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The Future of Aging in Upper Austria: Active and Assisted Living in a Rural Region

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Authors: Manuela Kienegger manuela.kienegger@ait.ac.at
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Purpose

The foresight study aimed at exploring what technological solutions and social innovations for ambient assisted living (AAL) can offer widest coverage in a demographically-challenged rural area such as the Mühlviertler Alm (Upper Austria). To increase the acceptance of the identified findings among the local population and the success of the implementation of the AAL solutions in a potential follow-up project (e.g. as a model test region), strong emphasis was put on the integration of potential users and other stakeholders throughout the whole study.

Active and Assisted Living (AAL): Intelligent Technologies for the Elderly

The social foresight was part of the project “WEGE2025: Our ways to an age-appropriate region 2025 – Living independently in the Mühlviertel” as part of the Austrian national funding programme “ICT of the Future: benefit - Demographic change as a chance” (project no. 846222).

For the last decades life expectancy has been increasing continuously throughout Europe due to improvements in life conditions and healthcare. Meanwhile, the share of elderly people (aged 65 and over) among the total population has reached an average of 18.5% across the EU-28 and 18.3% in Austria (EUROSTAT 2015). For 2050, it is expected that these numbers will double. This demographic change often goes along with changing family structures (e.g. reduced family sizes with fewer potential family carers for the older people at hand) and limited numbers of available local care facilities. Consequently, new and innovative solutions are necessary to ensure an independent living of the elderly in their own home for as long as possible.

Intelligent technical solutions have a huge potential to meet the upcoming healthcare challenges of aging societies and become an important pillar in the personal healthcare and care of elderly people in the years to come. Active and Assisted Living (AAL), an emerging multi-disciplinary field, specifically aims at providing technical aids and technology-assisted services to the elderly as well as care givers by exploiting information and communication technologies (ICT). However, the overall success and acceptance of AAL systems in practice will crucially depend on how well the new technological solutions can address the needs of the elderly and maintain or improve their quality of life. Therefore, it is vital to know the specific needs of the elderly in their respective living environments and how innovative solutions can be tailored to both the needs and the living environment.

AAL in a rural region

So far, AAL solutions have mainly been developed for users with a focus on specific indications, independent of their place of residence and hardly ever for an entire region. In particular, for rural areas there are hardly any visions on how to improve the attractiveness of the region for an independent life for senior citizens and their



needs in their third and fourth phases of life. Rural areas and the people that are growing old there have to cope particularly with the rural depopulation of young people and are confronted with a general decrease in public utility infrastructure.

Mühlviertler Alm

The Mühlviertler Alm is an association of ten municipal communities situated in the north-east of Upper Austria. Agriculture is the predominant economic sector. Each community consists of between ten and 20 villages, each of which consists of a densely populated village centre as well as numerous individual, scattered farmsteads far from the village centres. Consequently, the region is characterised by long supply routes and require high mobility in the daily life of the residents.

The Mühlviertler Alm is currently undergoing a process of demographic change. An increasing number of elderly people is opposed to a decreasing share of younger people. The highest pressure is expected in the coming decades when the baby-boom generation

retires. At the moment, about 18.000 people live in the region Mühlviertler Alm. Some 4.000 of them are already older than 60 years. Until 2030, it is expected that this number will rise by 50%.

Active and independent aging is an important topic in the region. Since 2010, the communities have been actively facing the demographic change with local projects. They consider the demographic change a chance for a new social interaction.

Aiming to Become Model of the Future

The project WEGE2025 analysed what AAL solutions can offer the widest coverage in a rural area such as the Mühlviertler Alm. The major question was therefore what AAL technologies and social innovations can be implemented for a maximum of end-users and will also be applied by secondary users, such as managed care organisations.

As a result of the project, the region Mühlviertler Alm is expected to become a model for the future development of a test region for active and assisted living solutions.

Exploring the Potential for AAL in a Rural Region

A major focus of the project was on the methods used for the exploration of AAL test regions. While ongoing test region projects in Austrian are mainly technologically driven, the WEGE2025 project pursued an interactive stakeholder approach. Within a comprehensive future-oriented stakeholder process, both project partners, AIT and Verband Mühlviertler Alm, together with some 100 stakeholders (end users, medical staff, and providers of services in the general interest and other stakeholders) from the region worked together to explore future needs for an attractive life during old age and to assess by means of scenarios, a roadmap and a vision of the future the potential for implementation of the suggested solutions in real life. The interactive approach included personal interviews and large group settings (workshops) with stakeholders and was preceded by a qualitative background research.

This project provided the unique opportunity to include a whole region in the preparation for a test region and to make allowance for the needs and views of their residents on active and independent living and aging. This approach should increase the success and the participation rate in the follow-up test region.

Exploring the Framework Conditions of the Region

A series of qualitative interviews with 15 residents of the Mühlviertler Alm working either professionally or as

volunteers in healthcare and care for the elderly were made to explore the framework conditions and major needs of the region. The interviewees highlighted the following key challenges of the region Mühlviertler Alm:

- Peripheral geographic location
- Demographic change
- Lack of awareness of the aging
- Increasing number of people suffering from dementia
- Increasing professional activity by all family member (resulting in a lack of family member carers)
- Increasing need for new forms of neighbourly help
- Lack of social activities for people with physical impairment
- Decrease in the public transport
- Lack of comprehensive provision of medical care (e.g. medical specialists)
- Lack of available places in institutional care and support facilities
- Lack of a network of providers of care and nursing institutions
- Lack of a central contact point for information (e.g. regarding healthcare and other care)

With respect to the potential implementation of AAL solutions in the region, the interviewees expressed reservations as regards technologies in general and pointed out the lack of suitable infrastructure (e.g. poor mobile phone coverage, lack of access to high-speed broadband services).



Future-Oriented Stakeholder Process

To identify the needs of the elderly in the region and to define the requirements for AAL solutions, a foresight exercise was implemented. In four workshops, potential end-users, representatives of companies, for services of general interest, and research organisations discussed together what it needs to be able to lead an independent and age-appropriate life in a rural region such as the Mühlviertler Alm.

Stakeholder Workshop I – Visioning

In this workshop the participants worked on the megatrends of the future and developed a common vision 2050 of the Mühlviertler Alm. Megatrends are influential, global developments with long-term effects, which can change the future and should therefore be considered in strategy and policy development processes. Among the megatrends discussed in the project were climate change, demographic change (aging), social and cultural inequalities, urbanization, digital culture and knowledge-based economy. Guided by these megatrends, relevant external factors (drivers), which impact the living at Mühlviertler Alm were discussed for five areas: social, technological, economical, environmental and political developments (STEEP factors), and the most important influencing factors were identified. The findings were summarised in seven fields of actions:

- Autonomy and health
- Occupation, education and recreation
- Communication (social, ICT)
- Accommodation and public space
- Mobility
- Infrastructure (traffic, energy and ICT)
- Environment and resources

For the development of a common vision of the Mühlviertler Alm for 2050, the workshop participants worked in small groups on the fields of action as well as on additional “disaster” fields of action and drew together representative pictures. In follow-up discussions, objectives were derived for each field of action and prioritised. A visual facilitator compiled the most important objectives in a new picture, which now depicted the common vision 2050 for the Mühlviertler Alm.

As a preparation for the second workshop, small groups developed three different types of scenarios: a) business as usual, b) sustainability, and c) disaster. To anchor the scenarios in daily routine activities the groups built their scenarios around a selection of different personas:

- 35-year old top manager and mother of a handicapped child
- 87-year old, wealthy widow
- 53-year old, nursing male relative
- 24-year old, female student in Cambridge

The project team subsequently added to the scenarios the trends and drivers that had been previously identified by the workshop participants.

Stakeholder Workshop II – Scenarios and Roadmap

Some volunteers among the workshop participants worked out the central turning points of each of the scenarios and presented them by means of improvisation theatre to the plenary audience.

Based on the visual and emotional impressions that the theatre play created in the audience, further objectives were derived and discussed within the frame of four key topics: health awareness, services of general interest & coordination office, diversity & inclusion and change process (politics & infrastructure).

As a result, for each key topic up to three main objectives were selected. The necessary actions for their implementation were defined and the most relevant actors singled out. These sets of measures were placed along a timeline and compiled to a roadmap according to the estimated time of implementation.

Stakeholder Workshops III & IV – Services & Action Plan

During an evening event the roadmap was presented to and discussed with regional service providers and other economic operators in order to add practical ideas for AAL solutions in the following areas: social interaction, information & education, occupation, mobility, health & wellness, hobbies, care at home, supply of everyday consumer goods & support with household tasks, and safety & privacy. Ultimately, four key topics could be identified as the core topics of Mühlviertler Alm:

- Mobility
- Social inclusion
- Health incl. telemedicine
- Comfort & living

In the fourth stakeholder workshop these topics were taken up and defined more specifically concerning objectives and contents in action plans. By means of “collaborative mapping” all relevant services and actors of the region that could be relevant for a follow-up project were gathered and visualized on a map.



Approaching the Needs of the Elderly

Mobility

Remaining mobile even in old age is of uttermost importance in rural areas that are characterised by long-distance ways for daily routines. Mobility is often also a prerequisite for social inclusion of old and impaired people and participation in social life. There is a need for a wide variety of individual transport for elderly and impaired people. Transport services need to be flexible in terms of booking services and availability, e.g. with short waiting times. Building up a network of transport service providers is therefore essential. Information on the availability of barrier-free busses, their timetables and existing boarding aids and wheelchair accessibility on vehicles as well as shared taxis for quick and flexible trips (e.g. to physicians or for leisure time activities) could be provided via mobile apps and ICT-supported lift-sharing exchange. All offers could also be collected on a simple internet platform for mobility offers.

Social Inclusion: Information Platform & Coordination Office

The local communities want to have access to and be able to exchange information in the best possible way. For issues concerning care and nursing, a coordination office (e.g. for multi-professional services) would ensure an optimal information transfer to the public, when needed. The office should be located centrally and could also serve as a hub for telemedicine services. A web-based platform could constitute another source of information for the population. It can serve as a market place for supply and demand of various sorts, e.g. meetings for senior citizens, midday meals organised as social events, or other cultural, sportive leisure time activities. Such an events calendar ideally embeds functions for registration for the events as well as for mediation of shared lifts in private cars or shared taxis and buses that offer also transportation of wheelchairs, etc. It can also provide information and booking facilities for mobile care and nursing services, experts

and delivery of goods. A crucial prerequisite for the acceptance of such a platform is the simple operation and intuitive handling of the platform by the users.

Health incl. telemedicine

Establishing structures which ensure the care and medical surveillance / monitoring of health data and alarm functions for threatening deviations is also important for the region. Such structures would particularly help people with chronic diseases to live longer in their own homes. To benefit of telemedicine services it will be important to develop a system that integrates already existing measuring devices such as blood pressure monitors, blood glucose meters or warning devices in case of falls. Simple operation of such telemedicine devices is again the key to widespread use. Tying in with the idea of a coordination office the residents of the region also wish for immediate help in emergency situations. A competent medical phone service with decision-making competency that is available around-the-clock and linked to a medical care network could be based in the coordination office and compensate for physicians off duty.

Comfort & Living

Autonomous living with comprehensive care in one's own home is of major importance in the region. Medical care should be available across the region and flexible enough to cater for the needs of the residents. There is also need for social networks of neighbourly help, including support for household tasks and help in the garden. Supply of everyday goods should be ensured by means of service providers that could be contacted via mobile app. In addition, homes should be "smart" and provide a system of automatic components, such as door openers, automatic night lights, fall alarms, as well as assistance systems for automatic notification of attendants in emergency situations. IT professionals and other service providers should be available in the region to ensure installation, maintenance and repair work when needed.

Sources and References

This foresight brief is based on the final report of the Project WEGE2025.

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