Cooperation between AAL related research and care giving for seniors in the municipality of Schwechat

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Demographic change in the developed countries

40 years forecast (Europe):
- 65+ population will treble
- 80+ population will quadruple

→ huge challenge to society
... an answer gives AAL

- AAL = Ambient Assisted Living
  +/- supporting environment for living, esp. for older people
- ICT and other technologies (e.g. intelligent materials), in order to prolong the independent living of older (but also of disabled) persons as long as possible
- Examples of what is part of it:
  - Assistive smart homes ... independant and safe living
  - Barrier free design
  - Senior specific ICT user interfaces ... inclusion
  - eCare/teleCare solutions
  - Support for mobility
Interviews with seniors - Schwechat 2007 (H. Meissl):

- > 90% want to stay at own home at an old age
  - Believing, that dwelling situation is suitable
  - Facing problems outside their home (e.g. stairs)
- Large group of elderly gets support by relatives (household, shopping)
- 73% have daily contact to relatives
- Concerns of single living seniors:
  - Fall downs followed by helplessness
  - Danger of fire (oven etc.)
  - Social isolation (building conditions, missing infrastructure)
AAL Living Lab Schwechat

Living Lab Schwechat

• CEIT research institutes
• Municipality of Schwechat
• Senior citizen centre Schwechat
• Advisory board of senior citizens
• Cooperation platform of social services
• SME and industry
• senior citizens

outcome of eSchwechat.at programme
Background & Motivation

- **intensive and early involvement of users**
  - in the innovation and design process is crucial to ensure
  - that the future product will meet the actual needs of the users in their daily life.

- **who are the users?**
  - Seniors as primary end users
  - Care-givers, nurses etc. as secondary end-users
CEIT Raltec

- **CEIT RALTEC** was founded in 2006 by the municipality of Schwechat as a non profit extra faculty R&D institute

- R&D of innovative ICT in the area of
  - Ambient Assisted Living (AAL)
  - eHealthcare
  - eHomecare
  - Barrier free usability of ICT interfaces

- for **older persons** and people with special needs
- enabling and empowering people to **live independently and autonomously** in their own home as long as possible
- close cooperation with Vienna University of Technology
LL- Schwechat - actors

69 apartments

nursing station
22 beds

AAL-demo - apartment

day care centre
30 guests / day

administration

„Seniorenzentrum“ Schwechat
(since 1996)
Senior Citizen CENTER

CARE COMPANIONSHIP ADVICE

RESIDENTS
DAY CARE C.'s GUESTS RELATIVES

OFFERS

MUNICIPALITY’s ACTIVITIES FOR SENIORS EVENTS
FITNESS COURSES BARBER & FOOTCARE
Demo-APPARTM.

NETWORKING

CARE Organisations
CEIT Raltec – RTD
SENIORS’ ADV. BOARD
Methodology

• User centered design
  – Focus groups
  – Interviews
  – Workshops with primary and secondary end users
  – Use of „mock ups“ (prototyping devices)
  – Different types of evaluation methods
    • In usability lab and
    • Real user environment
Methodology (2)

- Iterative approach:

  - Specification
  - User Needs
  - Prototype
  - Evaluation
Project examples

Interactive Picture Frame

- intuitive voice and video communication platform for senior citizens
- based on touchscreen-PC
- in cooperation with
Project examples

EHome

- targets:
  - Improving personal safety and quality of life in senior’s own home
  - recognition of critical situations
  - recognition of falls
  - monitoring safety-critical areas (e.g. cooker)
  - automatic alarm generation for getting external help
  - enabling elderly people to stay in the home as long as possible

- in cooperation with
  - Vienna University of Technology
  - TREVENTUS MECHATRONIK GmbH
  - Kapsch CarrierCom AG

- supported by
Project examples

Long Lasting Memories

• ICT-based cognitive and physical training in a safe environment

• field trials in the Living Lab Schwechat and 4 other EU-countries

• in cooperation with 11 partners in 6 European countries
Project examples

VITALIShoe – instrumented eShoe

• Prediction of falls
  – Long term
  – Short term
• Analysis of gait
  – Recognising causes of falls
  – Distinctive features with regard to old persons
• Notifying of a fall (if nothing else possible)
• Rehabilitation
• Therapy
• Sports
• in cooperation with
  – Technical University of Applied Sciences Vienna
  – Massive Art GmbH
• supported by
Project examples

myTablet

- Study concerning usability and acceptance of tablet PCs by seniors
- Usability study including fieldtests with older people (internet and computer newbies) in Schwechat (2011)
KSERA

- Validation of social assistive robots (SAR) in LL Schwechat

http://ksera.ieis.tue.nl/
Results

• Establishing
  – of a heterogeneous group of potential end users
  – of a network between stakeholders
    • senior centre
    • seniors advisory commitee
    • mobile care providers
    • municipality
    • CEIT
  – Academic and practical contacts to other similar activities across Europe

• Several successfully completed projects
Results (2)

- AAL demo-appartment in the seniors' centre
  - Objectives
    - show room for end users
    - demonstrations of R&D outcomes
    - testing
    - teaching
  - Project team:
    - Seniors' centre
    - municipality
    - CEIT RALTEC
    - mobile care providers
    - enterprises
Lessons learned

• Speaking the same language
• Persons of trust
• Recruiting of users
• Top down / bottom up
• Time and effort needed
• Sometimes not possible to involve dedicated target group
• Awareness regarding „living lab“
Conclusion and outlook

• Concrete pragmatic approach of cooperation is a good choice
• Interdisciplinary work
  – Framework for user centered development & evaluation of novel technical solutions for support of elderly and their carers in their daily life
Acknowledgements

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We are grateful for the support given by the city administration.

Our special thanks goes to all the volunteers participating in the LL activities, the team of the Senior Center and the representatives from mobile care organisations for their valuable contributions and support.
Q&A ?

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