How technology can support the ageing society

In brief

- The world's population is ageing rapidly: in 2050, there will be three times as many people over the age of eighty than today.
- Consequently, the demand for care and social services will rise. Meanwhile, disposable resources will decrease: social and healthcare budgets are shrinking as is the number of skilled personnel.
- Great hope is projected on technology to support solutions for these challenges. But how do we need to shape technology in order to really support the elderly and meet their needs?

What is it about?

This should be great news: a person born today has the highest life expectancy ever in Austria and will remain healthier for longer, at least statistically speaking. But increasingly questions such as these blur the picture: Will everybody be able to afford good healthcare in the future? Will pensions still be financially secure?

Increasing life expectancy, the large post-war birth cohorts (baby boomers) and sharply decreasing birth rates by the end of the 1960s are considered to be the main causes for Europe's ageing population. It is estimated that by 2030 every third inhabitant in Austria will be over sixty; at present it is every fifth. A significant increase in birth rates could mitigate this problem, but is currently not in sight. Therefore, the probability of seeing a sharp increase in demand for healthcare and social services will increase. At the same time, many people demand more individuality, more patient-centred

treatments as well as more inclusion regarding medical decisions. Expectations are rising, but today care workers are often already at their limits. Furthermore, a lack of skilled personnel adds to the pressure. Immigration can only partially compensate for this deficit. In addition, a large part of the care work is being undertaken informally and to a large extend by female family members. However, by 2030 the employment rate for women is expected to rise by another 20 per cent which is going to aggravate the situation.

Yet another area of conflict stems from the mechanisation of other economic sectors: productivity is generally boosted when technology replaces human labour. On the other hand, many thereby expect increasing unemployment. Could a rising demand for care and social services therefore present opportunities for the unemployed? However, this would require significant investments into training and education of providers of social service and care.
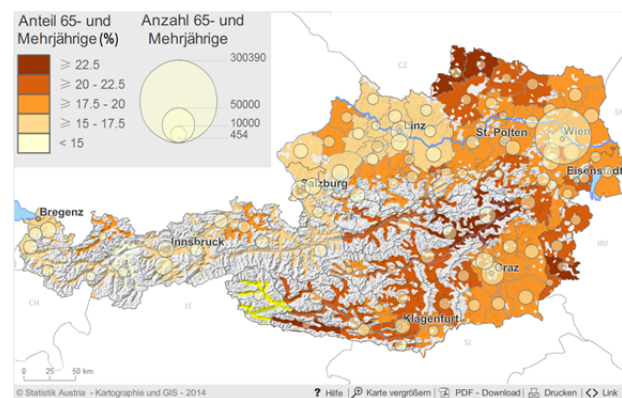
In 2030, one third will be older than 65, today it is every fifth person

Another problem: besides already decreasing social networks of older people, limited mobility can aggravate their isolation. Taking part in social life is, however, a key element of a high quality of life for many people.

Great hope is projected on technology to support solutions for all these challenges. Gadgets such as computers, smartphones or tablets are already widely used today and are thought to play an important role in the lives of tomorrow's elderly population. Sensors in carpets to detect falls, hotplates that switch off automatically or video surveillance and communication tools are already well established products of technology-assisted living. Care-providing robots and implants that monitor and improve body functions are about to be put to broad use, with developers of technology working hard on their readiness for a broad market.

Basic data

Technology – built on needs

There are many possibilities to help elderly people to live longer in their own home and to retain a certain independency. To mention just a few: security technologies such as emergency buttons worn on the wrist or around one's neck as well as different kinds of automatic household appliances.

If technology is to support the ageing society, it has to be responsive to the needs of the elderly. It is therefore crucial to find out which routines and scenarios need to be considered already during a product's development.

The use of assistive technologies often alters social routines and organisational structures. If developers ignore this fact and merely focus on economic aspects, it is likely that unforeseen problems will arise during their daily use. Moreover, it is often not the users themselves who decide on the technological refitting of their home, but others such as e.g. family members or insurance companies. In addition, care providers or hospitals may not primarily base their decision of purchasing new technologies on criteria such as usability or protection of privacy.

Human needs at the focus of technology development

The question of what the use of technology might actually mean for elderly people, patients or other persons concerned is often raised very late. At this point, options for technical modifications and adaptations are few. Often, problems or ethical concerns only appear when products are already in use: think about camera surveillance in private bathrooms.

Additionally, personal needs and concerns can vary greatly. Consequently, developers of technology have to find out as much and as early as possible about the circumstances under which their products are used.

However, another fundamental question remains important: how to use technological support in a way that fosters *human* care activities and interaction instead of replacing it.

What to do?

Developing and designing technologies should always be a mutual learning process involving different actors and displaying numerous feedback loops. Assistive technologies should enhance and facilitate social and organisational processes. It is then that they can support sustainable long-term solutions for the challenges of an ageing society.

- Publicly funded and private technology development needs to consider fundamental individual and societal values. Engaging all persons concerned, stakeholders and experts at an early point as well as having a direct reference to the EU Charta of Fundamental Rights are essential ingredients.

- Research on and an assessment of the effects of care and assistive technologies as well as their contribution to comply with the needs of the persons concerned need to be supported and funded.

- There is special potential in technologies and social innovations which support care and assistance at home or in collective dwelling forms (e.g. mixed-aged or assisted living) requiring large numbers of staff. As a result, unwanted social isolation can be prevented.

- The protection of privacy must be a standard requirement when developing technologies. Here, anticipatory legal groundwork is needed in order to avoid potential misuse of new technologies.

Further reading

Dimitriou, D.; Mantovani, E.; McGee, S.; Mordini, E.; Turnheim, B. (2014) Incorporating ethical considerations in EU policy on ICT for Ageing. VALUE AGEING WP7 – Governance Issues and Policy Options
www.value-ageing.eu/outputs/deliverables/

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