

~~AMBIENT~~

ACTIVE ASSISTED
LIVING

»» A HOLISTIC
VIEW

IMPRINT

owllab e.U. Mag. (FH) Anja Herberth
Anton Gotschgasse 7, 3002 Purkersdorf, Austria
owllab.at

ABOUT OWL LAB

Creating awareness & visibility for new technologies: That is the goal of the owl lab management consultancy. Management: Mag. (FH) Anja Herberth

ABOUT SMARTBUILDINGSCOMPASS

We believe that we will solve our major challenges with the help of technology. Our homes and lives are changing, and end consumers are currently becoming an essential part of the energy transition and climate protection. The SmartBuildingsCompass is dedicated to this change and aims to bring along end consumers in these changes. **www.smartbuildingscompass.com**

OVERVIEW

INTRODUCTION	6
THE INTERVIEW PARTNERS	9
AMBIENT ACTIVE ASSISTANT LIVING: A HOLISTIC VIEW	11
01. AAL products and services: The current status	12
02. The opportunities offered by AAL technologies	14
03. The challenges	16
04. Key criteria and learnings	22
05. Communication, information channels and sources	28
06. Expectations	30
07. Management Summary	34
RECOMMENDED READING AND REFERENCES	39



Photocredits:
Bill Lorenz

INTRODUCTION

Ambient, or rather: Active Assisted Living - this is a term many people are not (yet) familiar with. AAL refers to assistance technologies and concepts that enable people who need support to organise their living space in such a way that they can manage their everyday lives largely without outside help. The aim is to enable people to live as long as possible with a high quality of life and as healthily, independently and autonomously as possible. In care homes and assisted living facilities, these technologies support staff in carrying out their tasks.

People are much more familiar with the shortage of skilled workers in the care sector and its effects than the admittedly unwieldy term AAL: While many people wish to remain living in their own four walls for as long as possible, there will not always be that option in the future. Care will increasingly have to take place at home.

This is because of the currently existing strong pressure on the care system and an imminent care collapse: According to a survey conducted in Germany, smaller care facilities in particular have their backs to the wall.

A lack of staff, rent increases due to inflation and rising interest rates are putting pressure on companies. According to estimates, around 10 to 15 per cent of care professionals have left their profession in recent years. At the same time, the pressure on the care system is increasing due to the retirement of the baby boomer generation. Longer life expectancy and low birth rates mean that the population is getting older in the long run.

In a nutshell: We need to take action now.

The challenges do not await us in the future - they are already here. Many measures and an active approach are needed to avert the impending care collapse. Digitisation and technological developments can help to overcome this social challenge. Some European countries such as Denmark and Sweden are already further ahead than Germany and Austria in this respect.

This market survey analyses the status of AAL technologies in the care sector in Austria and the associated opportunities and challenges. The participants will provide an insight into the lessons learnt from the past and venture a look into the future.

I would like to take this opportunity to thank my interview partners most sincerely for the exciting discussions and for their openness!

P.S.: The figures and data used from other studies and market surveys can be found on the back pages.

Mag. (FH) Anja Herberth

If you have any questions about the study, please contact:

Mag. (FH) Anja Herberth
Management owl lab | Publisher
SmartBuildingsCompass
anja@owl-lab.at
0043 (0) 650 558 03 19
owlab.at | smartbuildingscompass.com



THE INTERVIEW PARTNERS

A total of 30 managing directors and executives from Austria, Germany and European organisations answered the survey questions. They came from the following sectors:

- Professional organisations, NGOs and associations - from Austria, Germany and at EU level,
- Companies (producers, integrators) focussing on AAL and building control/automation,
- Training centres,
- (local) politics,
- AAL experts & project managers,
- Ministries,
- Insurance,
- Wholesale,
- Retirement homes and nursing homes
- and research organisations.

The interviews took place between winter 2022 and early autumn 2023 in person, by telephone or via video calls. The interviewees were guaranteed anonymity.

» FUNCTIONAL, PSYCHOLOGICAL REPRESENTATIVENESS

The results of this market survey represent patterns of attitudes, behaviour and value concepts of people. The statements made by the interviewees describe the mechanisms and systems on the market and are also transferable to companies outside this sample.

This is called psychological representativeness: This means that a qualitative study with a small sample reveals and describes the psychologically effective influencing factors (such as attitudes, expectations, emotions, motives).

*Photocredits:
Shutterstock*

~~AMBIENT~~

ACTIVE ASSISTED
LIVING

»» A HOLISTIC
VIEW

01. AAL PRODUCTS AND SERVICES: THE CURRENT STATUS

At both European and national level, a large number of grants have been awarded for the research and development of AAL solutions. Co-funded by the European Commission and 17 countries with a budget of around EUR 700 million, for example the AAL programme has financed over 300 projects. There were also national research and development programmes, such as the Austrian programme „Benefit“, which should deal with the effects of demographic change.

From comfort solutions, fall detection, automatic cooker switch-off and electronic door viewers to the docking of services: A wide range of solutions were analysed. People should be able to order meals on wheels, open the door for doctors or carers from their tablet. In addition to the end users, related parties - relatives & family, carers - were also integrated into the tests. They were asked which solutions they considered useful, which were actually used - and what might still be missing.

In view of these enormous investments, however, the interviewees' conclusion is sobering: Only individual solutions or concepts for smaller care facilities can be found on the market. Overall solutions for municipalities

and cities that have to coordinate thousands of employees and people in need of care in a large number of facilities and services are not on the market. So what has happened to the money and what are the challenges?

» GO-TO-MARKET MISSING

The research institutions conducted research and developed prototypes - because the funding only provided support up to market maturity. In addition to the research institutions, co-operative projects often have or had industrial partners, local authorities or cities and medical universities on board who, in conjunction with their care service providers, think about the care solutions and processes of tomorrow - including practical tests.

However, the prototype was often the end of the story, as one participant in the survey emphasised: „Taking that next step and taking the risk of going to market and realizing it - no one will attack that. Neither in Austria nor in Germany.“ What happened to the study results? „Once one study was finalised, it was put in the drawer and then the next study came along.“ There are the first success stories, but they are few and far between.

”

Taking this next step and taking the risk of going to the market and realizing it – no one will attack that. Neither in Austria nor in Germany.“

„The hype is over“: The funding landscape has changed today, it is no longer „specifically tailored to older people, but more broadly to social challenges“, according to one survey participant. The lines of tender are now orientated towards sustainability, environmental and climate damage. And for good reason: The energy transition is the largest, most long-term and most expensive project in a united Europe. This shift in the funding landscape, which can be seen at both European and Austrian level, is also confirmed by other experts.

Following the termination of specific AAL funding programmes, there are now follow-up projects in Austria that focus on the transformation of the care and healthcare system. However, they are person-centred, as one participant explains, and not system-centred. Funding now falls under the „Digital technologies for people and society“ priority. In addition, the „care challenges“, from which individual projects are now emerging, were conducted as part of a survey of the federal states.

”

Consumers will have to dig into their pockets for the time being.“

This development is viewed negatively by some interviewees: „You are competing with large companies in other sectors such as pharmaceuticals and the automotive industry in an area where there is little money anyway.“ In addition to critical analyses, one participant also justified this development as a logical step: „The Minister of Health is

responsible for care overall, but it is financed and organised in the federal states.“ This means that the federal states are responsible for the organisation, which is why an overarching, nationwide strategy or concept is not to be expected. He specifies: „This topic must slowly move from technology funding to an application-orientated track.“ He advocates that the development of solutions should now be taken up by the supporting and state organisations. Depending on the federal state, projects are already being implemented, but: „Much more needs to be done here.“

» COVID: DELAYS & GROWING PRESSURE

According to the interviewees, the COVID crisis also delayed projects, while others „fell asleep“. At the same time, the care sector came under increased pressure. The high workload triggered an exodus of care personnel. According to estimates, 10-15 per cent of skilled workers left the sector. However, the protective measures and lockdowns meant that there was a sudden need for telemedicine solutions. It became clear that although there were solutions on the market, further resources were needed to address the target groups and incentivise their use. After all, a technology or system alone cannot achieve a transformation - it takes people to bring these technologies to life.

”

The hype is over“: The funding landscape has changed today, it is no longer „specifically tailored to older people, but more broadly to social challenges.“

02. THE OPPORTUNITIES OFFERED BY AAL TECHNOLOGIES

Photocredit:
Shutterstock

”

We can work as hard as we like: If we have too few skilled workers, we have to let fewer people live with us or maintain this quality through assistance systems.“

» MAINTAINING QUALITY & RELIEVING THE WORKLOAD OF SPECIALISTS

Digital tools improve the efficiency and quality of services in organisations and make the organisation more responsive overall.

There are many examples: Software and app solutions support end users, for example, in maintaining memory or brain performance. Communication solutions support smooth day-to-day care and connect carers and relatives with doctors. In care services, care homes and hospitals, they help to utilise the (still) available resources as usefully as possible. For example, in planning routes for care services; sensors help staff to recognise emergencies and negative developments.

Note: Artificial intelligence will make a wide range of applications possible in the future. According to the interviewees, too little research is still being conducted on this aspect in Austria and Germany.

» JOBS ARE BECOMING MORE ATTRACTIVE

Even if there may be resistance to new systems at first: Once a smart system has been implemented and is in regular use, the feedback from care staff is positive. If these intelligent systems work, employees want to work in these homes, according to the interviewees, as they value the support.

”

There is no escape: We will not get by without AAL.“

» EARLY DETECTION, PREVENTION & STRENGTHENING PERSONAL RESPONSIBILITY

AAL solutions provide better data to track a patient's state of health and intervene immediately in the event of changes. This makes it possible to recognise illnesses before they break out or to treat them right from the start.

Examples: Sensors recognise how often a patient gets up during the night. Or: If scales are docked to AAL systems, weight fluctuations can be easily identified. By getting to the bottom of the reasons, patients can be given

the best possible help in the early stages of an illness. However, this also means that sensitive data is processed. System solutions must be well secured in terms of data protection and high security standards and comply with ethical aspects.

Software solutions can also help to maintain the memory or brain performance of older

people - or, in the case of dementia, to ensure that the disease worsens less quickly. Strengthening personal responsibility and health literacy is essential. In combination with early detection and prevention, this means that we can start earlier than in today's „repair medicine“. As a result, people stay healthy for longer and the pressure on the healthcare system is reduced.



Countries such as Denmark and Sweden have been showing us how for years: They have recognised that their care system will not survive without „welfare technology“. One expert put it in concrete terms: „There are not enough skilled workers, and due to the shortage of workers, organisations have problems finding staff. Even higher wages will not improve this situation.“

Denmark is therefore working on building up a wide range of capacities: Greater personal responsibility and help for self-help, better prevention and screening, early detection of illnesses as early as possible. A wide variety of concepts are increasing the visibility of AAL products on the market in order to help people navigate through the jungle of solutions. Educational institutions train employees in the health & care sector in digital and technological developments. Research institutions such as the Danish Technological Institute are international leaders in the development of health and care solutions. The aim is to improve people's quality of life and enable them to live independently and healthily in their own homes for as long as possible.

03. THE CHALLENGES

Photocredit:
Adobe-Stock

» FROM THE PRODUCT VIEW TO AN ECOSYSTEM APPROACH

Digital products and solutions support people's personal responsibility and independence, they save time and relieve the pressure on staff - the „people affected also get help more quickly.“ However, this requires more than just the introduction of digital products and services.

”

Digital before outpatient before inpatient“

The list of unanswered questions is long: How can the interaction between doctors, carers, therapists and relatives be coordinated, and who is liable? How are these target groups linked together? Which individual stages must be passed through, and at what level of care is inpatient care required? Should it be possible to take the previous solutions with you? And how can those in need of care be supported in this process?

From costs to benefits

During the interviews, these open questions were associated with (high) costs for development and operation. However, the interviewees also emphasised that these technolo-

gies are solutions that lead to savings in the system. In particular, they support and relieve the pressure on the existing staff. Technology is making jobs in organisations more attractive again: There is more time for personal interaction; heavy, physical work is made easier by aids. According to interviewees, the support that can be provided to older people with the help of AAL technologies is „more comprehensive and more fulfilling.“

» „VALLEY OF DEATH“: FINANCING GAPS IN BUSINESS PLANS & SALES & OPERATIONS

According to one participant, we are currently in the „Valley of Death“ - the go-to-market. In the past, subsidies supported projects up to the test phase with prototypes, i.e. up to „market maturity“. Market development was not taken up by the companies for reasons of risk, and essential questions remained unanswered: Who should sell the products? What could cost models look like? And what further training programmes are needed to bring these products and solutions to market sustainably?

Another (cost) point is the regular maintenance and modernisation that needs to be factored in for technologies and smart systems. One participant: „These costs are not

included in the budgets.“ Neither in the budgets of organisations nor in those of end consumers - and here we need a rethink. Regular maintenance is nothing new; because a car or heating system also needs maintenance.

A further funding gap is being opened up by inflation and exploding costs, e.g. in the areas of interest, rent, energy and food: The cost of running care facilities is rising massively, and new builds have been halted due to the rise in construction costs. The care facilities argue that they cannot afford the necessary changes. This means that for stakeholders and target groups, technological development is „ultimately a question of price.“

”

We have a high level of excellence in research and development. But then, as is so often the case, we will fail when it comes to product realisation. Or not play the role that we actually play in the research fields in advance.“

» SYSTEMIC REORGANISATION: HIGH COMPLEXITY & PERSISTENCE EFFECTS

It is about nothing less than the complete reorganisation of the care system: And that is precisely the challenge. The transformation of the care sector affects everyone: „There's no escape, it's a systemic problem.“ This affects both the macro level as a whole, but also the micro level: The individual care facilities & services with their employees, the educational institutions. It requires a holistic approach and mastering the resulting complexity. The structure of the market is cited as a major challenge: „Many care facilities are too small and too conservative to engage with the AAL market.“



Introducing a technology means „tackling the ecosystem, which naturally has a persistence effect - organisationally, financially and in terms of personnel.“ This also means that, in addition to financing the technologies, it is also necessary to promote an affinity for technology and provide service and support in handling and operation. According to the interviewees, education is often already further advanced: Through the academisation of care, and on the basis of the degree courses for care and technology that are already often considered together.

There is a great deal of frustration on the part of companies and NGOs in connection with cooperation with ministries and public authorities: The „policy of simple solutions“ is criticised, which, according to interviewees, is not sufficient to solve the challenges of the future.

» AAL TECHNOLOGIES ARE STILL NOT MATURE ENOUGH FOR LARGE ORGANISATIONS

There are individual solutions on the market for care homes and private individuals, for example. For large municipalities and cities that have to coordinate thousands of employees and people in need of care, there is very little on the market: „We don't have anything that really works.“ And: „We test the few things that are available on the market.“ With several thousand employees and people in need of care, it is not possible to combine many small individual solutions - an overall solution is needed. Those responsible help themselves by screening the market and looking at how other local authorities deal with the challenges in care.

Lack of standards and basic platforms

The lack of compatibility between solutions is also discussed several times: AAL solutions are not standardised - and there is no overarching platform that could be used to control individual solutions with the help of interfaces. One participant: „There are too many individual components that don't communicate with each other.“ There is not always a recognisable willingness on the part of companies or IT: „Start-ups, new or even other technologies are often seen as competition that takes business away from them.“

It is also about configuring or offering interfaces to existing systems: For example, for existing alarm and radio systems. These interfaces must also be guaranteed for tests.

”

We are dealing with a social change here that is long-term and complex. And which cannot be achieved with our current approaches.“

» DIGITAL CARE APPLICATIONS: „GERMANY IS FAR AHEAD OF US“

Which products support self-responsibility and which products are medical devices? In Germany, there are already digital assistants in the list of care products: „Digital health applications“ and „digital care applications“. According to their definition, they „should help people to cope better with everyday care.“ According to the interviewees, this is not the case in Austria: „Germany is way ahead of us here.“

”

We don't have anything that really works. We test the few things that are available on the market.“

In Austria, these solutions are still „lifestyle“ products, not medical devices. Individual spin-offs from research institutions are endeavouring to market them. It is the responsibility of the person receiving care and their environment to decide what the care allowance - defined as an „earmarked benefit to partially cover additional care-related expenses“ - is spent on. The challenges: The products and solutions are barely visible. Apart from the financing gap in sales through subsidies, companies are taking a high risk as there is (still) hardly any active demand on the market for AAL solutions.

The digital health or care applications in Germany support the detection, monitoring, treatment, alleviation or compensation of illnesses, injuries or disabilities. They must first be included in the list of digital care aids. The care insurance fund cover up to 50 euros per month for a digital care application listed there.

Some apps offer exercises, for example, to stabilise or improve the state of health. Improved communication between family carers, the family, doctors and - if involved - the care service should ensure a smoother day-to-day care routine. These solutions can be used via a mobile device (smartphone, tablet) or as a browser-based web application on a computer or laptop.

» TECHNOLOGY AND SKILLED WORKERS: A „TWO-EDGED SWORD“

Technology makes many things easier for us, but in many places there is a fear of these solutions: „The social sector and digitalization are not friends.“ They fear being replaced by technology: „Reducing this fear is essential.“ In the top ranks of the hierarchy, the need for technological support has already been recognised: „It's clear that we need technology: (due to) a shortage of skilled workers, demographic trends, cost and quality issues.“ At the levels below - for example, at the level of home care and care assistance, - the desire for technological support is „hardly present“ or unstructured. For example, if a home care

assistant asks for support and an assessment of the health situation of the person being cared for, photos are sometimes posted in unprotected WhatsApp groups, etc.

If the digital and technological transformation is carried through, many of these reservations will disappear: „We have lost our overall fear of new things. (...) I think it needs a step-by-step approach to this topic. And suddenly it becomes normal for us to manage these things using IT.“ Another participant: „The staff are a very valuable and important source of knowledge and enthusiasm. And they are also the ones who receive many questions from the care recipients.“

”

It's clear that we need technology: (due to) a shortage of skilled workers, demographic trends, cost and quality issues.“

» DIGITAL GAP VS. DIGITAL PARTICIPATION

Technological developments offer positive effects for older people - but not everyone can participate. The rapid developments and the rapid increase in the importance of this technology in our lives particularly exclude those generations who have had little contact with digital technology so far. Furthermore, care recipients fear that the use of technology will mean that they will be spoken to less.

To be accepted, the tools provided must solve problems (which already exist) and offer simple, intuitive interfaces: „Then it becomes user-friendly and people accept it.“

» INNOVATION KILLER FEDERALISM, BUREAUCRACY & FRAGMENTED COMPETENCES

In Germany and Austria, care is a federal state competence. These fragmented responsibilities create challenges in many respects: The services vary from federal state to federal state and the cash flows are complex. The conditions for patients and care facilities vary depending on which federal state you live in. This means that there are no standardised and sustainable strategies that create the same conditions for everyone.

Bringing developments to the market is becoming a gauntlet in the federal states. „We are a long way from scaling up“, as one interviewee expresses his frustration. This means that market opportunities are further reduced and risks for companies and organisations are increased.

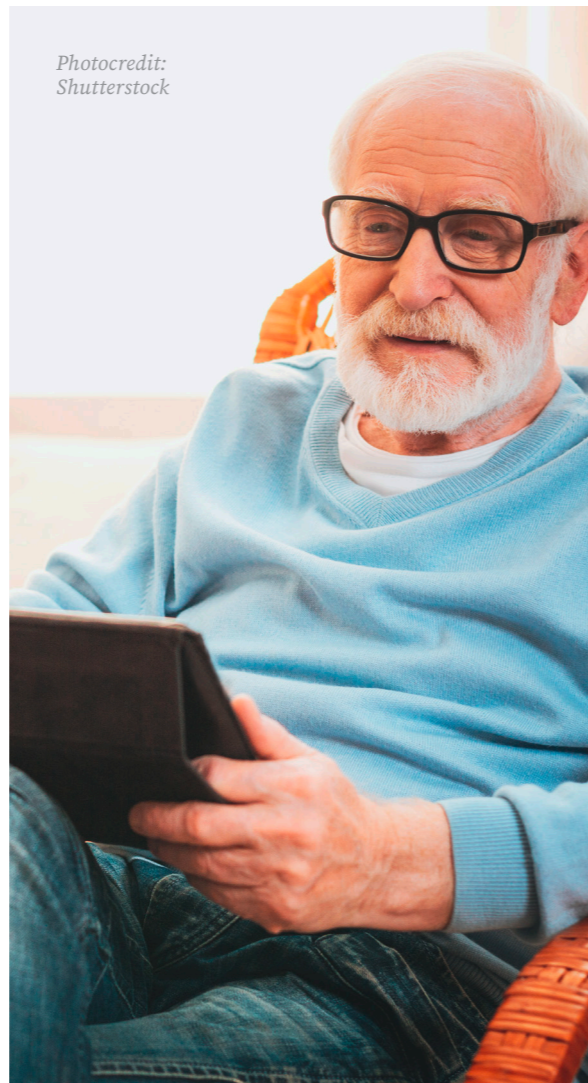
”

We all need to get out of our comfort zone.“

The challenge

The development of innovations requires resources - and these investments must also be worthwhile and profitable for companies. A negative example: In Germany, it takes several years for companies to obtain an aid number for an assistance system. This deprives innovative companies of the opportunity to enter the market. One interviewee: „We shouldn't be surprised that there are so few on the market.“

Another example comes from Denmark: The municipalities are responsible for providing support at local level. In view of the many regional contacts, a research company needs a sales organisation tailored to these small structures. Conclusion: „Scaling is difficult



» CARE WILL BECOME A FAMILY TASK, „PRESSURE ON WOMEN WILL INCREASE“

Care can „no longer be organised by public institutions or organisations“. This means that care is becoming a family task. The interviewees agree that the need to organise care more privately will increase the pressure on women. After all, not everything can be done with technology, it also requires „the presence of people.“

Women in families are often responsible for providing care. The economy is already responding: To ease the pressure on their (female) skilled workers, companies not only provide their employees with childcare cen-

tres, but also care solutions for their relatives.

”

It is also an ethical problem when people have no care at all.“

» COOL GADGETS VS. NEEDS OF THE TARGET GROUPS

Some big, „cool“ technical solutions and gadgets have already failed because the target groups are often neither digitally nor technologically savvy and do not use these solutions. Furthermore, they are often too big and too expensive and require too much support. Some participants in the survey therefore see themselves as a „bridge between developers and end users“ in order to avoid such undesirable developments.

» THE TOPIC OF THE FUTURE: PREVENTION

Preventing the costs and the suffering of those affected in the first place: Prevention means avoiding diseases or challenges. Currently, all we do is repair: If we fall ill, we receive treatment.

AAL systems are not (yet) an issue for insurance companies for several reasons, according to a survey participant from Germany. Firstly, the insurance industry is heavily regulated, which leads to an obstacle to innovation. But trust and expectations also play a major role.

In the smart home sector, for example, experience has shown that smart applications cannot prevent burglaries or water damage. Although the sales marketing with the message that this would make the home safer was a good story, the products and solutions were unable to fulfil this promise. The reliability of the solutions was also an issue, according to the insurance expert.

» INTERDISCIPLINARY NETWORKING & COLLABORATION

In addition to the healthcare system, smart health applications are also changing related sectors, such as architects, construction companies and trades such as electricians. They plan and design, are responsible for installation, conversion and refurbishment as well as for operation and maintenance. Technical solutions are often discussed, but the special requirements and needs of care facilities are not taken into account.

According to the interviewees, it will still take some time before the necessary cross-disciplinary approach is adopted across the board in training programmes for non-specialist trades. E-learning modules that can be accessed at any time and help non-specialist trades to familiarise themselves with new topics will be a major future market, according to one participant.

In addition to smart, intelligent applications, new challenges such as the high cost of energy, rent, etc. also require a new approach to construction projects - and networking with topics such as energy efficiency.

One interviewee goes one step further: In addition to improved interdisciplinary and regional cooperation, he advocates networking between the countries. Because: „We all have the same problems. We need to work on them together, not start researching them all over again.“

”

Scaling is difficult in this fragmented market.“

04.

KEY CRITERIA AND FINDINGS

» DATA PROTECTION & MONITORING

AAL products and solutions collect data - for example to analyse deviations to be able to point out a problem in a daily routine. The products and solutions must therefore be protected by data protection laws and comply with ethical aspects. Some products - e.g. the Apple Watch - cannot be used by healthcare organisations for data protection reasons. Conclusion of several participants: It must be made clear to people what data is being collected and for what reason - and they must be able to switch the product off again at any time.

Users often have the feeling that they are being monitored. In this context, it was discussed in the interviews that technology must be orientated towards people and not the other way round. On the other hand, solutions require data that can be processed. Experts advocate data processing to be as anonymous as possible: No recordings and images, but completely anonymisable data from sensors. Example: A sensor on a refrigerator only recognises that it has been opened. One participant: „I think we need to raise awareness that this anonymised data says nothing about the individual. But it is necessary for a certain coherent further development.“ There has to be room for people's basic needs:

„You always have to be careful not to violate their privacy with too much surveillance.“ For example, when couples have newly found each other in a care home or have moved in together. One participant: „The safety aspect is so important to us, but it's not just about safety. Because even an old person can take a certain amount of risk.“ His conclusion: Living should be as close as possible to living at home. And this should not only be characterised by security.

”

We need a new legal framework that allows us to try things out, make mistakes and learn.“

» CO-CREATION: THE ESSENTIAL INTEGRATION OF END USERS

Co-creation is the involvement of the end consumer in the development process. The interviewees' criticism: It is not about the solutions being able to do everything or being „cool“ - but that they can do the right thing and can be used by the end user. According to the interviewees, end users are often not involved in developments at all or much too late.

One participant: „All we do in this part of the project is talk to people: How do you like it? It gives you a lot of information: The screen is too slippery, the plug doesn't work well.“ It's also important to communicate what data, images, etc. will be included and why: „These are things that need to be clarified during development.“

To test in advance how people with disabilities handle the tools, there are tools that simulate limitations, e.g. for people with reduced vision or walking difficulties. However, tests are also carried out in cooperation with regions and organisations: They test during ongoing operations - and that is also the challenge. A participant: „People's attitudes change. Those who were motivated at first become more reluctant when the 10th fall solution is to be tested. (...) The tests allow us to participate and express our opinion. However, carers don't have time in their everyday work and staff are becoming fewer and fewer.“

» DIGITAL CARE APPLICATIONS: „THERE IS A LACK OF BASIC INFRASTRUCTURE“

Even if there are digital care applications in Germany (see page 19): The basis for these AAL applications is a properly working internet connection. According to the interviewees, this is not so much of a challenge in large cities, but in rural areas this basis is lacking - especially in Germany.

» INDIVIDUAL REQUIREMENTS LEAD TO DIVERSITY & COMPLEXITY

There is no one-size-fits-all solution, but rather a variety: The terms „people with disabilities“ and „older people“ cover a wide range of medical conditions and requirements. Assistance solutions need to be as customisable as possible - and this also requires staff to make these adjustments.

The German „gigabit strategy“ states that every household in Germany should have a glass fibre connection by 2030. However, this target is unrealistic for experts: Foreign investors are considering leaving the German market and smaller companies are threatened with bankruptcy. The reasons: Civil engineering costs are rising, planning figures and network usage have proven to be too optimistic.

Austrian companies are experiencing a similar situation: Just recently, the Internet Offensive called for a paradigm shift and an end to massive broadband subsidies. These would only heat up the civil engineering market and increase prices. They are instead calling for a reduction in bureaucracy and the investment in a digitisation offensive in the areas of training, research and development as well as broadband demand.

One example: Systems are already being installed in care homes and assisted living facilities that offer end users, their relatives and carers a wide range of options. Sensors record health and movement data as required and report falls. The systems can be linked directly to scales, for example, so that the measurements can be entered directly into the patient file. Carers of patients with dementia who have a tendency to wander need an alarm if the patient leaves the living area. All these settings are determined at the start of treatment and evolve with the patient's state of health.

This also means that AAL systems are complex technologies that encounter complex systems.

”

Innovation comes from the regions“

» „AN INTEGRATIVE STRUCTURE IS REQUIRED“

„Technology is one component, but it only works if it is part of an integrative structure in which care funds and insurance companies work together with institutions, cities and service providers.“ This is necessary that not just a few, but a broad population can benefit from the developments. This requires system integration - „and that is not just technological“ - and an overall process: „We need a strategic process in which we involve these different organisations and people in order to set clear priorities with them and then implement them.“

According to one participant, new approaches are needed in these collaborations based on the needs of the population, because: „In many countries, a standardised offer is presented in the social or care sector which is orientated towards the providers and not the users.“

The new approaches would result in new business and service models, new organisational and governance models. And: „We need a new legal framework that allows us to try things out, make mistakes and learn.“

”

It's about a long-term social partnership. This is a task for generations.“



» INNOVATION COMES FROM THE REGIONS

Individual milestone projects are mentioned in the discussions: They are anchored in the regions and serve, for example, to provide improved advice on how to prepare the home for retirement in an age-appropriate and comfortable way. Show flats also show end consumers what options are available to them.

Those who have understood the issue in politics form structures to explore and embed the issue in the state or region. In many cases, the aim is to explore what is already possible and pilot it before it is fully rolled out. Political anchoring gives new and innovative approaches a voice in political bodies, greater visibility and feasibility.

The problem: „The border is the district.“ Meaning: „This counselling no longer exists two towns away.“ Due to the lack of overall strategies, further development does not take place top-down, but via the many individual projects in the regions.

”

Other regions and political representatives find out about innovative projects via the press, this is how it spreads from regions to other districts and federal states. And not the other way round, as it should be.“

This also means that it largely depends on the personalities in companies, organisations or politics whether projects exist or not. One interviewee: „If these personalities retire, for example, the AAL projects will also disappear.“

*Photocredits:
Stock-Adobe*

» NEW THINKING REQUIRED IN DEVELOPMENT

We are still naive when it comes to dealing with new technology and still have to learn how to use it. This applies to both companies and end consumers, according to one participant in the survey: „We haven't even reached the lowest level of banality in smart homes.“

Sensors collect data, but the systems often do not realise what this means. Here are a few examples: When a door is opened, many door sensors do not recognise whether someone has gone through. Has someone entered or left the home? Is someone just taking a long shower or is there water damage? A motion detector cannot distinguish between inactivity and presence. Has the patient fallen out of bed or is the bed simply being made? And users do not always act according to patterns - they act irrationally.

This makes the classic if-then relationships in private homes unusable - and false alarms a major challenge. This is why it is necessary to „leave the classic smart home mindset behind“ during development.

System transitions require interdisciplinary specialists

Smart building systems and AAL concepts not only require dealing with complexity, but also interdisciplinary thinking and action. Entire solutions are created that need to be designed and thought through, integrated and maintained. This requires specialised staff - and these are rare. Similarly, there are still no mature job profiles, as silo thinking prevailed here for a long time.

» INVESTMENTS & MISALLOCATIONS

Some interviewees calculated that investments in intelligent technologies and the orientation of the healthcare system towards greater personal responsibility and prevention would pay off. It is not enough just to talk about the high investment costs: There must be an offsetting calculation with the savings and improvements in our healthcare system, which is currently focused purely on reparative medicine. This enables operators of care and healthcare facilities to deploy existing staff in a more targeted manner and improve or maintain the quality of services.

One participant goes one step further: „Resources need to be reallocated, they are currently misallocated.“

Demand for „financial investment innovation“

How are investments possible if the added value is also social added value - and not purely economic added value? This requires new approaches, new partnerships and forms of business, such as public-private partnerships and social enterprises. „Otherwise, 20% will be able to afford the products and the rest won't.“ Silos need to be broken down in this area too: „There is still very little impetus here from politicians and the major organisations.“

”

The system is too rigid. (...) We would be much further along if we could deal with it more freely.“

» CALLS FOR TENDERS: „IN NEED OF REFLECTION“

Are the research methods suitable for achieving the desired results? And how flexible do tenders need to be in order to avoid having to follow an too rigid research plan? The more detailed the application, the better the chances of receiving funding - on the other hand, it is not possible to know the details of a three-year research plan in advance. As a result, interim results are not sufficiently included in the research, as one interviewee explains: „The system is too rigid. (...) We would be much further along if we could deal with it more freely.“ Participants criticise the fact that the specifications in the tenders lead to a „balancing act“ because the results simply cannot produce the output required in the calls for proposals.

Another challenge: In 3 or 5 years of development, „the world has changed. The products are old when they come onto the market.“ Some products have turned out to be flops: For example, because the Apple Watch was launched on the market with a better fall detection system and the development no longer had a chance on the market. One participant: „It should be possible to cancel the projects.“

» TECHNOLOGY (ALONE) CANNOT SOLVE EVERYTHING

Technology is not a „panacea promise“; it cannot solve all challenges on its own. According to one participant, there has been a lot of hype: „More people are in need of care, so we need technology.“ In the field of care, however, „as with all care aids, medication and medical treatments“, it is necessary to take a closer look at the tools and their potential use: What can the tool do, what results can be expected? Is there a contraindication? Who else needs to work with it? Do I need to involve the social environment?

Reliability & quality standards are needed

In everyday practice, users need to be certain that the quality criteria are being met. Essential questions such as reliability and stability need to be answered - also with regard to the companies that offer the tools: According to one participant, there is a need for reliability and assured stability. In one case, for example, the operating company became insolvent during a research project and the sensors could suddenly only be used partially.

Furthermore, a precise description of what sensors can and cannot be used for, for example, is needed in practice. In which part of the work processes can the tools be integrated? Where do they make sense and where not? Because: „Every intervention has side effects, and you also have to deal with them.“

Large companies have an advantage over SMEs in this regard: A small start-up is less predictable in terms of stability than a large company. Furthermore, these companies have more resources to meet these high requirements.

”

SMEs don't have the financial power to go to market.“

» THINK AAL IN A BROADER WAY

Limitations occur more frequently with age, but: Limitations are not only associated with age. Mobility restrictions due to illness or accidents can also lead to impairments of much younger people. This narrow approach unnecessarily reduces the diversity in the use of these technologies.

”

Every intervention has side effects, and you also have to deal with them.“

» DIGITALISATION ≠ ACCESSIBILITY

The digitalisation of products „is a trend among manufacturers, they are cheaper and they look modern.“ However, it also creates new barriers. One example: Touchscreens are often not usable for people with visual impairments; rotary knobs are better. One participant: „In the worst case scenario, blind people can no longer cook because they can't use the touchscreen.“ The industry shifts the challenge onto those affected, a categorisation would be necessary - and the active involvement of interest groups in the development of products.

» „WE NEED A NEW MINDSET, A NEW CULTURE“

According to one participant, the structures in the healthcare sector will change over time. However, as there is no standardised approach, the success of (transformation) projects depends on the participants. And this requires a new mindset and permission to make mistakes during testing. The aim is to „mobilise everyone, and everyone has their role and task.“

Systemic thinking and working is not yet being paid for: „Silo performance is still being paid for.“ The coordination of the big picture, the integration, is not yet covered.

05.

COMMUNICATION, INFORMATION CHAN- NELS AND SOURCES

”

„The information doesn't get to where it should.“

» AAL: NOTHING IS ASSOCIATED WITH THIS WORDING

The terms are numerous and varied: Assisted Living, Smart Living, Active Assisted Living. However, users do not associate anything with them. The general tenor is that older people in particular are not familiar with the English terms.

» „THERE ARE NO ADEQUATE SOURCES OR CHANNELS OF INFORMATION“

Googling is not helpful in view of the large number of solutions - but how carers and those affected should find out about the solutions is a recurring topic at conferences and in organisations, according to the interviewees.

”

As long as I don't need AAL, I'm fine“

» USERS AND THEIR RELATIVES ARE DIFFICULT TO REACH

Directly connected to this is the fact that potential users and their family members are difficult to reach. One participant: „The information doesn't get to where it should.“ These are not the target groups who spend hours researching on the Internet - and some unanswered questions remain: Will this help me? What do I need to do? And where can I get these tools?

Participation & Co-creating: What is even possible?

If new paths are taken, the participation of those affected is essential - but in times of technological change, these are also challenging. In addition to patients and residents, staff and relatives are also affected. As the options are not known, questions such as „What do you want?“ or „What do you need?“ cannot be answered competently. One participant who was significantly involved in the planning and realisation of new care facilities: „It's not a simple process. (...) You have to guide people towards what else they might need.“



Photocredit:
Stock-Adobe

» INTERDISCIPLINARY COMMUNICATION

Not just the end user is difficult to reach: Assistance solutions and intelligent support require interdisciplinary action and communication - for example between IT, healthcare and energy/electrics. However, the care and healthcare staff are not the only ones who need to be able to handle smart applications; experts who can program these solutions, integrate them into existing (complex) systems, train them and maintain them are also required. In order to establish these new, sustainable structures, joint communication is required - and in many cases this is not yet in place.

» AS LONG AS I DON'T NEED AAL, I'M FINE“

One participant explains: „There is something medical about the tools.“ In other words, they are associated with the fact that you need these devices - in the worst case, they discredit you. For example, if the pulsometer flashes red when your blood pressure rises. According to one participant, it is important to define AAL not as Ambient Assisted Living, but as Active Assisted Living: „AAL can make my normal living conditions better, more comfortable and more convenient.“ However, this has not yet been communicated credibly - but is necessary to raise acceptance.

”

Explain it as simply as possible, in simple words. Clear communication.“

» THERE IS A LACK OF NETWORKING BETWEEN THE REGIONS/FEDERAL STATES

Regions and federal states often are working on the same projects and make the same mistakes. There was no organised, direct, regular exchange (at the time of the market survey) - not even with the federal government.

06. EXPECTATIONS

”

The existing buildings need to be sustainably modernised so people can stay at home. The substance is already existing, we can upgrade and maintain it with little effort.“

» THE BIGGEST „PAIN POINTS“ ARE EXPECTED IN PRIVATE CARE AND ASSISTED LIVING

- for everyone involved: Care homes will not be able to provide places. Relatives will not want to place those in need of care in a care home as they fear a low quality of care. And local authorities „would rather pay home carers than a place in a care home“.

AAL solutions have the best development opportunities in private care and assisted living spaces: „Relatives are left behind“ – and they are desperately looking for solutions. The conditions are also good in assisted living spaces: The aim is to enable residents to live independently for as long as possible. The substance is already existing, we can upgrade and maintain it with little effort.“

According to the interviewees, there is much more staff and care on care wards, where solutions are only needed for explicit issues

such as the tendency of dementia patients to walk away. According to the experts surveyed, it will „take even longer“ in the other healthcare areas - because an impetus is needed from politicians or health insurance companies. „Nothing is happening at the moment. We have to pay for it all ourselves and that’s the end of the projects.“

» „TECHNOLOGICAL STANDARD WILL COME“

A certain technological standard is expected in the future - but it will still „take a while“. The experts expect that this will bring benefits, because when AAL concepts work, the advantages can unfold: People stay healthier, can live independently at home for a longer time. This doesn’t just apply to older people or people with disabilities: Technology can improve the lives of us all and make processes more (energy) efficient. The focus of initiatives and subsidies is currently shifting towards sustainability, energy efficiency and e-mobility. This is another reason why politicians are not currently expecting any major changes to the general conditions in the care sector. As a result, according to some participants, it will take longer until „something really happens“. How long? „Only when it’s too late or becomes life-threatening people will think about changing the situation.“

”

Technology must adapt to people, not people to technology.“

However, as soon as intelligent systems are integrated into the home, e.g. in the areas of energy and mobility, these solutions can ideally be expanded to include AAL solutions (more quickly and easily).

» INSURANCE: THE FUTURE OF PREVENTION

We currently live in a „repair society“: If we are ill, we get treatment. However, smart health applications and artificial intelligence will revolutionise and massively improve disease detection and prevention. According to an insurance expert, the topic of prevention will be „essential for insurance companies in the future.“ This survey participant asks: „Is it possible to rethink the insurers’ business model by not allowing the risk to material-

ise in the first place?“ New business models would have to be considered for this, including the question of how much the customer would be willing to pay.

» POLICY: MORE STRATEGY AND RECOGNITION OF „REAL NEEDS“ DESIRED

With the increasing pressure on the care sector, interviewees are hoping for more movement. Currently, politicians are „simply denying certain facts that are completely obvious.“ The problems and challenges affect people very personally and, according to participants, the pressure on politicians will increase.

”

Only when it’s too late or becomes life-threatening people will think about changing the situation.“

*Photocredit:
Stock-Adobe*



From the perspective of one participant, a nationwide structure must be created in the long term in order to secure funding. As long as there is no public funding, AAL solutions will primarily be found where private interest meets sufficient budget. The key questions are: What can be financed by the public sector and what can be financed by the private sector?

”

You can't just sit back and say we're not going to do anything and it will work out at some point.“

» NEXT BIG THING: TELEMEDICINE, ROBOTICS & ARTIFICIAL INTELLIGENCE

Robotic or assistance systems already exist in rehabilitation today. It is to be expected that these systems will also expand to other medical areas. Artificial intelligence will also find its way into these areas: From diagnostics to treatment. According to the tenor, the possibilities will continue to develop rapidly thanks to these new technologies, but: „Of course, a certain amount of caution is required when you look at what is already possible today.“

The possibilities in telemedicine will also continue to develop: Travelling times can be reduced, patients get answers quickly without the need to set up local structures.

» INCOME IN CARE PROFESSIONS WILL (HAVE TO) CHANGE

„When will we change the income structure in Europe because people from Eastern countries will no longer work for the money?“ According to one of the survey participants, the income gap will not exist for much longer, as well as round-the-clock care under precarious conditions. On the other hand: „Pensions are getting smaller and smaller, that won't work.“

The key questions are: What can be financed by the public sector and what can be financed by the private sector?

*Photocredit:
Stock-Adobe*



07. MANAGEMENT SUMMARY

The variety of challenges becomes evident in the interviews: Demographic change is in full swing. The shortage of specialists and workers and the heavy workload on staff in the care and healthcare system will fundamentally change the way we spend the last third of our lives.

Technological developments, digitalisation and automation offer opportunities to meet these challenges. These are solutions that are tailored to the individual needs of older people or people with disabilities in order to support them in everyday life or in emergency situations. They involve care staff, relatives and doctors and offer care organisations great potential for solutions to enable people with care needs to age with dignity. They improve the quality of services and make organisations more responsive and efficient overall. This means that existing resources can be used in a more targeted manner. They also open up new possibilities for recognising and treating diseases and health impairments at an early stage.

This market survey offers a kind of SWOT analysis of age-appropriate assistance solutions: It identifies opportunities and strengths, but also risks and weaknesses associated with technological development in the care

sector. For a newly developing discipline, it is typical that there are many challenges and strong inhibiting factors.

In addition, there are the current multiple crises and pressures caused, for example, by high inflation and price increases as well as high interest rates. Such crises often act as accelerants: COVID and the consequences of the war in Ukraine have ruthlessly exposed the weaknesses of the system (not only in care) and accelerated challenges such as the shortage of skilled workers. Developments are dynamic and complex, and old problem-solving strategies are not enough. However, as is so often the case, the new has not yet become established.

» NEW SOLUTIONS URGENTLY NEEDED

In addition to the lack of staff, companies and organisations are being hit by price increases for rents, food and energy as well as the general rise in interest rates. The interviewees warn of the consequences: Neither the quality nor the quantity of care can be maintained in the current system.

» TOOLS FOR LARGE ORGANISATIONS NOT MATURE ENOUGH

There are a few individual AAL solutions on the market for care homes and private individuals, for example. There are only a few solutions on the market for large organisations that need to coordinate thousands of carers in different care levels and facilities as well as thousands of employees.

» EXISTING SOLUTIONS ARE NOT SUFFICIENTLY VISIBLE

This applies at several levels: The regions and federal states or even the organisations do not work together - they research independently and come up with their own solutions. A common approach would enable everyone to make faster, joint progress. Solutions for private care are also not sufficiently visible, and the target groups (those affected and their relatives as well as carers) are often difficult to reach.

» FINANCING GAPS & HURDLES IN THE „VALLEY OF DEATH“

AAL solutions are in the „Valley of Death“: The go-to-market. Many ideas have been postponed due to the high market risks. Also, federalism is an innovation killer: Although the federal ministries are responsible for care overall, the federal states and local authorities are responsible for implementation and funding. The fragmented competences and cash flows are complex, and the bureaucracy makes a go-to-market a gauntlet. There are many parallels between Germany and Austria.

Today, subsidies are orientated towards the major issues of sustainability and environment, and we also need to transform our energy system. The focus of subsidies will not change any time soon: The energy transition

is the biggest, most expensive and most long-term project ever realised in a united Europe.

Conclusion: The implementation of projects depends to a large extent on committed individuals in organisations, the federal states and the regions. There is no strategy at the federal meta-level; the organisations are left to their own devices. Those who can afford it privately help themselves.

» LACK OF UNDERSTANDING FOR INNOVATION & NEW PROBLEM SOLUTIONS

The sectors and the people who work in them are not yet sufficiently prepared for digital and technological change and the associated opportunities. Involving them in this process is essential for successful implementation. It is important to listen to the fears and concerns of employees and work together with them on innovation projects.

» MAKE POSITIVE EFFECTS VISIBLE

The challenges the care sector faces are enormous. A shortage of skilled workers and manpower combined with demographic changes make the use of assistance technologies essential in order to enable people to live as long as possible in their own homes. To support the market launch of existing solutions and make innovations more visible, it is now important to achieve greater visibility among stakeholders in the care sector, insu-

WHAT IS NEEDED FOR SUCCESS

rance companies, end users, those affected and relatives.

» ORGANISATIONS THAT DEAL WITH INNOVATIONS BENEFIT MOST

This is not just the opinion of AAL system providers: Care facilities that open up to digitalisation and technological development will benefit. Essential for these projects: Plan well & involve the target groups, bring the transformation into effect, reduce fears and communicate well. In this way, IT solutions and technology are integrated into everyday life and fears are reduced.

» POLITICAL CORE TEAMS: DRIVERS OF REGIONAL INNOVATION

The regions are the drivers of innovation - but only if there are committed people in politics and administration. If there is political commitment, the topic is anchored in political decision-making processes. This gives innovative approaches a voice and improves their visibility and feasibility.

The challenges affect people very personally: The care crisis affects family members or entire family structures that provide care.

Women are particularly affected by this development, as they often are responsible for the care work in families. Those who develop (political) solutions will be able to reduce the social and political pressure of the problem - and benefit (politically) from it.

» SUCCESS DEPENDS ON THE INVOLVEMENT OF THE TARGET GROUPS

Successful solutions are geared towards the needs of the target groups - i.e. end consumers, (caring) relatives and care staff. If they are involved in the planning process, they collaborate on the solutions and contribute necessary changes and adaptations. To be accepted, the tools provided must solve problems that already exist and offer easy-to-use interfaces.

The rapid pace of technological development is excluding generations that have previously had little contact with digital technology. This is the case for both employees and carers. Involvement and communication are the key to successful change: A high level of information and motivation is necessary to reduce fears and concerns about new solutions.

» SYSTEMIC REORGANISATION & ECOSYSTEM APPROACH

Whereas silo thinking used to be sufficient, today a multidisciplinary approach is needed to develop a sustainable system that benefits a broad population. The requirements are complex: As well as healthcare staff having to learn how to use digital solutions, electricians and integrators, for example, also need to be able to implement these solutions, program interfaces and also maintain and further develop these (software) solutions. This also requires new approaches in training and further education and the joint further development of care and health.

It also requires a holistic approach in which care funds and insurance companies work together with institutions, regions and service providers. This will result in new business, organisational and governance models, which will also require a new legal framework. The need for a systemic reorganisation also applies to funding: „Resources need to be reallocated, they are currently misallocated.“

» TECHNOLOGY ENABLES NEW APPROACHES

The use of technology and digitalisation does not just mean the pure digitalisation of known processes. The possibilities are expanded by these tools. Patients receive the help they need more quickly thanks to digital solutions, and diagnostic procedures are also moving towards new possibilities thanks to artificial intelligence. This also means that the development of these systems requires a new approach and a shift away from familiar planning processes and thought patterns.

» FUTURE TOPICS: EARLY DETECTION, PREVENTION & PERSONAL RESPONSIBILITY

From reparative medicine and pure symptom control to early detection and prevention: Assistance solutions provide better health data, allowing immediate intervention in the event of changes. This allows diseases to be recognised and treated at an early stage.

Furthermore, Nordic countries such as Sweden and Denmark are already implementing programmes to strengthen people's personal responsibility and independence. According to the experts, it will be necessary to follow this path as well: To enable people to maintain their health for as long as possible. Software solutions can help to maintain the memory or mental performance of older people - or, in the case of dementia, ensure that the disease worsens less quickly.

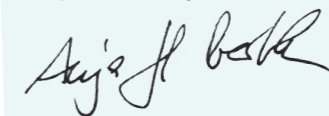
» LEARNING FROM PIONEERS & SUCCESS STORIES

They do exist: The successful implementation of assistance solutions. There are already many retirement and care homes in the GSA region that have successfully implemented those solutions. The innovators come primarily from the federal states and regions.

Countries such as Denmark and Sweden are leading the way in implementing holistic approaches to enable people to live independently in their own homes for as long as possible. A frequently communicated wish is to learn from these positive approaches, implementations, ideas and mistakes in order to make faster progress.

I would like to thank the participants for the discussions and insights into this complex topic. This market study is dedicated to the people who are helping to shape the future of the care system with commitment and courage.

Mag. (FH) Anja Herberth



RECOMMENDED READING AND REFERENCES

THE LABOUR MARKET OF THE FUTURE / AUSTRIAN CHAMBER OF COMMERCE

The labour market in Austria will change significantly by 2040: The demand for workers will increase significantly, while at the same time the number of people in employment will fall. The main reason is the demographic trend: Calculations show that by 2040, approximately 363,000 additional jobs in companies will not be able to be filled - unless countermeasures are taken.

Source:

https://news.wko.at/news/oesterreich/wko_factsheet_labour_market_e_future_2040.pdf
(as at 10 October 2023)

STATISTA.COM

Number of senior citizens in Austria from 2013 to 2023

Source:

<https://de.statista.com/statistik/daten/studie/998408/umfrage/senioren-in-oesterreich/#:~:text=Anfang%202023%20lebten%20in%20Österreich, die%20Vorjahre%20kontinuierlich%20steigen%20war.> (as of 10 October 2023)

DIGITAL CARE APPLICATIONS IN GERMANY

Source:

<https://www.pflege.de/hilfsmittel/digitale-pflege-gesundheits-apps/vom11.Okttober2023>

8TH AGE REPORT, 2020

„Digitale Teilhabe und (digitale) Exklusion im Alter“ [Digital participation and (digital) exclusion in old age], Expertise on the 8th Age Report of the Federal Government, by: Anja Ehlers, Moritz Heß, Susanne Frewer-Graumann, Elke Olbermann and Philipp Stiemke

Source:

<https://www.achter-altersbericht.de/fileadmin/altersbericht/pdf/Expertisen/Expertise-FFG-Dortmund.pdf>

OPERATOR SURVEY OF CARE PROPERTIES 2023 BY CUSHMAN & WAKEFIELD

Survey of 30 operators of care homes, ambulatory facilities and assisted living facilities on trends, challenges and opportunities in the market today.

Source:

<https://www.cushmanwakefield.com/en/germany/insights/operator-survey-care-property-2023>



CONTACT

owl lab e.U. | SmartBuildingsCompass
Mag. (FH) Anja Herberth
0043 (0)650 558 03 19
anja@owl-lab.at
owl-lab.at | smartbuildingscompass.com

JANUARY 2024