



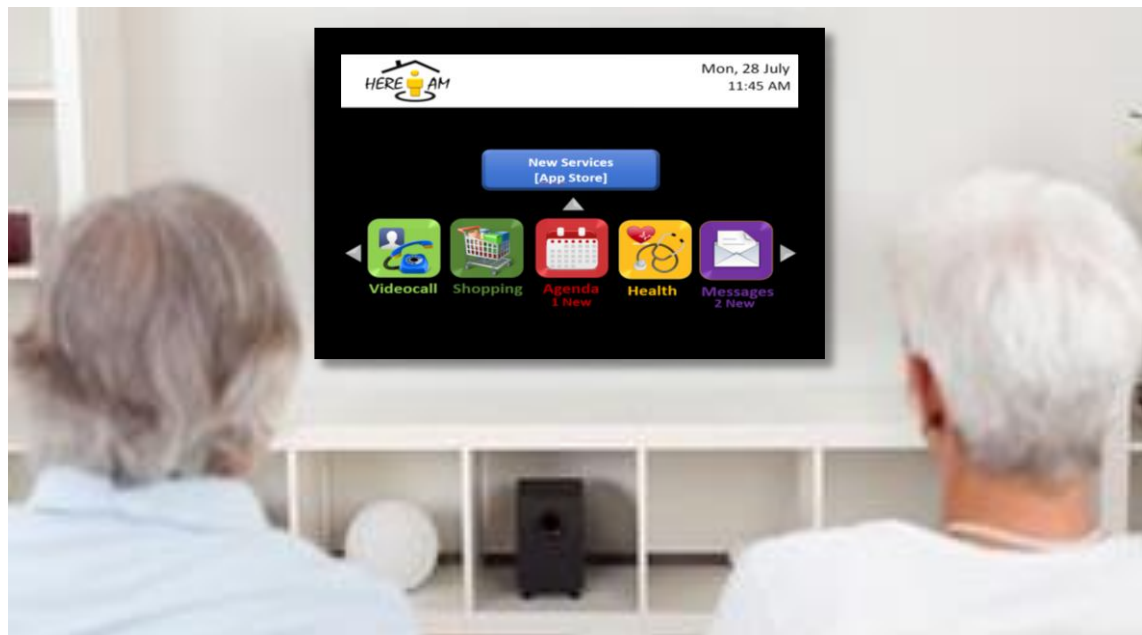
Lessons learned in the Netherlands



# Smart Homes

- **Expert Centre on House Automation and Smart Living**
  - Founded in 1993
  - Eindhoven, the Netherlands
- **Objectives**
  - Stimulating smart, understandable and accessible solutions
  - Gathering knowledge on home automation and smart living
  - Disseminating this knowledge to consumers and professionals
  - Bridging the gap between technology providers and end-users
  - Bringing together supply and demand





**Interoperable TV-platform for self-care, social networking and managing daily activities for older adults at home**

**AAL: July 2013 – June 2016**



# Pioneering...

- **The Netherlands**

- Many innovative projects in the field of eHealth and AAL
- Pioneer role in developing and using service platforms



# Research

## Inventory

- Inventory of the Dutch service platform market

## Providers

- Service platform provider questionnaire
  - To learn more of the rationale
  - To abstract market trends
  - To understand technicalities
  - To gain insight in the future

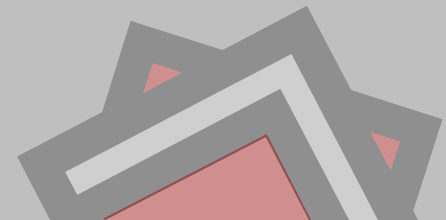
## End-users

- Expert review of the User Interface
- Usability testing with older users



# Research

- **Service platform provider questionnaire**
  - 5 filled-out questionnaires
  - In-depth analysis
- **Findings:**
  - Service platform is ideal solution for clients with no ICT skills at all
  - System is simple, interface is user-friendly
  - Education or training are unnecessary



# Research

- **Trends:**

- Involve the (social) network around the client
- Offer a wide range of services
- Enhance interoperability
- Make your platform accessible on each device
- Take into account age-related changes and individual situations
- Allocate tasks to formal carers, informal carers and volunteers



# Research

- **4 existing service platforms**
- **Expert Review of the UI**
  - Design Heuristics (Nielsen)
- **Usability testing**
  - 26 older adults (13x NL and 13x BE)
  - Smartest House of the Netherlands





# Research

- **Study Protocol:**

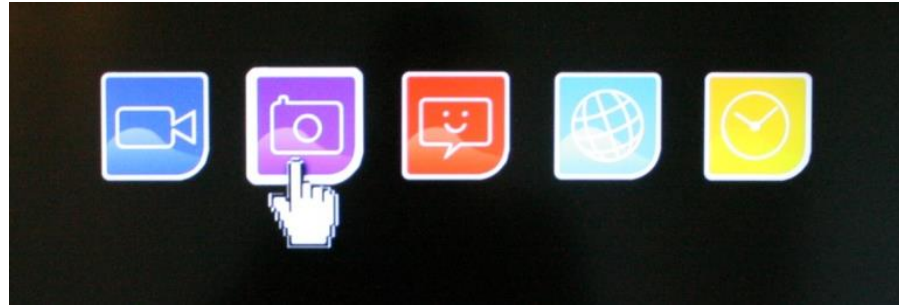
- General user profiling questionnaire
- Participant observation and comments
- IBM usability questionnaire
- Focus group on general impression, added value, preferred technology, and desirable services and features.

- **Findings:**

- Participants were enthusiastic about the functionality of the systems and about the added value a service platform could offer them.
- For some people, it was rather difficult to use the systems, but the majority of participant did manage quite well.



# Examples



# Examples

- Icon 1:
  - Video camera: movies
  - Webcam: video calls
  - Speaker: music
  - Medicine bottle
  - Projector



# Examples

- Icon 2
  - Photo
  - Radio
  - TV-screen
  - Grocery shopping
  - Brief case



# Examples



# Examples

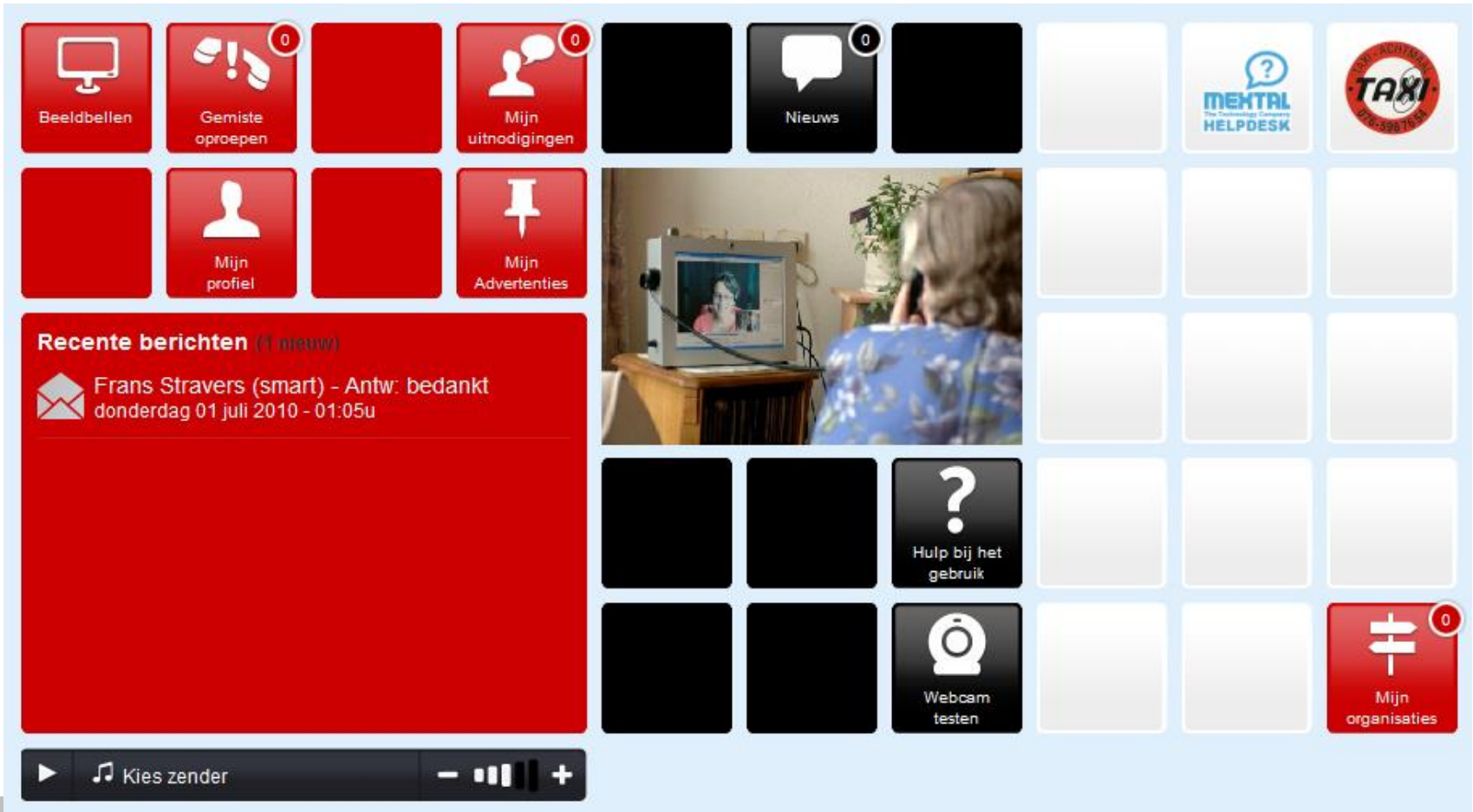
- Back- button 



# Examples



# Examples



The screenshot displays a smart home dashboard with a light blue background. On the left, there is a vertical column of red buttons: 'Beeldbellen', 'Gemiste oproepen' (with a '0' notification), 'Mijn uitnodigingen' (with a '0' notification), 'Mijn profiel', and 'Mijn Advertenties'. Below these is a red 'Recente berichten (1 nieuw)' section containing an email notification from 'Frans Stravers (smart) - Antw: bedankt' dated 'donderdag 01 juli 2010 - 01:05u'. To the right of the buttons is a central video feed showing a person at a computer. Further right is a grid of white buttons, some of which are disabled. Below the video feed are two rows of black buttons: 'Hulp bij het gebruik' (with a question mark icon) and 'Webcam testen' (with a camera icon). At the bottom right of the grid is a red button for 'Mijn organisaties' (with a '0' notification). At the bottom left, there is a black control bar with a play button, a music note icon, and the text 'Kies zender', followed by volume control icons.





# Outcomes

- **Focus Groups:**

- Majority enthusiastic, surprised about their abilities
- Variation reported about the user-friendliness of the different platforms
- Stigmatizing – combine with enjoyable and attractive services
- Flexibility in quantity and complexity
- Wide variety of services

- **Stakeholders:**

- Older users, organizations, communities and entrepreneurs see added value in this new medium.
- Healthcare professionals are a bit reluctant. For them the available data and functionality seem to be insufficient.



# Conclusions

The study provided an overview of the strengths and weaknesses of the service platform market.

- Technology providers and older adults tend to move closer to each other, leading to an increase in user-friendly products.
- Alignment of secondary and tertiary stakeholders is crucial for future valorisation. (e.g. health care professionals)
- Easy to have everything in one place, but the question is whether older users are able to handle the quantity and complexity.
- The platform, (third party) components and (external) services needs to be consistent, in terms of design and interaction.
- Continuous alertness and fine-tuning are crucial to bring AAL to a success



**Thank you for your attention!**

## **Smart Homes**

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