



ACTIVE ASSISTIVE LIVING
TECHNOLOGIES FOR WELLNESS,
ENGAGEMENT, AND LONG LIFE



International Research



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The AAL-WELL
Vision

How can we *design technology* to better support older adults with *memory issues* to *live well*?



Mild Cognitive Impairment—MCI

- ✓ Decline in cognitive ability among older adults
 - greater than expected due to normal ageing
 - not enough to prevent independent living
- ✓ Difficulties with memory, concentration, visual perception, judgement, task completion, etc.
- ✓ Relatively common, estimates vary 3-42%



Technology for “Aging in Place”

- ✓ Unobtrusive technology
- ✓ Aids “ageing-in-place”
- ✓ Supports:
 - ✓ Safety
 - ✓ Autonomy
 - ✓ Active Lifestyle
 - ✓ Social Connections
 - ✓ Happiness & Confidence





AAL-WELL Projects

Work Packages

- 1) Understanding older people's needs
- 2) Novel AAL development
- 3) User testing
- 4) Cross-cutting initiatives



Understanding Older People's Needs

- ✓ *Literature review & focus groups*
- ✓ Taking part in life outside home is important—but often lost first when people develop memory problems
- ✓ Many activities outside home are more demanding as they encompass many layers



Understanding Older People's Needs - 2



Grocery Shopping:

- Leaving home in a controlled manner
- Finding one's way
- Managing transportation
- Know/handle time
- Handle payment

Novel AAL development

- ✓ Middleware
 - ∅ Coordinates & supports other technology
- ✓ Key Issue: maintainability
- ✓ Customization
 - ∅ *Who & how much?*
- ✓ Testing with 2 main standards



User Testing

Emotional impact of being diagnosed with MCI

Systematic review & longitudinal study with interviews

1. *Impact on identity*

- Changing roles in the family and community
- Worries about the future
- Importance of reflecting on the past

2. *Living with ambiguity*

- People don't know if their memory problems are a part of "normal" aging, or a medical issue



Slide 13

C1

Piper, I can't remember what we decided about using this term in the knowledge cafe. If we scrapped it from the discussion, please replace MCI with 'memory problems'

Cobalt, 24/09/2015

User Testing - 2

- ✓ How do people use technology in everyday life?

Sarah: So you have a diary and you keep everything in that diary – but it looks like you've always done that, that's not a new thing is it?

Steve: Yeah but I think it stopped my memory working. Er... I didn't use, I used to put lots of things in, yeah, football matches predominantly



Cross-Cutting Initiatives

- ✓ Knowledge Translation
- ✓ Training & Mentorship
- ✓ Trans-disciplinary Working



Community & Industry Partnerships

Cities for Seniors

Peer mentoring

- Cognitive Activity
- Technology Use

8 week course

- 1 year volunteer help

Ethnographic Study



Working across Boundaries

✓ Methods for uniting understanding

✓ *Social, Clinical, Technical, etc.*

∅ Personas

∅ Scenarios

∅ Bridging Model

Kenjiro Tanaka
("Call me Ken") 68 years

Kenjiro says:
"I'm amazed as it's
funny but can't keep up
with today's technology!
It changes so fast and
they don't give
instruction manuals
anymore. I wish to learn
but hate to bother the
kids to teach me."

Ken lives with his wife in an apartment in Bamble.
Having downsized from their house three years ago.
They have a son who lives in Vancouver with his
wife and two kids, and a daughter who lives in
Toronto with her husband and one baby boy.

Time
In case of:
• needs
• habits
• behavior

Context
May include:
• People
• Tasks
• Settings
• Social context
• Information

Person
Age
• Gender
• Physical/psychological
features
Cognition
• Declarative
• Action

Final Words

- ✓ Disparate work ≠ disparate results
- ✓ Technology development needs communication & understanding
 - ✓ Complex people, networks, problems
 - ✓ KT, TD, PAR, ... → impact!



Funding Agencies



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Thank you!

