



Open Platforms in the AHA / AAL Domains

(main gaps and innovation needs)

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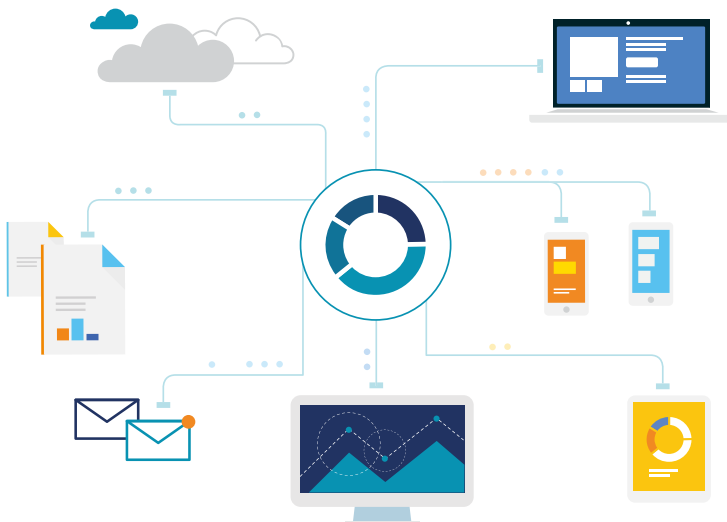
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Scope

Ageing presents one of the greatest socio-economic challenges of our century. The EU has devoted a high level of resources to ICT projects in the field of Active and Healthy Ageing (AHA). As a result, a considerable number of open platforms for the development of innovative solutions in the field have been created. Unfortunately, their impact as well as potential and existing gaps have not been thoroughly analysed and assessed. Some of them are unknown to the wider public in Europe or have even stopped existing.

PlatformUptake.eu responds to this challenge by mapping open platforms in the AHA domain from across Europe and by carrying out an in-depth evaluation of the most representative cases (such as universAAL, FIWARE and AIOTES). The project assesses the hindrance and success factors for their evolution, to finally ensure the large-scale uptake of existing platforms and the development of new ones.





Objectives

The PlatformUptake.eu project is a Coordination and Support Action (CSA), which seeks to understand the whole ecosystem of open platforms in the field and contribute to the development of an open market for digital solutions for active and healthy ageing and ultimately promoting the uptake of open platforms.

To enhance the technical, contextual and business capabilities of existing and future platforms, and thus ultimately contribute to the broad upscale of their services, the project seeks to:



IDENTIFY critical success factors of the development, deployment and spread of open platforms in the Active and Healthy Ageing domain, through a sophisticated tailor-made monitoring methodology.



DEVELOP monitoring and self-evaluation tools to support platform providers and users to self-assess their success, uptake, capability gaps and evolution potentials through smart assessment and visualisation tools.



ANALYSE existing platforms based on the created methodology, by assessing the projects and initiatives hosted by them, their further evolution, uptake, sustainability and socioeconomic benefits.



INVOLVE end-user communities and related stakeholders to initiate a knowledge exchange cycle for collecting insights on best practices and challenges of platforms' uptake, evolution and costs, etc.



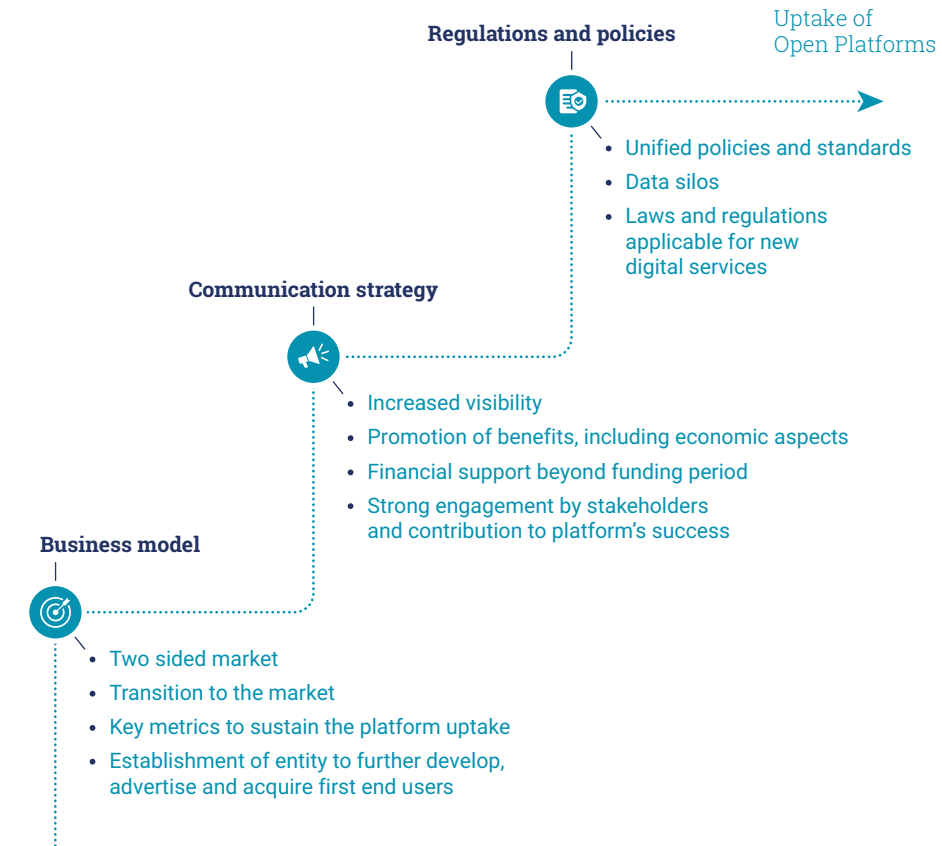
LEVERAGE the platform uptake by their user communities as well as their continuous improvement and expansion, by elaborating and showcasing best-practice models and evaluation guidelines.



DISSEMINATE the acquired knowledge to end-users for increasing their uptake of existing platforms, and promote best practice models and identified benefits to foster future developments.



Tackled Gaps and Challenges



This infographic provides an overview of relevant gaps and innovation needs for the successful uptake of open platforms in the Active and Healthy Ageing (AHA) and Ambient Assisted Living (AAL) domains. These were collected by the PlatformUptake.eu project during the assessment of the platforms' capabilities and represent a basis for the definition of recommendations on their development and wide-scale deployment.



Primary end-users

The number of older people has increased significantly over the past decades and will continue to do so. The growing numbers of the elderly population and increasing life expectancy call for new models of care and health services [1]. Digital technologies offer great opportunities to the care sector, and it is argued that information technologies can help people in need of care to maintain their independence. Information technologies may also improve the quality of life and health of aging people, and they have the potential to support formal and informal caregivers [2]. Digital and interactive technologies in healthcare have been argued to have the potential to improve the quality of life for patients, advance patient safety, facilitate the care process for medical staff as well as enhance the efficiency and productivity of healthcare services [3] [2]. Digital technology offers many benefits to individuals, organizations, and health professionals where the employment of digital health technology by older adults can nurture the development of proactive patients, and at the same time reduce the financial burden and resource pressures on health systems [4]. However, adoption and usage of digital health technology is significantly lower among the elderly population (i.e. above 65 y) compared to the general population [5] [6]. While a majority of the elderly population (88 %) have access to some form of ICT solutions, only around 9% make use of digital health services [7] although digital health technology may be particularly beneficial for the elderly population by, e.g., enabling independent living and increase the access to healthcare services [4].

- Low level of trust of older people towards insecure autonomous systems and technology in general
- Safety is an issue among older persons who to only some extent agree that they feel safe when using digital services.
- To allow older people to benefit from the digital solutions which are built upon the open platforms, a more inclusive approach during their development needs to be applied.
- Lack of access of older people to digital devices and the internet, especially in rural areas.

- There is low digital literacy, experience and self-confidence of older people in the use of open platform services and digital technology in general.
- Lack of motivation and interest in using open platforms services as well as perceived low relevance of digital technology as a solution to their needs
- Inaccessible technology design that renders digital engagement more challenging for older people with physical or cognitive impairments
- High costs for purchasing or using the services of open platforms
- “Gerontechnologies” which refer to technical devices targeting older adults have been argued to contain stigmatizing symbolism that might prevent older people from them adopting them.
- The design of digital technologies and open platforms’ services do not address properly the diversity among older people related to their personal, social, and physical contexts.





Secondary end-users

When looking at the various forms of social care, one can distinguish between home care, for those older persons that need support while living independently and so-called institutional care or nursing home care. Healthcare organisations, including those delivering integrated care and social care, see a strong need to deliver digital care for reasons of more efficiency and effectiveness. The worldwide pandemic has shown that digital care is possible, but there are still many gaps to fill. Open platforms are technical ICT-related instruments, which help collect data from clients and patients, make decisions on the right care and support and carry out digital care when necessary. Many forms of digital care are upcoming: vital signs monitoring, video conferencing, fall prevention and detection, medication adherence, sleep monitoring, activity monitoring, remote home exercise and rehabilitations and the higher complex medical care at home: home dialysis, oxygen support for Chronic Obstructive Pulmonary Disease (COPD), infusion of pain medication, etc. Therefore, also open platforms are becoming very complicated: not only, many new applications and services are being developed and offered, but also new technologies like machine learning via big data collections and artificial intelligence are coming up. These developments can be commercialized in both open and proprietary platforms, which are being offered widely by commercial organisations.

- Poor usability and design are perceived among care professionals as key resources for frustration and can cause the failure of platforms' adoption.
- Lack of centralized approach among the Secondary end-users represents for purchasing the services of open platforms hinders their wide application.
- Lack of interoperability is perceived as a critical gap by care organisations in the adoption and deployment of open platform services.
- Open platform providers should assist secondary end users in defining a data management plan, which can facilitate high level of trusts, transparency and accountability towards the secondary end-users.

- To establish great usability and accessibility of the platform's services, there is a need to involve care and healthcare providers in every stage of the platform's life cycle.
- Open platform providers need to communicate their value proposition for the Secondary end-users to understand how platforms' services will improve the provision of care or outcomes for their residents.



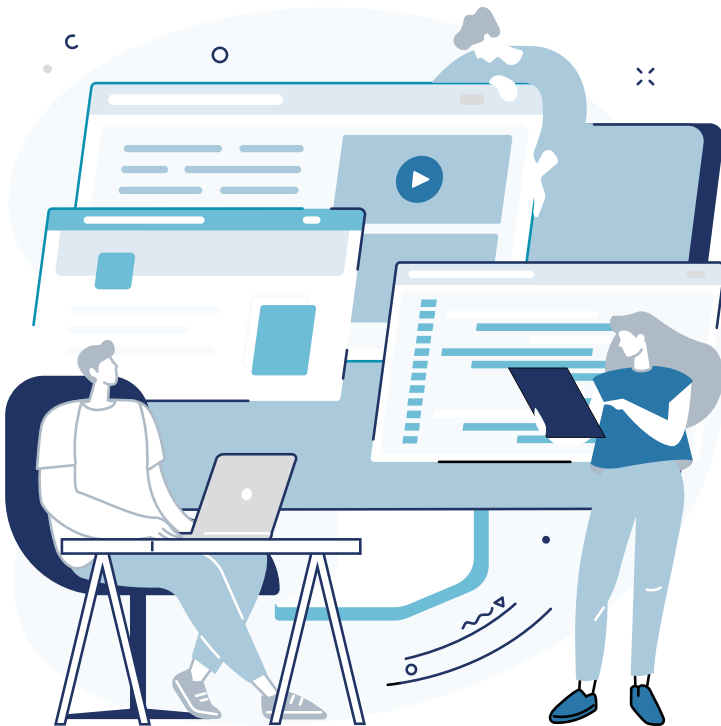


AAL / AHA solution developers / providers

Developers or providers of AAL/AHA technology are responsible for implementing the open platform's solution in practice and play a big part in it. From a developer's point of view, an open platform describes a software system that is based on open standards, such as published and fully documented external application programming interfaces (API) that allow using the software to function in other ways than the original programmer intended, without requiring modification of the source code. Using these interfaces, a developer could add features or functionality that the platform vendor had not completed or had not conceived of. An open platform allows developers to change existing functionality, as the specifications are publicly available open standards. The more open platforms a developer knows or is familiar with, the more insights or new knowledge they can gain. With each newly used open platform, a developer gets more experience in terms of usage and user experience and can easily differentiate between a good and bad open platform. Knowing what the best practice of an open platform solution is decreases also the time for implementation and coding of the solution. That is why using open platforms only benefits an AAL/AHA solution developer or provider.

- Poor involvement of hardware manufacturers and software/app developers in the design, testing and launch of platforms services
- Many of the platforms on the market are partially opened or "closed", which hinders the upscale strategy of organizations specialized in the development of digital solutions for active and healthy aging.
- The lack of capability to meet the end users' objective as well as internal innovation processes of the company represent a major hurdle on the path towards the broader applicability of the open platforms' services.
- Poorly defined value proposition hinders AAL / AHA solution developers / providers to identify the benefits of using the services of open platforms.
- Lack of training or support on the use of the platform's service.

- Insufficient information on security and privacy issues or missing system setup documentation.
- Outdated or too complex and inflexible architectures to integrate niche solutions. This consequently results in failures in the connection to the existing infrastructure and higher development costs.





Authorities and facilitators

The group of Authorities and facilitators include, among others public authorities and policymakers who are responsible for the facilitation and provision of public goods and services to the citizens of their territories. Making use of their legal and financial instruments, they supply among others infrastructure, health and social care, local civil administration, education and safety. In Scandinavian and Anglo-Saxon countries, local administration is solely responsible for the delivery of health, social care and welfare services. Other European countries make use of a health insurance system, in which healthcare, including long-term care, is provided to citizens financed by health insurance companies (public or private). Despite the system, local authorities and insurance companies are both interested and in need to monitor and control public expenditures. Platforms (open or closed), in which demand and supply come together, offer the opportunity to set up an easily accessible, and adequate monitoring and analysis system. Because the EU focuses on the benefits of open platforms and because authorities insist on keeping the data in Europe instead of transferring them to other continents, such as the US or China, both goals can best be combined within the frame of open EU platforms. Open platforms that secure safety and data protection, are accessible to use, deliver analyses that civil servants and insurance company workers need.

- Authorities and facilitators, and organisations that procure and implement open platform services should support providers and developers of technology for active and healthy ageing to adhere to a blueprint that fosters interoperability.
- Through a unified request of care organisations and systems to providers of open platforms both supply and demand sides in the field would benefit.
- The lack of information on existing open platforms and costs related to their installation and maintenance, makes the decision-making of Authorities and facilitators during the process of purchasing new technology difficult.

- Reluctance of government officials to accept the structural change facilitated by open platforms and connected digital technology, due to certain social, educational and economic factors.
- There is a lack of understanding among the public authorities of the impact of open platforms on their daily activities and wellbeing.
- A centralised approach should be established by policy makers to create requirements for open platform providers. This will help single care organisations in their municipalities compel change on their own and create new opportunities for a higher quality of care for older people.
- Need to unify regulations and standards across Europe concerning the deployment and use of open platforms' services
- The lack of commitment on organisational and individual levels beyond the duration of a project, which is funded by the EU puts on hold any further development and commercialization of the open platforms.





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and learn about open platforms in the AHA domain, upscale your digital solutions for older people and improve the quality of care provision to your patients and citizens.

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National Research Council of Italy



Universitat
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