DIGITALISATION AND HEALTH

STARTING POINT/CHALLENGE:

Older adults generally want to live as safely and autonomously as possible. However, from a certain point in time, an increasing number of older people need support in their everyday lives – be it a reminder to take medication, or help if they have a fall in their own home. Almost 6 million older people in Germany live alone, and only a fraction of them get the full support they need from relatives, carers and outpatient care services. A VIVAI Software AG business case shows how people who need assistance can be supported in their everyday lives by intelligent voice assistants, chatbots and IoT sensors.

"In older age, how can people live autonomously and safely in their homes for a longer period of time? How can we address the nursing crisis and demographic change? How can relatives and friends live more comfortably in knowing that everything is fine with their loved ones? All of these questions can be simply resolved with IoT."

©VIVAI Software AG

Dr. Bettina Horster, Board Member of VIVAI Software AG

SOLUTION

VOICE ASSISTANTS AND FALL SENSORS FOR AUTONOMOUS AND SAFE LIVING IN OLDER AGE

SUPPORT FOR OLDER PEOPLE WITH ASSISTANCE NEEDS IN DAILY LIFE

The IoT platform VIVAIcare offers support in daily life to people who need assistance, thus enabling a substantial amount of older people to remain in their own homes for longer, which is naturally an ardent desire for many

older adults. For example, an AI-based voice assistant reminds older people to take their medication or to drink enough fluids. Users can have "goodnight conversations" with the voice assistant or exercise their brain with quizzes and word games.

Smart connected medical devices such as scales, blood pressure or pulse monitors record vital life-essential parameters. With VIVAIcare, the data from all sensors is stored securely in a central location in the cloud and, if this is something that the older person wants, this data is shared with doctors, care services or relatives. Through the associated continuous monitoring of health values, alterations are noticed promptly, enabling doctors to quickly draw conclusions about possible illnesses and to initiate appropriate countermeasures.

INTELLIGENT SENSOR TECHNOLOGY DETECTS ACCIDENTS AND OFFERS RAPID ASSISTANCE

Special sensors which are integrated into the home – attached to ceilings, walls, doors or windows – prevent older adults from having undetected accidents in their own homes. In an emergency, these sensors alert care services or contact persons. In the event of falls, rapid assistance is of particular importance. In the Smart Home, the sensitive IoT sensors use infrared or radar images to measure contours and movement. Through intelligent data processing, they distinguish people from any house pets who may be lying on the floor, or from objects that might have toppled over. If the system detects a fall, the voice assistant will query the resident to determine if they have really been hurt. If it is a serious fall or the person is even unconscious and does not react, the system automatically triggers an emergency call and requests help. For relatives, not to mention the affected persons themselves, the fall sensor system offers greater safety and relief.

INFO BOX

At the heart of VIVAIcare is the Homebox Vivi. It connects the various devices and sensors in the home and also functions as a voice assistant. The data from the multi-sensors, door contacts, scales, blood pressure monitors or cooker monitor sensors is recorded and sent to the VIVAIcare IoT platform, where it is then assessed. In the event of any changes, Vivi reacts at lightning speed and offers assistance. The data is sent to the cloud through secure connectivity. All Smart Home connectivity standards such as LTE, Wifi, Zigbee, Z-Wave and Bluetooth Low Energy (BLE) are supported by Vivi and VIVAIcare.

Protection of sensitive data: Relatives informed on the strength of a data usage concept

VIVAIcare supports the principle of data autonomy: each user decides for themselves which of their data may be used, how and by whom. Simply informing relatives that everything is fine with the older person may be sufficient. Doctors or carers, on the other hand, may need further information, such as weight or vital parameters.

TECHNOLOGIES

• Artificial intelligence
• Internet of Things (IoT)
• Sensor technology

• Connectivity and connectivity standards such as WiFi, LTW, Zigbee, Z-Wave and Bluetooth Low Energy (BLE)

NUMBERS ON THE CASE

The number of people in need of care has been growing for many years: In Germany, there are a total of **4.1 million people in need of care.** [1]

(Of these, 2.1 million are cared for solely by relatives).

96 % of those over 65 live in **their own homes,** 4 % live in care homes. [2]

Approximately **four out of five people** in need of long-term care in Germany are **cared for at home.** [3]

Almost **6 million** older people **live alone.** [3]

76 % of respondents are in favour of a **robot assisting people in need of care** through reminders to take medication, food or drink. [4]

ECO MEMBERS

VIVΛI care

---

[1] German Federal Statistical Office 2019 "People in need of care by type of care, gender and degree of care". Source: https://www.destatis.de/EN/Themes/Society-Environment/Health/Long-Term-Care/_node.html;jsessionid=CBD752274C3BEC282A50D1113EA47CD5.live741

[2] German Federal Statistical Office 2022 with evaluations from the microcensus (2020). Source: Press release, "Nearly 6 million older people live alone". Source: https://www.destatis.de/EN/Press/2021/09/PE21_N057_12411.html

[3] German Federal Statistical Office on the topic of care. Source: https://www.destatis.de/EN/Themes/Society-Environment/Health/Long-Term-Care/_node.html and https://www.destatis.de/EN/Themes/Society-Environment/Health/Long-Term-Care/_node.html

[4] Source: Study by Stiftung ZQP, "Bevölkerungssicht auf digitale Unterstützung in der Pflege" ("Population View of Digital Support in Care") (DE) (2018)