

Potholes in effective use of innovative technology in elderly care

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Special Session 2: Innovation, Product Development and Technologies

Background of the presentation: Research and development projects in Finland

- Empirical research in several large research and development projects:
 - "Safety and communication services in the living environment of an elderly person", 2001–2004, nation-wide
 - "Customer service work and gerontechnology: A human impact assessment", 2005–2007, nation-wide
 - "Good living at home of the elderly: A productivity improvement project for municipalities", 2005–2007, regional
 - "Smart homes pilot", 2007–2008, regional



Objectives and viewpoints of the research

- The objective was to search for and solve problems and contradictions in the relationship between human-centred care and technology
- Research environments: sheltered accommodation and elderly people's home care
- Gerontechnology = research, development and implementation of particular technologies for the benefit of elderly people (e.g., safety alarm systems)
- Other types of technology related to elderly care were also investigated: customer information systems, computers, camera supervision, GP navigators...



Research materials

- Some 170 interviews with Finnish care workers in the different projects
- Survey data (questionnaires)
- Impact assessment processes on technology use
- Other research-based development work: thematic workshops, mapping of work processes, etc.

Roles of gerontechnology

- Preventing problems
- Emphasizing and utilizing strengths
- Compensating for weakening abilities
- Supporting care work
- Furthering research

Methods: Human Impact Assessment (HuIA)

HUMAN

= (A group of) people targeted by a decision, plan or action (or indirectly affected by it)

IMPACT

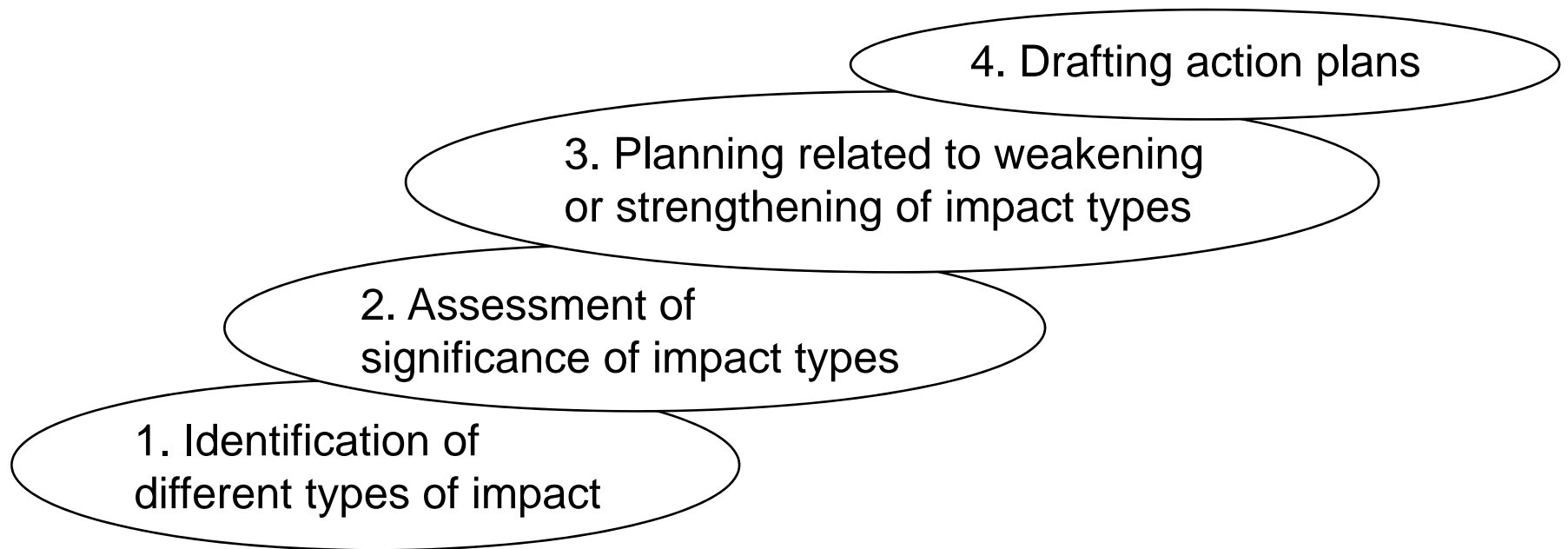
= A decision always affects something (for instance, impact on health, well-being and work processes)

ASSESSMENT

= Assessment produces information that can be applied to support decision-making and development efforts



An impact assessment process



Technology use has many impacts

- Many impacts on elderly people, their near relatives, care workers and organizations – but these are often overlooked
- With the help of impact assessments, positive, negative and neutral impacts of technology use are identified
- Coping at home and at work may be enhanced through empowerment and a positive assessment culture
- Systematic impact assessments
 - bring forth different viewpoints in a thorough manner
 - make it easier to weaken negative effects and strengthen positive ones
 - no right or wrong answers



An example of technology that was focused on in our projects

- A high-tech well-being wristband is a Finnish invention
- It automatically monitors 24 hours a day the user's activity level by measuring micro and macro movement, skin temperature and skin conductivity
- Manual and automatic alarms



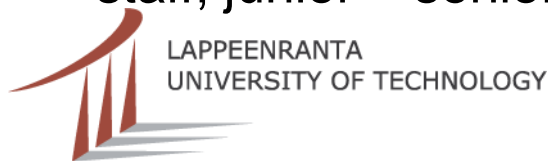
Impacts of technology use on elderly people's life at home or in sheltered accommodation

- Technology may cause inequality and substitute human relationships
- Prejudice and fear = need for time and encouragement
- Technology must be tailored to the user in question; impacts are individual
- A motivating factor: increases accessibility; helps to maintain health and activity
- Need for orientation into use, reminding about use and follow-up of use and related conditions
- It is vital to understand the whole of life; technology does not help as a separate "island"



Impacts of technology use on elderly care work and care workers

- Conflicts and disagreements, prejudice and fear = need for time and encouragement (lack of thorough orientation = long-term negative consequences)
- Loss of resources or financial savings
- Increase or decrease of haste and coping at work
- An increased amount of information on customers
- A motivating factor (work becomes visible in a new way; image of the workplace changes)
- Meaning of technology must be understood as part of work processes (not a separate "island")
- Individual or group-related differences (e.g., short-term – permanent staff, junior – senior staff, women – men)



Impacts of technology use on near relatives of elderly people

- Ignorance and prejudice =
 - need for provision of general information and orientation
 - need for assistance and support in acquisition, use and follow-up of technology use of their close ones
- Understanding needed in order to avoid giving inappropriate technology to a person who suffers from dementia or other memory problems
- Understanding needed concerning 'opportunity costs' of expensive technology from the point of view of the elderly person
- Attention to human relationships – how technology use can support them, not substitute them



Impacts of technology use on service systems and decision-makers

- Needs for
 - novel competences and new knowledge (e.g., competence to give guidance in technology use and competence to assess impacts)
 - network management skills (service networks consisting of the public, private and non-governmental third sectors)
 - process management skills (e.g., acquisition, introduction, orientation and follow-up processes) and change management skills (e.g., common rules of the workplace with regard to technology use)
 - information and knowledge management skills (increase in information on the elderly person and other types of information – who handles it; how; where, and when?)
- Loss of resources or financial savings



Six potholes in effective technology use (1/2)

1. **Impact assessments** on technology use are missing although they should form part of development of service quality
2. Lack of awareness concerning the need for **competent and tailored orientation into technology use** (including elderly people, their near relatives, care work community – and the service network, where appropriate)
3. Insufficient consideration of **aims, ethical issues and acceptability of technology** (attitudes of different people)

Six potholes in effective technology use (2/2)

4. **Awareness-raising needed among decision-makers** concerning elderly care, technology use in it and impacts of technology use
5. **Public discussion on technology use is black-and-white** (negative – positive), although it should cover 'all colours' (different users, needs and aims of use)
6. Suitability of technology for all age groups – **Design for All thinking** should be encouraged and **users' views** taken into account in technology development (not just those of "experts" and young users)



Technology use is collaboration



Thank you!