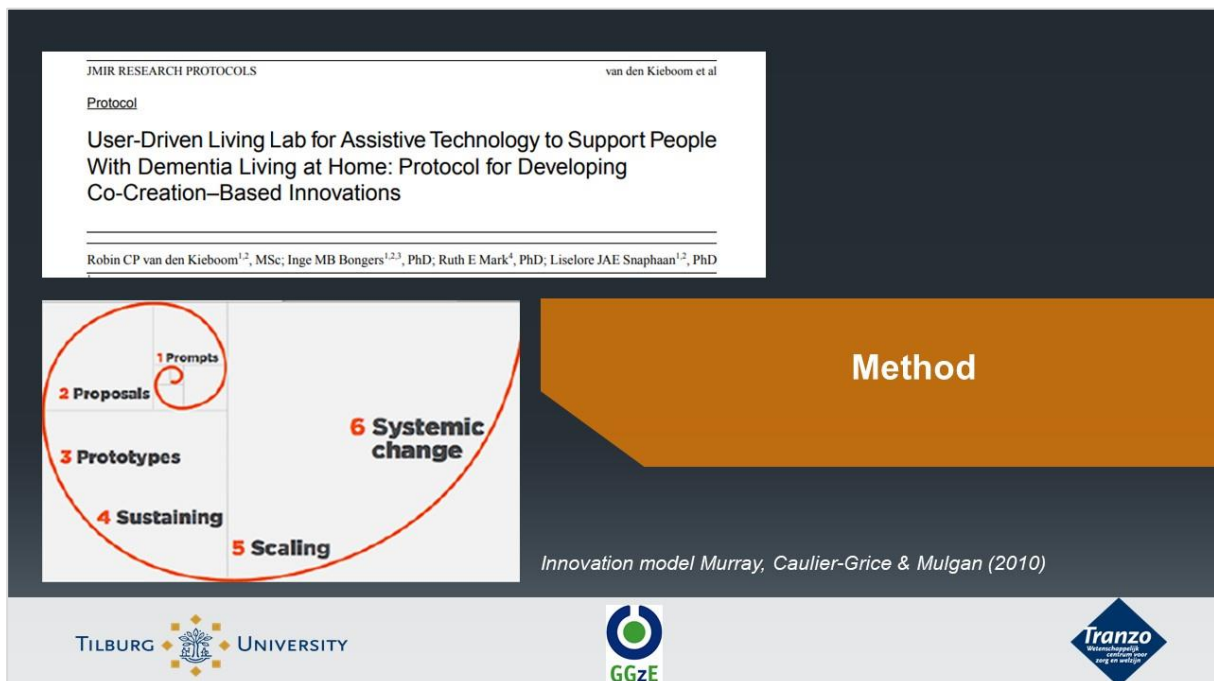
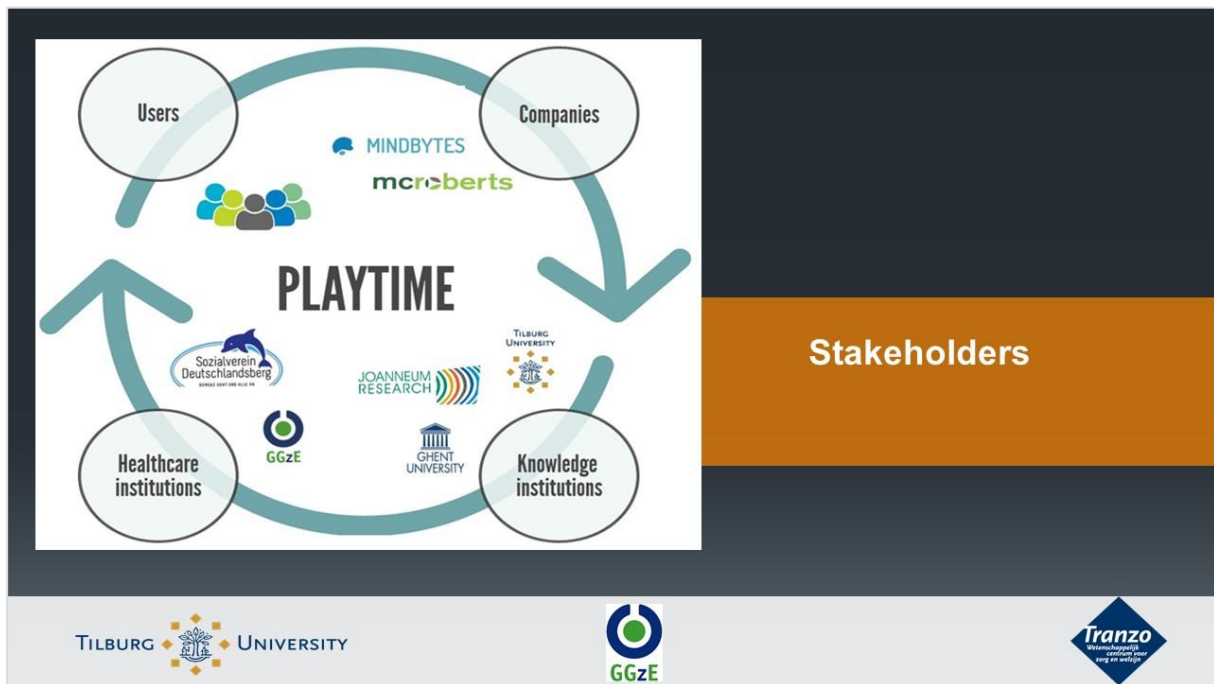
- Cognitive training
- Physical exercises
- Social emotional stimulation

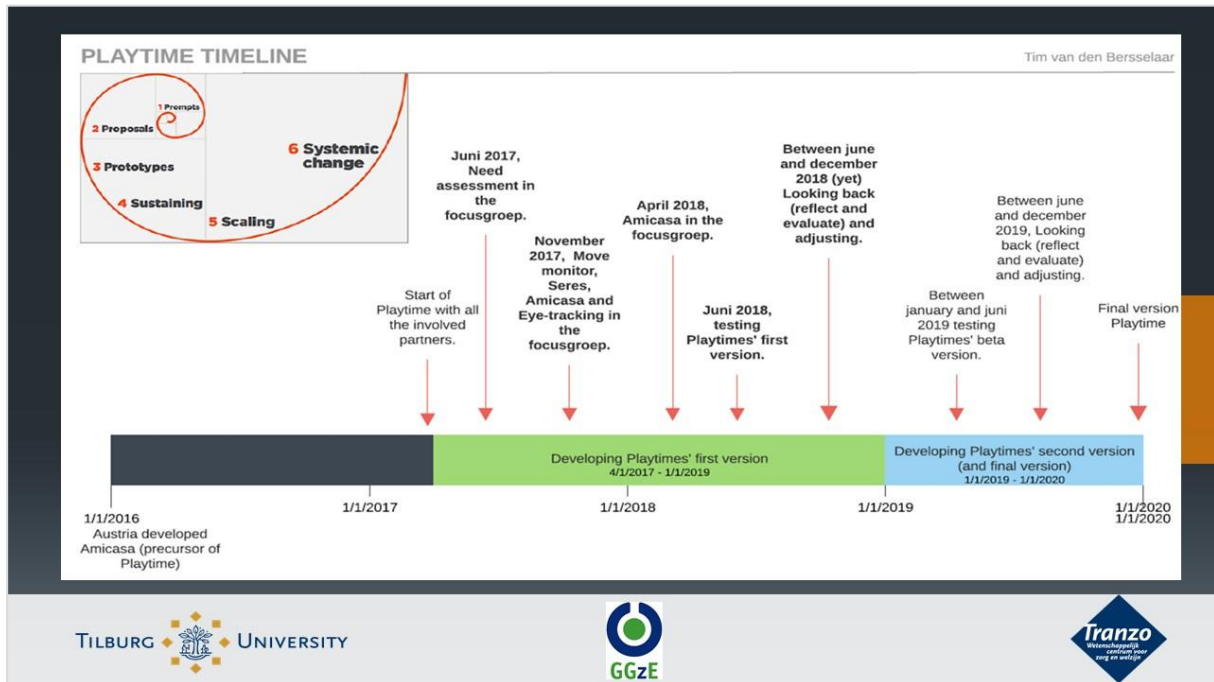


Case study

PLAY TIME

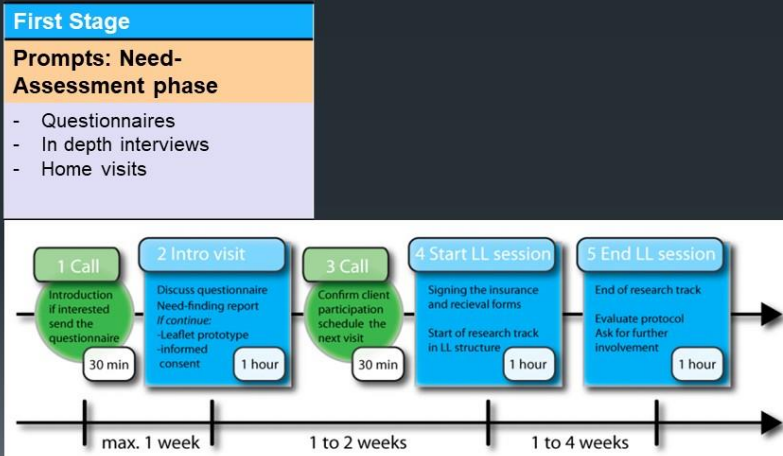
Funded by Ambient Assisted Living program (AAL)





User Involvement – First stage

User involvement at three stages in an innovation track:



User Involvement - Second Stage

Second Stage

Proposal; Developing phase

- Focus group meetings
- Workshops
- Brainstorm sessions

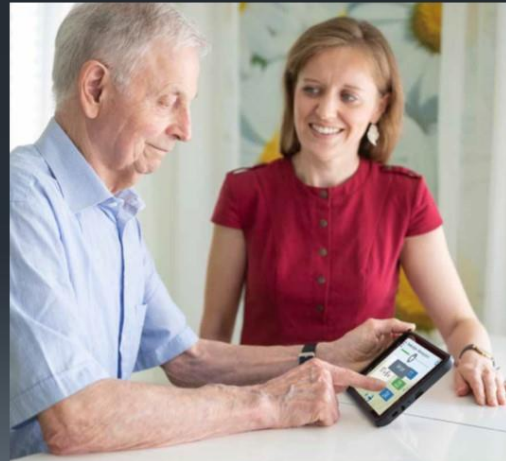


User Involvement - Third Stage

Third Stage

Prototyping; Testing phase

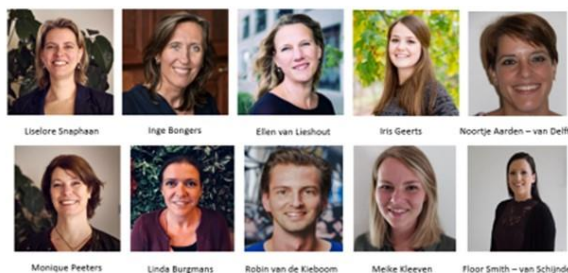
- Products/services at home
- Evaluation at home



Facilitators	Barriers
Users are willing to participate, feeling useful	UCD should be encountered in all innovation stages not only the first three
Better fit between product, needs and desires from end-users	Skills needed to work with people living with dementia
Engagement of users results in better motivation of project partners	Not all user wishes could be fulfilled
Continues learning among project partners	Putting economic value to succesful prototypes and new innovations

Lessons learned

What is the perceived added value when using a user-centered design to develop a serious game?



THANK YOU FOR YOUR ATTENTION!

Contact:
Liselore.snaphaan@ggze.nl



Living Lab Business Models: Learnings from the European Network of Living Labs

Koen Vervoort (ENoLL, Brussels)



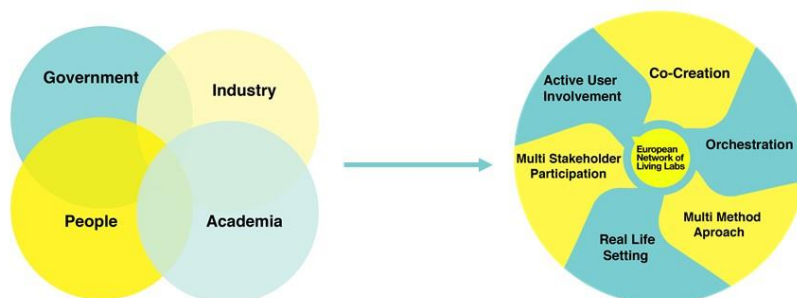
Empower everyone
to innovate

Our definition: Open and User-centred Ecosystems



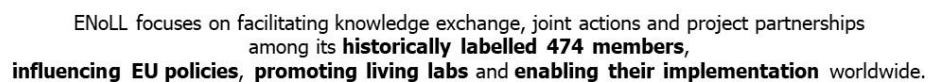
Living Labs operates as **intermediaries** among citizens, research organizations, companies & government agencies/levels. They focus on **joint-value co -creation**, rapid **prototyping and testing** and **scaling-up** innovations & businesses.

Within the **wide variety of types of living labs** and their implementations they all have **common elements**.

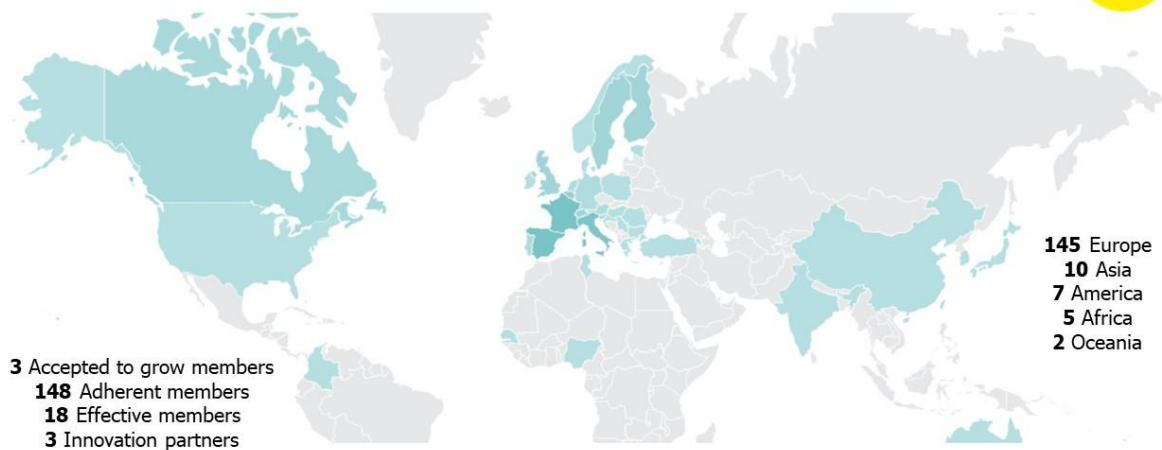


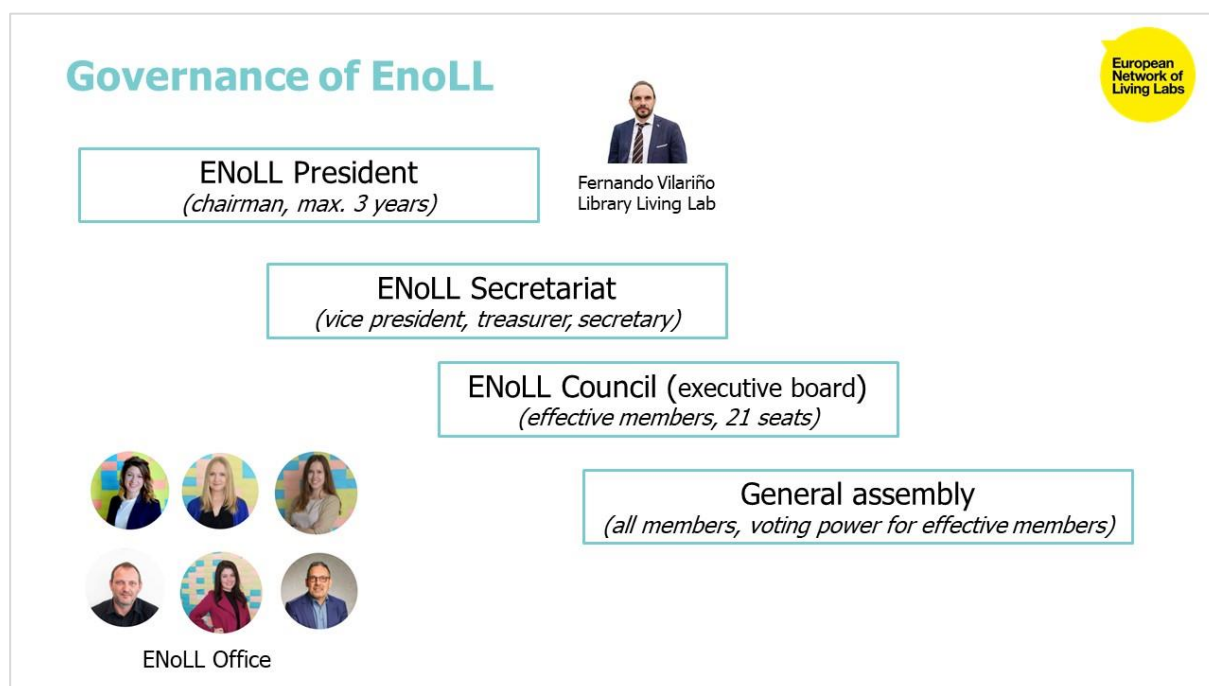
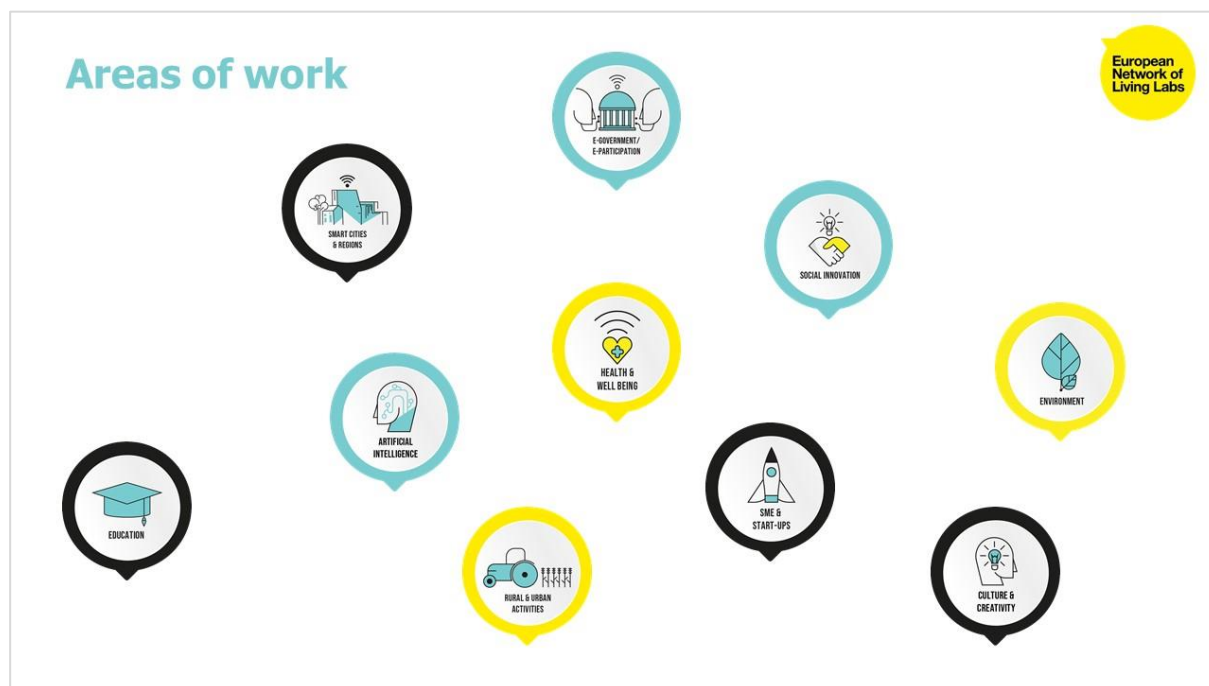


European
Network of
Living Labs



European
Network of
Living Labs





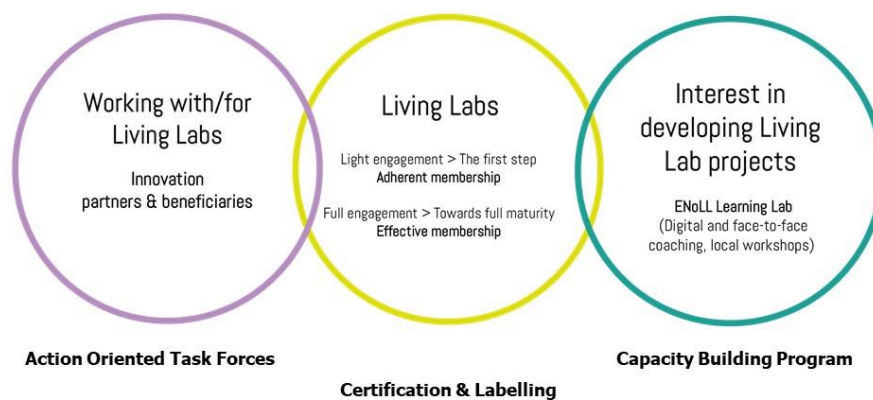
A path to grow

European
Network of
Living Labs



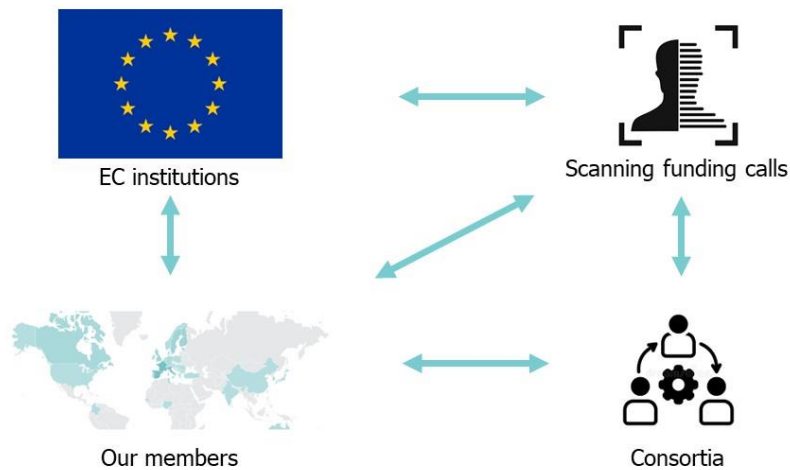
Value proposition

European
Network of
Living Labs



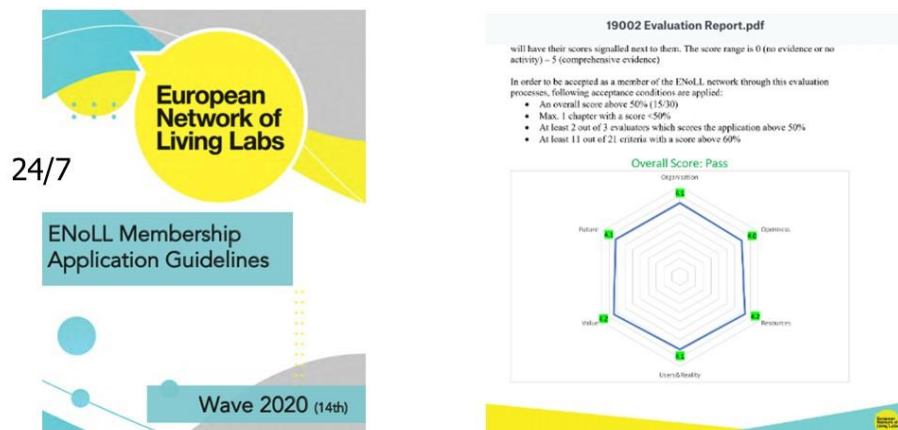
Other services

European
Network of
Living Labs



Labelling & certification

European
Network of
Living Labs



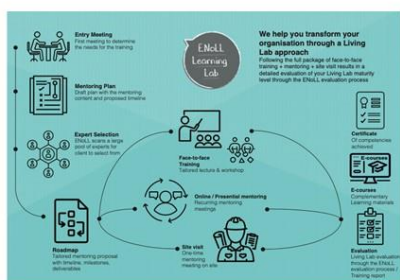
3 peer blind review
by experts (effective members)

<https://enoll.org/about-us/how-to-become-a-member>

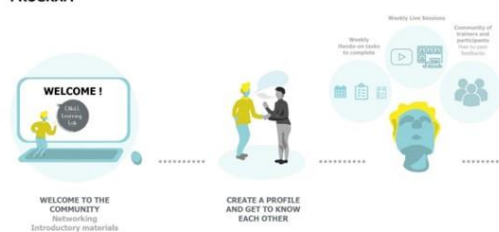
Capacity building program

European
Network of
Living Labs

ACCELERATING THE LEARNING CURVE TO **TRANSFORM YOUR ORGANISATION**
THROUGH A **LIVING LAB APPROACH**



THE LEARNING LAB PROGRAM



Mentoring
1 on 1

Learning Lab
1 to many

Action oriented task forces

European
Network of
Living Labs



Health & Well Being



Evdokimos Konstantinidis
Thessaloniki Health & Ageing
Living Lab



prolida



European
Network of
Living Labs

- Knowledge exchange between Health Living Labs
- Collaboration on co-creating health related living lab services
- Cross-border consortium building



Meetings & Webinars



Capacity Building & Events

Q & A

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European
Network of
Living Labs

EcoStruxure for Healthcare: A dynamic Ecosystem for connected Healthcare

Fabrice Broutin (Schneider Electric France)



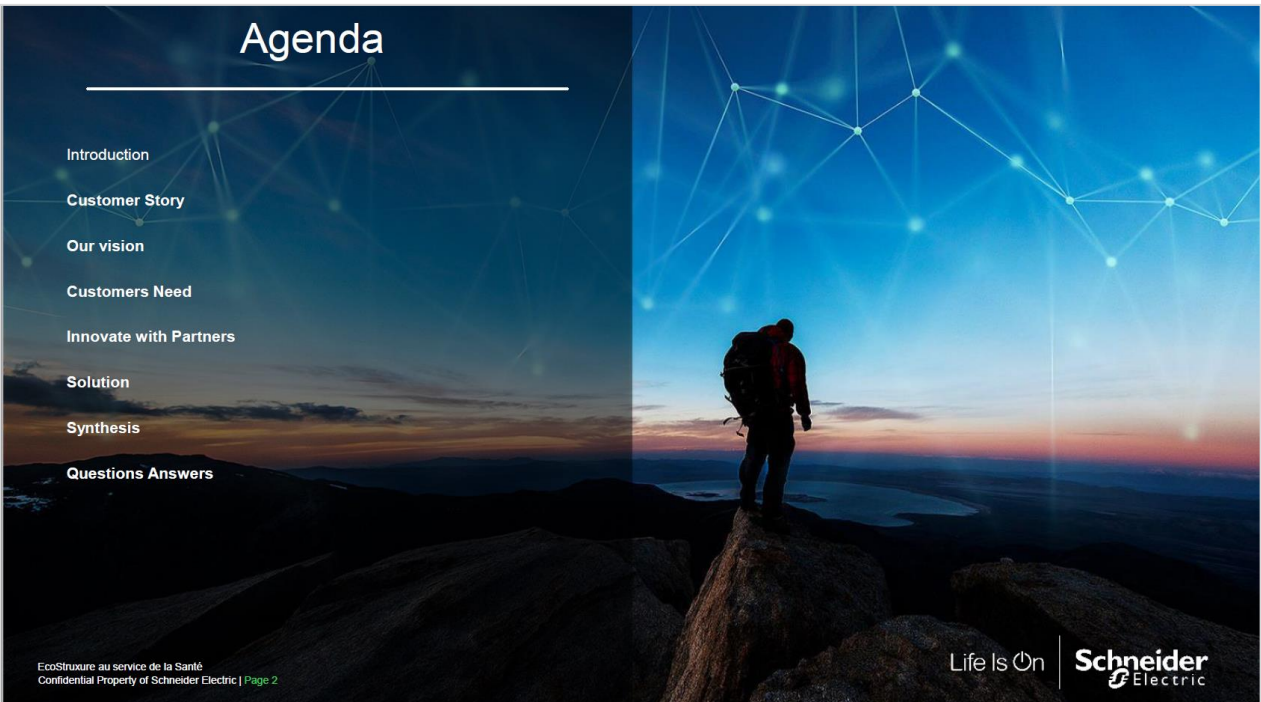
Certification-D Online conference
The 1st of October

Fabrice Broutin, Directeur Segment Santé, Schneider Electric France
fabrice.broutin@se.com
Tel 0687728474

EcoStruxure for Healthcare
A dynamic Ecosystem for connected Healthcare

Fabrice Broutin – Schneider Electric France

Life Is On | **Schneider Electric**



Agenda

- Introduction
- Customer Story
- Our vision
- Customers Need
- Innovate with Partners
- Solution
- Synthesis
- Questions Answers

EcoStruxure au service de la Santé
Confidential Property of Schneider Electric | Page 2

Life Is On | **Schneider Electric**

Introduction

Objective : Testimony of Silver Economy Vision and Solution Deployment


Segment Manager For Healthcare in Schneider Electric France

France Silver Eco Executive Board Member

France Silver Economy Channel VP and Technology Board Member

Centich and IATech Collaboration

Concrete example : First Digital House Retirement deployment : l'Ehpad des Noisetiers Angers (VYV)



Filière Silver Economie
SOUTENUE PAR LE GOUVERNEMENT FRANÇAIS

FRANCE SILVER ÉCO

GRUPE vyv

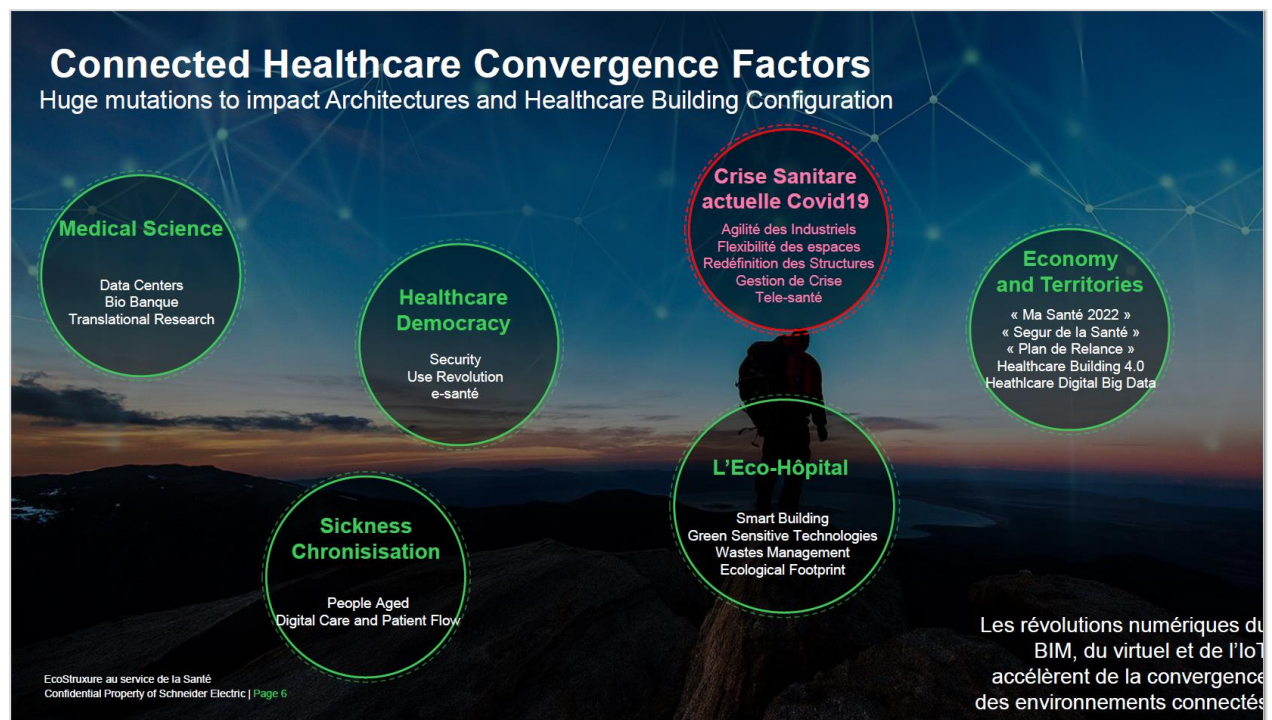
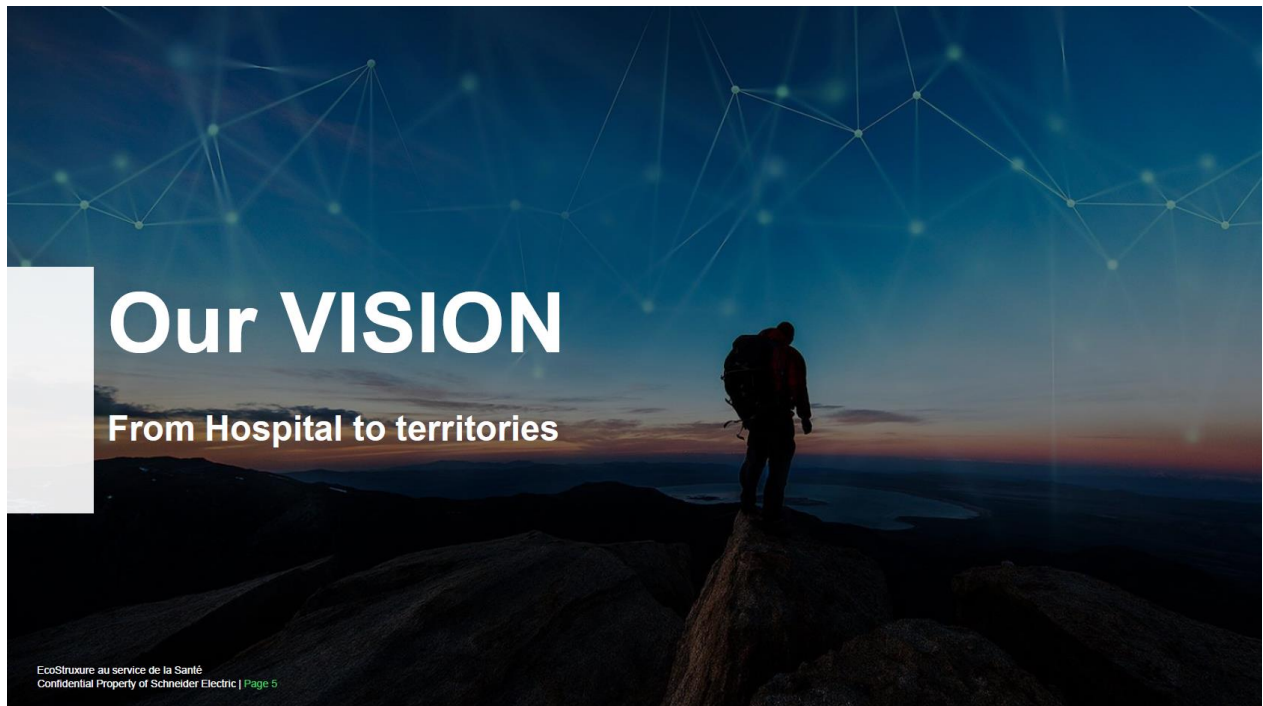
CENTICH

Life Is On | **Schneider Electric**

EcoStruxure au service de la Santé
Confidential Property of Schneider Electric | Page 3

Customer stories





The IoT beyond the Patient Cares

The Digital Revolution and the New Uses makes up the New Ecosystem

21 Billions IoT in Healthcare (2020)

IoT + New Economical Use = New Ecosystem

EcoStructure au service de la Santé
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Customers needs : 3 types of Users & Decision makers

15 Millions de +60 years aged old, 7 Millions de +75 years aged old : X2 in 2050



3 types of decision makers with various needs:

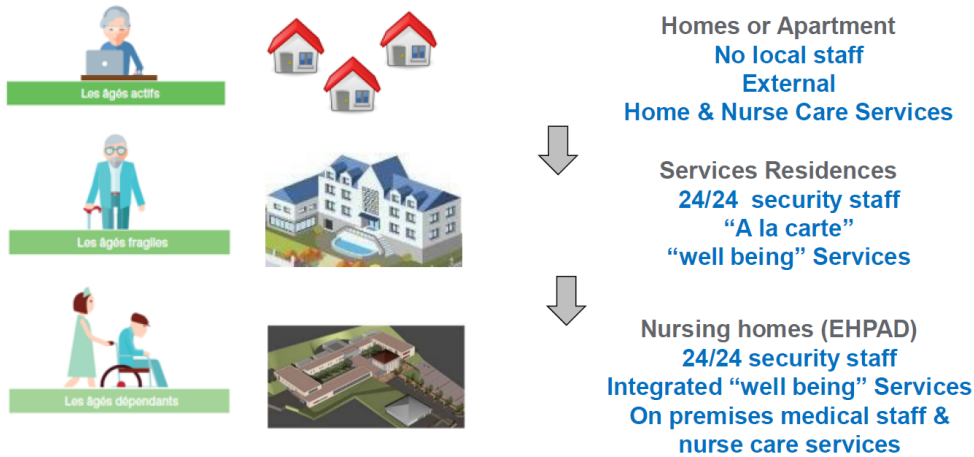
- **Families** that want to make sure that their parents is **in a nice place, with good comfort & services, at reasonable costs**

- **Residents** : “**Well Aging and Well Being**” that are looking for **comfort, security, connectedness** with families and friends, **and services** that make their life easier

- And **professionals** that are looking for solutions that will help be **more attractive for potential residents, maximise occupation rate & services sales and improve their overall efficiency**, connecting them and their residents within the healthcare ecosystem

Current Senior Journey regarding Dependency Level

The Nightmare perspective to leave his well known and friendly environment



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Life Is On | Schneider Electric

PartnerShip : Innovation Industrialization and co-creation the Value

Central Stakes in Digital and Energy Transformation of the Healthcare Segment

Innovation Industrialization

Invent new Model of Value Co-creation

EcoStruxure™

Connected Products
control and supervision,
Applications et Services

Open, Interoperable, CyberSecure Platform

Digital Services Platform

Advisors + Mobil Applications + New Services

Operate Data of Customer Assets in the Building
Life Cycle to the Digital Schneider Electric Platform

Schneider Electric Exchange

New model of Value Creation

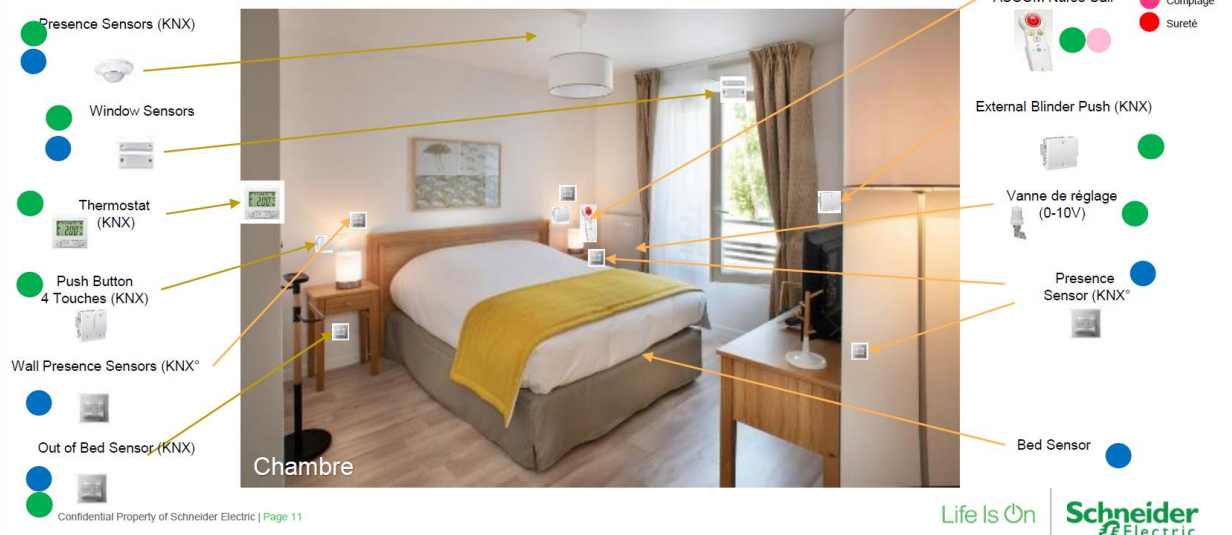
Co-Creation Ecosystem for
development makers, partenaires et
nos clients

EcoStruxure au service de la Santé
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Page 11 Confidential Property of Schneider Electric |

The Solution : SENIOR 3.0

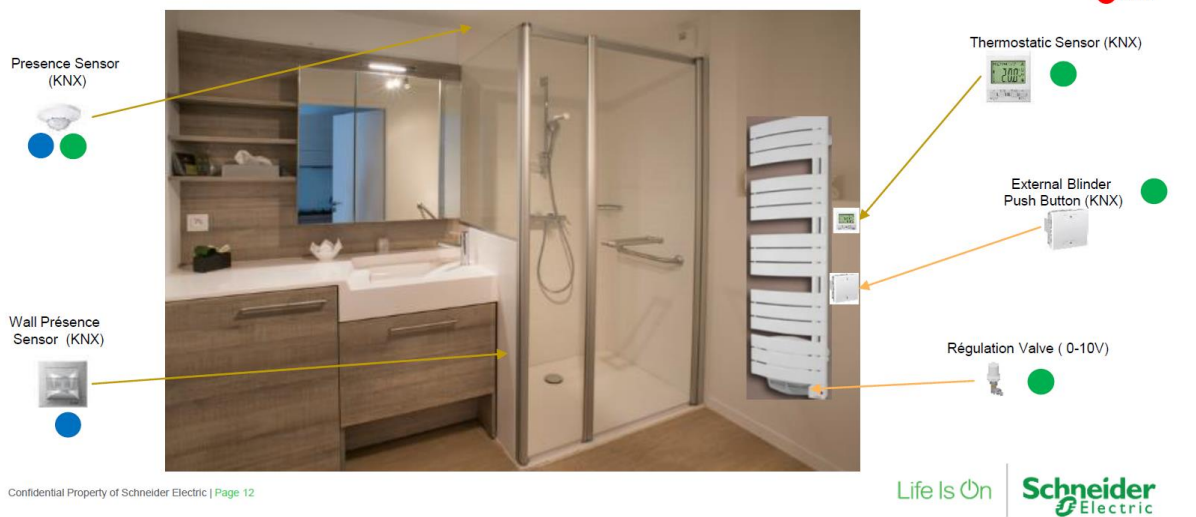
The Technical Bedroom Equipments

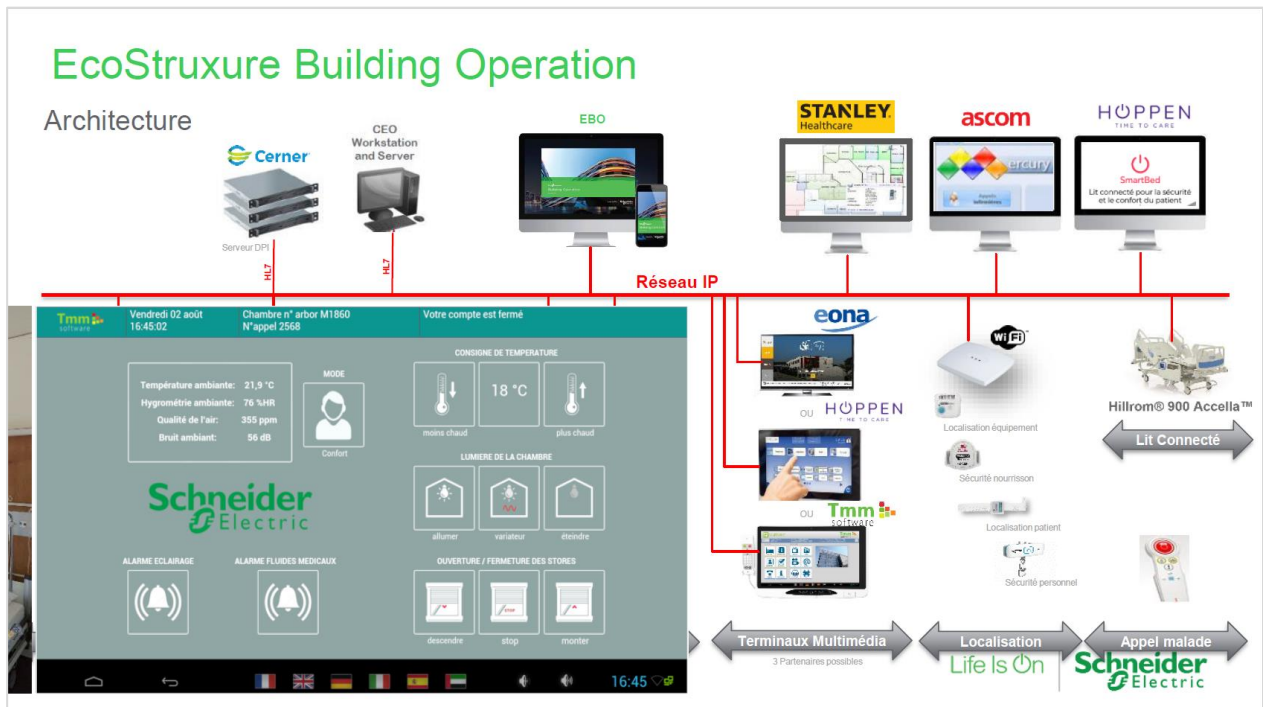


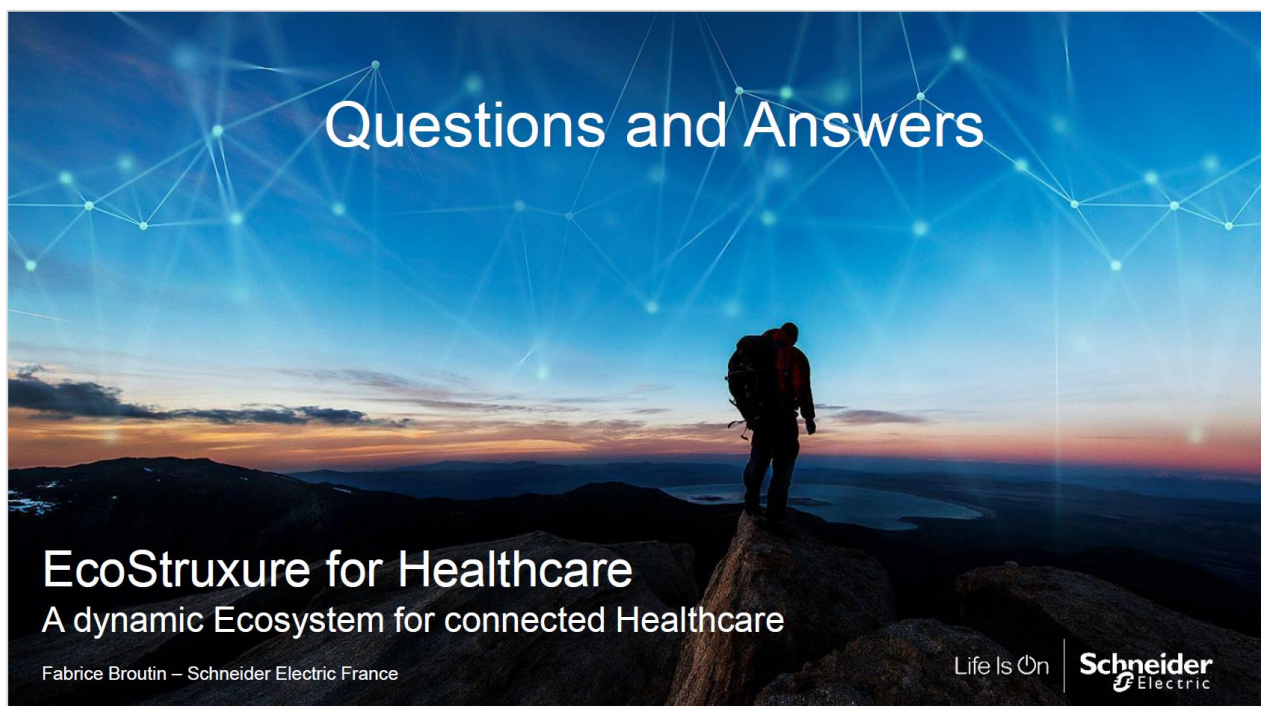
Page 12 Confidential Property of Schneider Electric |

The Solution : SENIOR 3.0

The Technical Bathroom Equipments







Technology Transforming Dementia

Arlene J. Astell (University Health Network, Canada; University of Toronto, Canada; University of Reading, UK)

Technology Transforming Dementia

- Professor Arlene J. Astell
- University Health Network, Canada
- University of Toronto, Canada
- University of Reading, UK



DATE

Dementia
Ageing
Technology
Engagement

Thanks to



Canada

- Juanita Atton
- Elicia Chamoun
- Shital Desai
- Erica Dove
- Cat Edwards
- Parminder Flora
- Alex Hernandez
- Felicia Martins
- Colleen McGrath
- Yuhan Pan
- Chen Xiong
- Arlene.astell@utoronto.ca
- #positive_ageing

Collaborators

- | | |
|-------------------------------|-----------------------------------|
| • Norman Alm (Dundee) | Noriaki Kuwahara (Kyoto) |
| • Jen Boger (Waterloo) | Lili Liu (Waterloo) |
| • Romola Bucks (Perth) | Anna-Måki-Petåjå-Leinonen (UEF) |
| • Angelos Bekerias (Greece) | Josephine McMurray (Waterloo) |
| • Maria Cabrera (Madrid) | Laura Middleton (Waterloo) |
| • Angela Colantonio (Toronto) | Alex Mihailidis (Toronto) |
| • Kiki Edwards (Nigeria) | Ann-Charlotte Nedlund (Linköping) |
| • Maggie Ellis (St. Andrews) | Louise Nygård (Stockholm) |
| • Deb Fels (Toronto) | Lorena Rossi (Ancona) |
| • Gary Gowans (Dundee) | Christina Samuelsson (Linköping) |
| • Faustina Hwang (Reading) | Yvonne Schikhof (Rtdm) |
| • Rob Harrison (Sheffield) | Andrew Sixsmith (Vnc) |
| • Phil Joddrell (Sheffield) | Sarah Smith (Manchester) |
| • David Kaufman (Vancouver) | Liz Williams (Sheffield) |
| • Bea Krayenhof (Niagara) | |

Time to act



Dementia is a long-term condition



Need practical solutions to live well with dementia



Traditionally viewed as clinical issue



Continue daily activities



No disease-modifying therapies



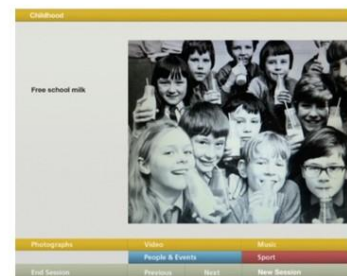
Delay/reduce demands on family and services

Barriers



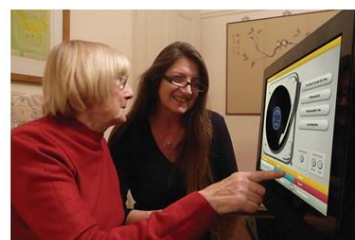
Reconceptualising dementia

Move away	Move away from “Rhetoric of compassion” (Rogers & Marsden 2013)
Stop	Stop thinking about dementia “as a problem that can be managed by technology” (Vines et al. 2010)
Work	Work with people who have dementia as intended users of technology to determine their needs, priorities and aspirations
Recognise	Recognise that family caregivers and formal care providers are <i>separate</i> but related users of technology with <i>their own needs</i>



CIRCA

CIRCA



CIRCA



'Cognitive prosthesis'
(Alm, et al., 2004)



Making software
accessible (Alm, et al.,
2007)



Positively change
caregiver's perceptions
(Astell, et al., 2009)



Positive impact on
caregiving relationships
(Astell, et al., 2010a)



Advantages of generic
photographs (Astell, et
al., 2010b)



Accommodate diversity
and elicit different
perspectives (Purves, et
al., 2011)



Third-party in
conversation (Alm, et al.,
2013; Purves, et al.,
2014)



Significant impact on
cognition and quality of
life (Astell, et al., 2018)

CIRCA-SWEDEN

Universal Access in the Information Society
<https://doi.org/10.1007/s10209-020-00745-4>

LONG PAPER

Tablet computer-supported conversation between people
with dementia and their carers: technology as interactional focus

Ulrika Fern¹ · Anna Ekström² · Elias Larsson³ · Christina Samuelsson⁴

© The Author(s) 2020



Välkommen till CIRCA

Tryck på knappen för att ladda ditt CIRCA-innehåll.

 **Starta CIRCA**

OM CIRCA

ADMINISTRATÖRSPORTAL

LIM



WHAT ACTIVITIES DO
PEOPLE WANT?



WHAT DO THEY NEED TO
PLAY INDEPENDENTLY?



Co-design and development
process

- Iterative development
- 100+ people with mild to moderate dementia involved at every stage.
- Sessions video-recorded.
- Post-session interviews.



LIM



LIM

Category	Digital video activity	
Interactive 3D environments	Botanic garden	Pub
	Art gallery	Sitting room
	Domestic garden	Kitchen
	House	
Sports	Golf	Skittles
	Soccer – penalty kick	Tennis
Funfair and traditional games	Shooting gallery	Pinball
	Whack-a-mole	Coconut shy
	Bingo	
Creative	Musical chimes	Vase painting
	Bubble blower	Keyboard
	Drumkit	
Miscellaneous:	Picture viewer	Video viewer
	Planting seeds	Aquarium
	Ball course	Bird House
	Flowers opening	Pet dog
	Making toast	Boiling kettle
	Frying eggs	Fish pond
	Fireworks	

LIM



CLEAR GOALS AND
RULES REQUIRED



SIMPLE AND SENSITIVE
PROMPTING



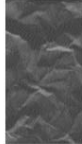
EXPERIENCE AUTONOMY
AND COMPETENCE



PARTICIPATE AS FULL
PARTNERS

Resources

Technology and personhood in dementia care
Astell, Arlene J
Quality in Aging: Mar 2006; 7, 1; ProQuest Central
pg. 15



Technology and personhood in dementia care

Arlene J Astell

Univ Access Inf Soc (2009) 8:49–58
DOI 10.1007/s10209-008-0129-9

LONG PAPER

Involving older people with dementia and their carers in designing computer based support systems: some methodological considerations

Arlene Astell · Norman Alm · Gary Gowans ·
Maggie Ellis · Richard Dye · Phillip Vaughan

Published online: 29 May 2008
© Springer-Verlag 2008

REAFF (2010)

Principle	Definition
RESPONDING	Technological solutions must be responsive to the needs of people with dementia
ENABLING	Technological solutions must enhance the life of the person with dementia and not disable them in any way
AUGMENTING	Technological solutions must build on and extend the retained abilities and skills of people with dementia
FAILURE-FREE	Technological solutions must be intuitive and accessible and not undermine the confidence of a person with dementia



Tablets

Other projects



AAL-WELL



DIGITAL STORIES



KINECT BOWLING



MRTS



DATADAY



RESILIENT

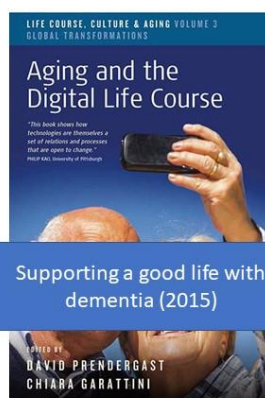
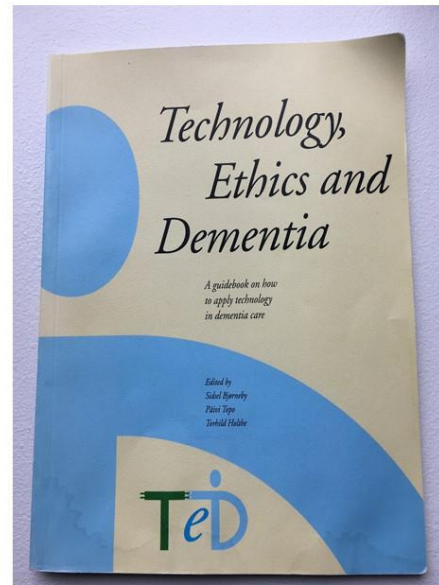


MCI@WORK



DEMENTIA
ISOLATION TOOLKIT

Technology Ethics Dementia



RESOURCES

Using Technology in Dementia Care

A Guide to Technology Solutions
for Everyday Living



Edited by
Professor Arlene Astell,
Dr Sarah Kate Smith
and Dr Phil Jodrell

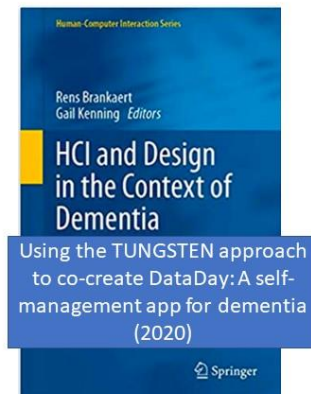


Dementia and Geriatric Cognitive Disorders

Vol. 47, No. 3, 2019

Issue release date: July 2019

Technology and Dementia - The Future is Now



Principle	Definition
RESPONDING	Technology must be responsive to the needs of people with dementia
ENABLING	Technology must enhance the life of the person with dementia and not disable them in any way
AUGMENTING	Technology must build on and extend the retained abilities and skills of people with dementia
FAILURE-FREE	Technology must be intuitive and not undermine the confidence of a person with dementia
+	
PRIORITIES	Technology must reflect the priorities of people with dementia
CONTEXT	Technology must understand the context in which people operate
ACCESSIBILITY	Technology must be accessible both to use and to acquire

Astell, A. J. (2019). Creating technology with people who have dementia. In: S. Sayago, (Ed) *Perspectives on human-computer interaction research with older people*. New York: Springer.

TTD Principles



WHO WANTS THE
TECHNOLOGY?



WHY DO THEY
WANT IT?



WHERE IS IT GOING
TO BE USED?



WHEN IS IT GOING
TO BE USED?



HOW WILL THEY
ACCESS IT?

TTD Agenda

1

Present a vision of a
technology-empowered
future of living well with
dementia

2

Move away from lowest
common denominator
solutions

3

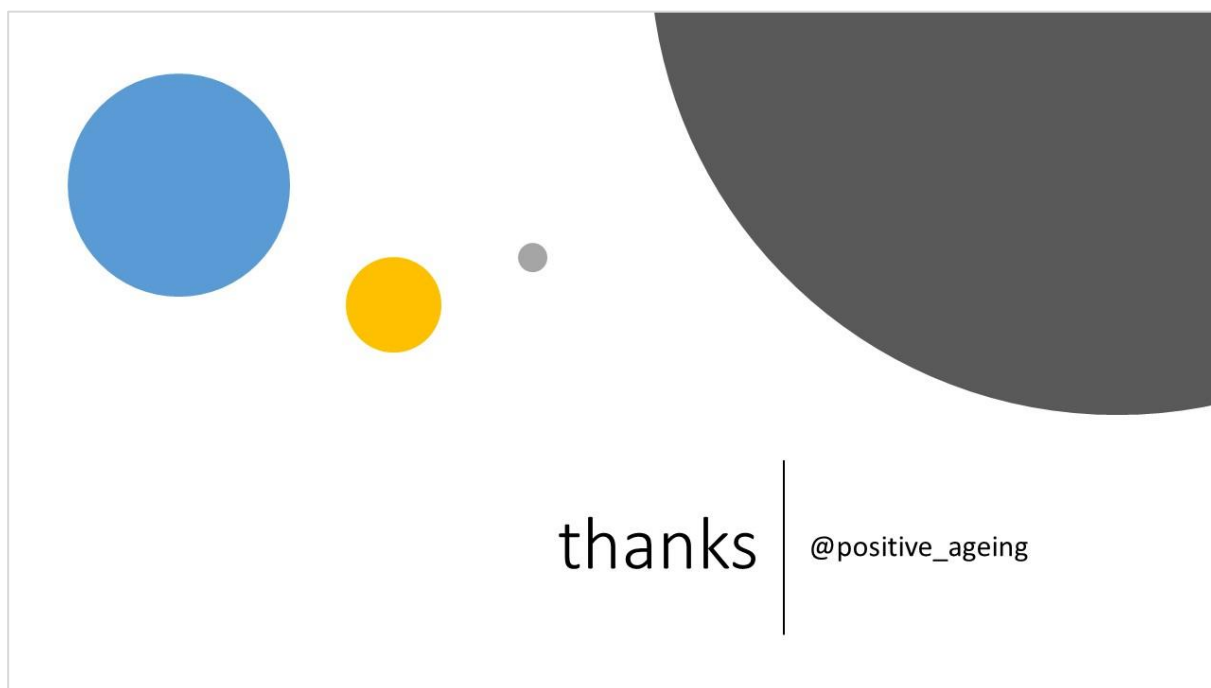
Challenge control,
restraint and pacifying
solutions

4

Deliver technology in
context to ensure
optimal use

5

Demonstrate value and
benefit of technology for
individuals and society



Dementia and Technical Support

Ralf Ihl (ARCK and University of Duesseldorf Germany)

Certification D, Krefeld, October 1st, 2020

Dementia and Technical Support

Ralf Ihl

ARCK and University of Duesseldorf Germany

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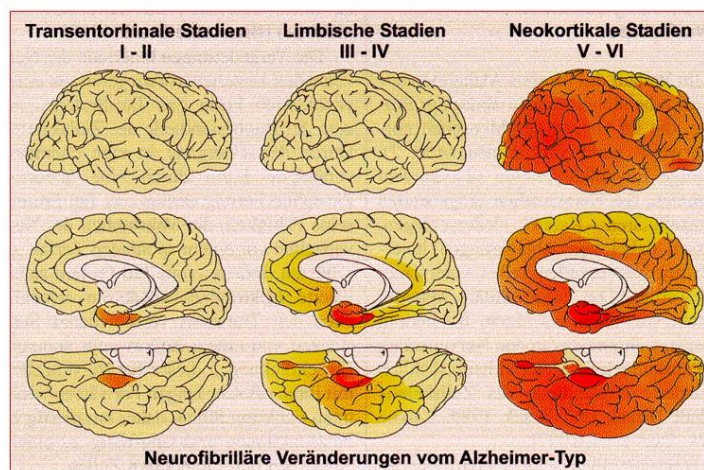
Fact Sheet Dementia

- 70 % Alzheimer's, 20 % vascular, multiple other causes
- With 65 years 1 out of 100, with 80 1 out of 5, with 90 1 out of 3
- Mean duration 6-8 years
- No cure, no stop
- Medication can delay the course up to 3 years
- Beginning 30-40 years in advance
- Risk reduction is an option

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Neuropathologic Stages of Alzheimer's Disease

Braak und Braak, 1991



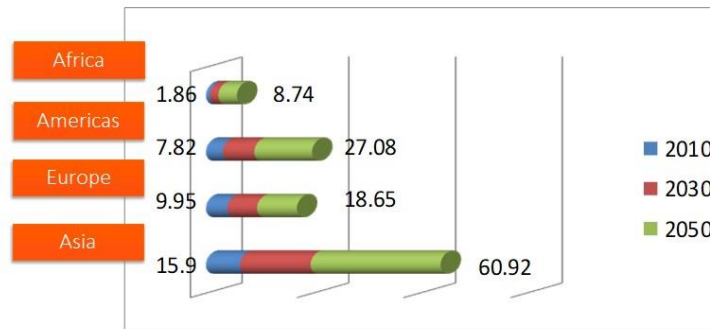
© Ihl, 2020

Frequency and importance

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Number of people with dementia

6 % of people age > 60 years; now 35.56 million - 2050 114.38 million



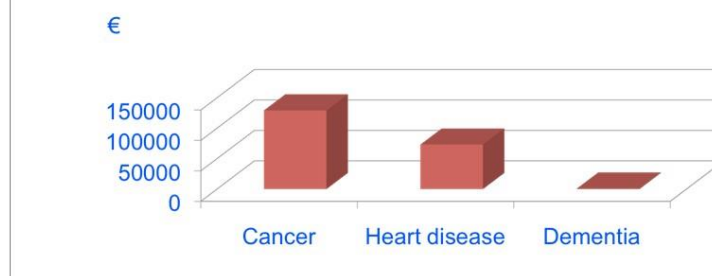
People with dementia in millions

Prince et al., Alzheimer's & Dementia 2013 9:63-75

© Ihl, 2020

Money spent for research

Comparison of research spending in Euro
per 1 million € costs of nursing care



Wimo et al., Alzheimer's & Dementia 2013 9:1-11

© Ihl, 2020

6

Treatment options

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WFSBP-Guidelines

Ihl et al. 2011, 2015

- ✓ So far, no anti-dementia medication can be recommended for prevention
- ✓ Anti-dementia medications neither cure, nor arrest, or alter the course of the disease
- ✓ The type of dementia, the individual symptom constellation and the tolerability and evidence for efficacy should determine what medications should be used
- ✓ Only for the symptomatic treatment of dementia is there sufficient data available (Evidence level B, recommendation grade 3)
- ✓ Donepezil, galantamine, memantine, EGB 761®, and rivastigmine
- ✓ **show a modest, positive effect**
- ✓ **over a limited time,**
- ✓ **in a subgroup of treated patients**
- ✓ There is no superiority of any of the medications compared to any other
- ✓ The side effect profile of Memantine and EGB 761® is superior to that of Cholinesterase inhibitors
- ✓ Optimal management of vascular risk factors (for instance hypertension, diabetes, and optimal cholesterol and lipid levels) and sufficient treatment of accompanying diseases are recommended
- ✓ Evidence level A, recommendation Grade 1

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WFSBP-Guidelines - Ihl et al., 2015

Neuropsychiatric Symptoms (NPS)

Recommendations for the treatment of NPS

Elimination of causal factors: At first, modifiable causal factors have to be identified and addressed. Thus, somatic disease or side effects of medications need to be identified as possible causal and/or contributing factors. Environmental factors and basic needs such as hunger and thirst may be readily addressed.

Psychosocial interventions: To identify subsequent interventions, after the diagnosis of dementia all available caregivers should be seen by the family practitioner. All necessary information should be obtained and caregivers should receive information and training regarding the patient's condition and the causes of the patient's behaviors. Moreover, possible additional support should be considered and training in psychosocial aspects of caring should be recommended.

Treatment with drugs: When psychosocial interventions and the exclusion of environmental factors fail drug treatment may be necessary. For drug treatment in NPS, recommendations reach only expert opinion standard and are not given here (Evidence level C3, recommendation grade 4). A detailed review of the cautions that have to be taken into account for treating NPS with drugs is given in Gauthier et al. (2010).

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WFSBP-Guidelines - Ihl et al., 2015

General Advice

After the diagnostic procedure the physician in charge of the treatment and care of the patient should schedule regular follow-up visits. The purposes of planning systematic follow-ups include:

- To ensure identification and appropriate treatment of concomitant conditions and complications of the primary dementia disorder.
- To assess cognitive, emotional and behavioral symptoms.
- To evaluate treatment indications and to monitor pharmacological and non-pharmacological treatment effects.
- **To assess caregiver burden and needs.**
- **To assess sources of care and support.**
- **To provide continuous advice and guidance to patients and caregivers on health and psychological issues.**
- **To administer appropriate caregiver interventions.**

It is important to follow legal requirements for informed consent in prescribing medications. For persons with dementia unable to give informed consent, proxy consent should be obtained from their family caregiver or other appropriate person as required by local legislation.

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Technical Support

So far there are neither recommendations
Nor quality control

Technical, medical and social language are different

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Symptoms: the gate to new developments

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Stage and Symptoms

GDS	Symptoms
1	None
2	Subjective complaints
3	Recognizable Symptoms in some cognitive domains
4	Symptoms in all cognitive domains
5	Additional somatic symptoms like incontinence, loosing the thread of thought
6	Short sentences if ever without understandable sense multiple somatic disorders
7	Bedridden

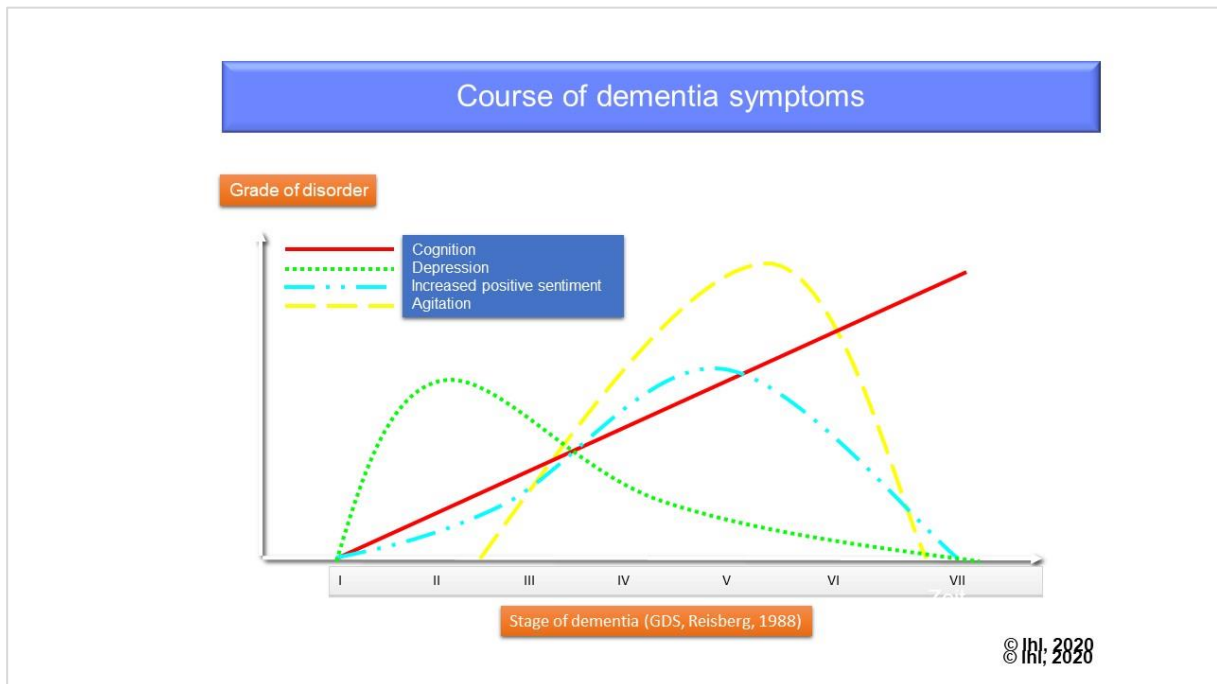
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Symptoms

- **Loss of memory**
- **Loss of orientation**
- **Speech disorders**
- **Emotional disorders**
- **Delusions**
- **Hallucinations**
- **Well preserved facade**
- **Further sumptoms:**

Agitation, aimless pacing, uncertainty, indifference, lack of organization of personal care, incontinence, personality disorders

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For developing new technical supports,
randomized, placebo controlled trials
are the state of the art.
However, the traditional way
will not always be the best

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Hazardous journeys

Parachute use to prevent death and major trauma related to gravitational challenge: systematic review of randomised controlled trials

Gordon C S Smith, Jill P Pell

Conclusions As with many interventions intended to prevent ill health, the effectiveness of parachutes has not been subjected to rigorous evaluation by using randomised controlled trials. Advocates of evidence based medicine have criticised the adoption of interventions evaluated by using only observational data. We think that everyone might benefit if the most radical protagonists of evidence based medicine organised and participated in a double blind, randomised, placebo controlled, crossover trial of the parachute.



Parachutes reduce the risk of injury after gravitational challenge, but their effectiveness has not been proved with randomised controlled trials

[Smith GC¹](#), [Pell JP](#). Parachute use to prevent death and major trauma related to gravitational challenge: systematic review of randomised controlled trials. [BMJ](#). 2003 Dec 20;327(7429):1459-61.

© IHI, 2020 17

We are looking for new ideas!



Thank you for your attention!

CERTIFICATION-D

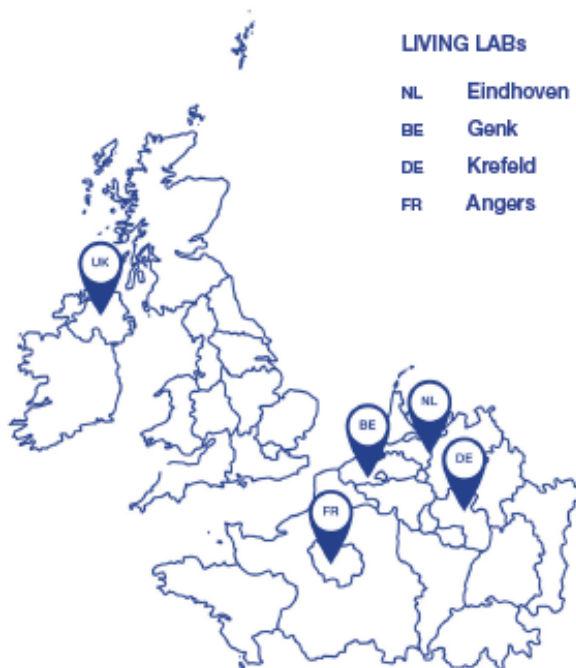
From 2018 to 2050, the number of People with Dementia will increase from 3.3 to 8.5 million in North West Europe. Because the supply of places in long-term care facilities is limited there is a shift by local governments to encourage People with Dementia to remain at home for as long as possible. Because more people will live longer at home in the future, they will also need additional support-products. However, studies show that People with Dementia and their support network do not always know about or trust products that are available. To support both individuals with dementia and their support network, Certification-D will define standards for these products and, through certification, increase confidence in them. Next to this, it will encourage local and regional businesses to focus on this important theme.

Sub-objectives

Selected existing products for People with Dementia will be tested and/or improved in the Living Labs based on these design requirements and the supplementary product group-specific requirements. The knowledge gained will be used to improve product (re-)designs and to support SMEs outside the project to develop new products for people with dementia.

Furthermore, Certification-D will develop a business development strategy for market uptake. A certification procedure with a quality mark will be developed and used by many SMEs, patient organisations, research and healthcare institutions to inspire and increase the innovation potential of regional SMEs.

Partners



Outputs

- Set-up of four active living labs
- Creation of four catalogues of tested and evaluated design requirements
- A certification process and quality mark
- Eleven SMEs are supported in (re)design
- +/- 50 SMEs involved
- At least 24 products will be tested
- An integration of products and services within eight cases
- A (Certification-D) Network

Objective

Certification-D will develop a quality mark for products, systems and services that support people living with dementia at home and their care network. These products will focus on enabling, safety or leisure and will enable people with dementia to stay longer, more safely and better in their own home.

Small to Medium sized companies will be supported in developing innovative and reliable technological products tailored to the needs of people with dementia living at home.

UK	
NL	
BE	
DE	
FR	

More info

www.nweurope.eu/CERTIFICATION-D

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