Assistive Technologies
Part 2

How can advances in Technology assist user needs?

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Technology as an Enabler?

- **‘Everyday’ Technology**
  - Meeting user needs

- **‘Emerging’ Technology**
  - Research
  - Push Effect
    - High risk enabling new solutions

- **New Technology**
  - New Applications
  - Pull Effect
    - Driven by user requirements and mature solutions
Case Study 2

The use of emerging healthcare technologies
Areas of Cognitive Reinforcement

- CogKnow aims to:
  - help ageing people with early dementia to experience greater autonomy and feelings of empowerment, and to enjoy an enhanced quality of life.
- We are aiming to address cognitive reinforcement in four main areas according to the needs identified by dementia sufferers and their carers (Droes, 2006).

Reference: Van der Roest et al. International Psychogeriatrics, 2007 (FRUX-project)
CogKnow – Version 1 Prototype

Helping to remember

Enhanced feelings of safety

Maintaining social contact

Perform daily life activities

Find Tuesday 16th October 2007 14:34 afternoon
Day Navigator

Help

Phone

Music

Radio
# Evaluation of System

<table>
<thead>
<tr>
<th>PwD</th>
<th>Amsterdam (n=5)</th>
<th>Belfast (n=5)</th>
<th>Luleå (n=6)</th>
<th>Total (n=16)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age (mean)</td>
<td>65</td>
<td>71</td>
<td>70</td>
<td>68.4</td>
</tr>
<tr>
<td>Gender</td>
<td>3 female, 2 male</td>
<td>4 female, 1 male</td>
<td>4 female, 2 male</td>
<td>11 female, 5 male</td>
</tr>
<tr>
<td>Civil status</td>
<td>4 married, 1 other</td>
<td>3 married, 2 other</td>
<td>5 married, 1 other</td>
<td>12 married, 4 other</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Carer</th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Age (mean)</td>
<td>59</td>
<td>64</td>
<td>59</td>
<td>60.5</td>
</tr>
<tr>
<td>Gender</td>
<td>2 male, 3 female</td>
<td>3 male, 2 female</td>
<td>4 male, 2 female</td>
<td>9 male, 7 female</td>
</tr>
<tr>
<td>Relation</td>
<td>4 spouse, 1 other</td>
<td>3 spouse, 2 other</td>
<td>4 spouse, 2 other</td>
<td>11 spouse, 4 other</td>
</tr>
</tbody>
</table>
## Overall evaluation of field test #1

<table>
<thead>
<tr>
<th></th>
<th><strong>Human factor impact</strong></th>
<th><strong>Technical impact</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Overall system</strong></td>
<td>Useful, easy to operate, easy to understand, Interaction with touch screen was problematic</td>
<td>Problem with sensitivity of touch screen, Cogknow server reliable, stationary device stable, mobile device not stable nor reliable</td>
</tr>
<tr>
<td><strong>Reminding</strong></td>
<td>Reminders where not attuned to personal situation and therefore not always useful, Reminders on mobile too small,</td>
<td>N/A</td>
</tr>
<tr>
<td><strong>Communication</strong></td>
<td>Picture dialing very useful, But too many steps,</td>
<td>Picture dialing was not reliable on mobile device</td>
</tr>
<tr>
<td><strong>Activity</strong></td>
<td>Valued high, easy, Music was not attuned to personal preferences</td>
<td>N/A</td>
</tr>
<tr>
<td><strong>Safety</strong></td>
<td>Could not be tested properly on all sites. Is expected to be useful in the future</td>
<td>The door sensor was not reliable on all sites and had integration problems with the system</td>
</tr>
</tbody>
</table>
Personalisation of service delivery

Personalisation of reminders

Personalisation Of services
The approach to be adopted is based on three cycles. Each cycle involves the development and evaluation of technical prototypes following a user-centred design process. The evaluation from each cycle is used for ensuing developments.
Summary

- Although a lot of effort has been focused in this area, only small scale deployment and proof of concept systems are in existence.
- In addition, solutions have been stand alone and non interoperable.
- New Business Models are required.
- Increase functionality, decrease issues surrounding usability.

- Efforts should be directed towards:
  - Understanding the real needs of users
  - Developing personalised and adaptive solutions
  - Managing practical issues of technology failure
  - Integration with existing healthcare practice
  - Validating technology with larger cohorts
  - Streamline the installation process
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