eWare

“Early Warning (by lifestyle monitoring) Accompanies Robotics Excellence”
Lessons learned

• PoC demonstrated potential
• Not all participants needed full system
• Need more development (incl. implementation)
• Faster sensor signal without delay
• Potential in connecting existing solutions
Current status

• Business case is being validated by Vilans
• Pandemic has slowed the development eWare
• Implementation strategy: start with one, add other
• Tinybots system for more integrations
### DMNTOIA

#### Cognitive decline
- Dependent on others
- 24h guidance needed

#### Tessa (current version)

<table>
<thead>
<tr>
<th>GLOBAL DETERIORATION SCALE (GDS):</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>stage 1</strong></td>
</tr>
<tr>
<td>(N/A)</td>
</tr>
<tr>
<td>no dementia</td>
</tr>
</tbody>
</table>

**SYMPTOMS:**
- Normal functioning
- Forgetfulness
- Slight difficulty concentrating
- Increased forgetfulness
- Difficulty concentrating
- Short-term memory decline
- Difficulty completing tasks
- Socialisation problems
- Increased forgetfulness
- Difficulty concentrating
- Short-term memory decline
- Difficulty completing tasks
- Socialisation problems
- Loss of time & place orientation
- Long-term memory decline
- Personality & emotional changes
- Anxiety
- Delusions
- Difficulty with speaking
- Severe loss of memory
- Loss of motor skills
- Require help with most activities

**SUPPORT NEEDED:**
- No support needed
- Support daily management
  - Daily structure
  - Occasional reminders
- Support self-reliance
  - Daily structure
  - Occasional reminders
  - Social cues
  - Regulate eating & drinking habits
  - Medicine management
  - Personal hygiene
  - Daily monitoring of well-being
- Support self-management
  - Increased need for daily structure
  - Regular reminders
  - Social cues
  - Regulate eating & drinking habits
  - Medicine management
  - Personal hygiene
  - Daily monitoring of well-being
  - Physical health
  - Verbal guidance ADL’s
  - Advanced intention & speech recognition
  - Emotional support
  - Comforting and sensory stimulation
    - Play favorite music at schedule
    - Reminiscence of past memories and life stories
    - Connection with family
100+ organizations (NL)

1500+ Tessa robots sold

160,000+ days of user datapoint of effective interventions

3+ year database of long term interaction

*Profitable business and reimbursement by insurers in the Netherlands*
More implementation during 2020, technology is even more relevant during the pandemic...
Artificial Intelligence:
Recommends interventions

User generated scripts:
Shared on platform
Database for training model

Elementary script-blocks:
Intuitive to build interventions

[ NEXT STEP ]
**Technology**

- Better interventions recommended
- Evolves with user needs
- Accelerate product adoption

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### GLOBAL DETERIORATION SCALE (GDS):

<table>
<thead>
<tr>
<th>Stage</th>
<th>Duration</th>
<th>Symptom Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stage 1</td>
<td>N/A</td>
<td>No dementia</td>
</tr>
<tr>
<td>Stage 2</td>
<td>(unknown)</td>
<td>MCI</td>
</tr>
<tr>
<td>Stage 3</td>
<td>(2 - 7 years)</td>
<td>Early stage dementia</td>
</tr>
<tr>
<td>Stage 4</td>
<td>(2 years)</td>
<td>Increased forgetfulness, Difficulty concentrating, Short-term memory decline, Difficulty completing tasks, Socialisation problems</td>
</tr>
<tr>
<td>Stage 5</td>
<td>(1.5 years)</td>
<td>Mid stage dementia</td>
</tr>
<tr>
<td>Stage 6</td>
<td>(2.5 years)</td>
<td>Increased forgetfulness, Difficulty concentrating, Short-term memory decline, Difficulty completing tasks, Socialisation problems, Loss of time &amp; place orientation, Long-term memory decline, Personality &amp; emotional changes, Anxiety, Delusions, Difficulty with speaking</td>
</tr>
<tr>
<td>Stage 7</td>
<td>(1.5 - 2.5 years)</td>
<td>Late stage dementia</td>
</tr>
</tbody>
</table>

**Symptoms:**

- Normal functioning
- Slight difficulty concentrating
- Increased forgetfulness
- Difficulty concentrating
- Short-term memory decline
- Difficulty completing tasks
- Socialisation problems
- Loss of time & place orientation
- Long-term memory decline
- Personality & emotional changes
- Anxiety
- Delusions
- Difficulty with speaking

**Support Needed:**

- No support needed
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  - Social cues
- Support self-reliance
  - Daily structure
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  - Social cues
- Support self-management
  - Increased need for daily structure
  - Regular reminders
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- Comforting and sensory stimulation
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  - Reminiscence of past memories and life stories
  - Connection with family

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**Tessa 2.0 (SK.ai)**

**Tessa (current version)**

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**SK.ai**
"With Tessa I regain autonomy and can live in my own home."
Thuishulp: boodschappen
Dinsdag 23 mei 2017
11:00
Relevant tot: 11:15

Herhalen
11:05 / 11:10 / 11:15
dl - voor onbepaalde tijd

Tessa zegt
Goedemorgen Annie. Het is bijna kwart voor 11. Rita van de thuishulp komt over een half uurtje langs. Heeft u al uw boodschappenlijstje geschreven?
“I can do more by myself and feel less of burden to my family.”

“My client is happier, and don’t need me in the morning for medication and personal hygiene.”

“As his sister, I feel more relieved that he is doing well. I receive less stress calls about things he forgot or went wrong.”

- Substitute homecare tasks
- Help to provide the required care (despite personnel shortage)
- Avoid complications
* Measured at beginning and after 2 months and 6 months. Lasting effect.
Voice interaction & verbal guidance

- Feel more independent
  - Improved wellbeing
- More confident

Via app delegating tasks & monitoring if tasks are done

- Relieve workload, stress and conflicts
  - Higher personalised quality of care
  - Availability of support
  - Job satisfaction

- Reduced need for professional care
  - Reduce costs & alternative solution for shortage of healthcare professionals

Patients

Informal Caregivers

Healthcare Professionals
**Core activities**
- Software & AI development
- Business & market development

**Customers**

**Healthcare Organizations**

**Pains**
- Insufficient personnel.
- Increase patients with dementia.
- Shift to more homecare.

**Tinybots**

Cloud System

€365 (p.a. subscription)

€275 (once)
Business Model

Tinybots

Core activities
- Software & AI development
- Business & market development

Cloud System
€365 (p.a. subscription)

CUSTOMERS

Healthcare Organizations

HEALTHCARE ORGANIZATIONS

Substitute
1-2 h/week

Support patients, reduce needs for professional care

END-USERS

Patients

Informal Caregivers

Pains
- Insufficient personnel.
- Increase patients with dementia.
- Shift to more homecare.
Tinybots

Core activities
- Software & AI development
- Business & market development

Temporary operations
- Implementation support to enter the market.
- Hardware production

Implementation
- €4k - 10k (project based)

CUSTOMERS

 Customers
- Healthcare organizations
- Substitute 1 - 2 h / week
- Support patients, reduce needs for professional care
- Pains
  - Insufficient personnel.
  - Increase patients with dementia.
  - Shift to more homecare.

END-USERS

Patients → Informal caregivers
**TinyBots**

- **Core activities**
  - Software & AI development
  - Business & market development

- **Temporary operations**
  - Implementation support to enter the market.
  - Hardware production

**CUSTOMERS**

- **Healthcare Organizations**
  - **Substitute 1 - 2 h / week**
  - Support patients, reduce needs for professional care

  - **Pains**
    - Insufficient personnel.
    - Increase patients with dementia.
    - Shift to more homecare.

  - **Implementation**
    - €4k - 10k (project based)

**END-USERS**

- **Patients**
- **Informal Caregivers**

**Financials**

- **Core activity**
  - €365 (p.a. subscription)
  - €275 (once)

- **Gross margin on subscriptions**
  - 80+% Gross margin on subscriptions

- **Cost of personnel**
  - €50 - 70 ph.
  - Breakeven saving 15 min/week.

- **Acceptance**
  - 60% accepts
  - 90% improvements
  - Use 6 - 36 month
[ BUSINESS MODEL ]

HEALTHCARE AUTHORITIES

Reimbursement
Accelerates adoption in the market

CUSTOMERS

HEALTHCARE ORGANIZATIONS

END-USERS

Substitute 1 - 2 h / week
Support patients, reduce needs for professional care

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