

# Back to the Roots: The Perspectives of Multiple Stakeholders about a Seamless Physical-Virtual AAL Advisory Service

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**Keywords:** Trust, Human Advisor, Online Advice, Digital Platforms, AAL, Ambient Assisted-Living.


**Abstract:** An articulation between the real/physical and the virtual world, i.e. an integrated service logic, is necessary for advisory service provision in the AAL field in order to best suit the consumers' needs. However, personalised feedback is generally missing on digital advisory platforms that promote assistive technologies and services. This manuscript builds on previous research carried out in the scope of the EU-funded ActiveAdvice project, that is based on the premise that, in the AAL field, an engagement platform must promote not only AAL products and services but also empower stakeholders and facilitate the co-creation of value. Therefore, the concept of an Authorised Active Advisor was created. This paper presents and discusses the results from a qualitative study carried out to refine the concept of Authorised Active Advisors, by identifying, their added value and role within an integrated AAL advisory system, as well as their profile, required knowledge and skills.


## 1 INTRODUCTION

Ageing well in the community has become a key concern and a strategic priority of the European Union and its member states, as a reaction to the societal challenges posed by the phenomenon of population ageing (Teles et al., 2017). The pressing need to develop innovative solutions to address those challenges – a demand pull – linked to substantial developments in products and services based on Information and Communication Technologies (ICT) – a technology push – have opened up an important market of service provision for older adults based on Ambient Assisted Living (AAL) solutions. The AAL concept corresponds to a new paradigm, building on ubiquitous computing devices and new interaction forms targeted at improving older adults' health, autonomy, social integration and security (Wichert and Eberhardt, 2011). Indeed, AAL products and

services have been gaining an important place in the so-called 'silver economy', i.e. the economic activity addressing the needs of those aged 50 and older including not only products and services purchased directly by those individuals but also the further economic activity generated by this spending (Oxford Economics, 2016), which is estimated to reach \$15 trillion by 2020 globally (Euromonitor, 2014). The AAL market is currently an umbrella market gathering a large variety of products and services in a wide variety of application fields (e.g. health, participation in social life, employment) (AAL Programme, 2014).

In spite of the growing importance of AAL solutions for independent ageing, previous reports highlight the fact that services within this market are often provided in isolation and in a technocentric way (Bertel et al., 2018; Teles et al., 2017; Baldissera and Camarinha-Matos, 2016). These, together with other

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well-known factors – such as the lack of public awareness on AAL solutions, as a result of faulty information, communication and transparency, as well as insufficient end-user involvement – influence the market negatively and are likely to contribute to the existing gap between technology development and its uptake by end users (AAL Programme, 2014; Doyle et al., 2013; Michel and Franco, 2014; Peek et al., 2014). Paradoxically, at the same time that those barriers to the market growth prevail, recent trends have been revealing a shift from a predominantly public market to a private and consumer or primary end-user centric market: while AAL solutions were, until recently, mostly paid by care and social services for older adults, the demand for such solutions in a private sphere, i.e. paid with consumer's own resources, is gaining visibility (AAL Programme, 2014). This market landscape evidently emphasizes the need to promote consumer empowerment regarding the process of finding and selecting the AAL solution(s) which is (are) best suited to the individual context and situation. In this sense, there is a need to propel consumer's empowerment, as consumers have been themselves demonstrating a willingness to become more active and engaged in the value creation, in what we can define as a new age of consumer engagement (Brodie et al., 2011).

The offer of high-quality advisory services for end users on AAL solutions was previously identified as a promising strategy to minimize the mentioned constraints, and to promote consumers' engagement, but the provision of such services is either missing, provided at a very small scale, or offered by product and service providers in the scope of their sales activities (Bertel et al., 2018; Siegel et al., 2014; Teles et al., 2017). Investing in ICT solutions to increase the scale of advisory services through the creation of a digital neutral/exempt advisory platform on AAL solutions was previously recognized by AAL stakeholders as a potential solution to address those issues (Teles et al., 2017). However, previous research concluded, from a platform mapping and analysis, that personalised feedback and/or advice is generally missing on websites/portals/platforms that currently promote assistive technologies and services for older adults (Kofler et al., 2016). Moreover, since the consumer journey is growing in complexity in most service sectors, we have, nowadays, rather complex service logics to consider (Peters et al., 2015). For instance, it was previously argued that both user experience and user empowerment are more likely to be improved when both physical and virtual touch points are integrated into service provision (Breidbach et al., 2014). These integrated service

logics would allow taking advantage of virtual engagement in service provision while at the same time minimizing the drawbacks from lack of physical engagement. This premise, and the associated concept of engagement ecosystem (Breidbach et al., 2014), was later applied by the authors of this paper to AAL advisory services provided to older adults and their caregivers (Bertel et al., 2018).

This manuscript builds on previous research carried out in the scope of the EU-funded ActiveAdvice project, which intends to set up a digital, pan-European advisory and decision-support platform that brings together the broad range of available AAL products, services, and stakeholders. The project is based on the premise that, in the AAL field, an engagement platform must promote not only AAL products and services but also empower stakeholders and facilitate the co-creation of value. Therefore, based on previous conclusions from this project as well as on the state-of-art, the concept of an Authorised Active Advisor was created and its conceptual discussion was published previously by Bertel et al. (2018). These advisors are a human addition to a digital advisory platform (with different graphical user interfaces (GUIs)) and act as facilitators and integrators of those different digital interfaces during the interaction process of the user with the digital platform.

This paper goes a step further by presenting and discussing the results from a qualitative study carried out to refine the concept, by identifying, based on a multi-stakeholder perspective, the human advisors' added value and role within an integrated AAL advisory system, as well as their profile, required knowledge and skills. It starts by presenting brief conceptual considerations on the adoption of an integrated logic for AAL advisory services (cf. section 2.1) and by discussing the role of human advice in the context of a digital advisory platform by presenting the concept of Authorised Active Advisor (cf. section 2.2). Next, the general approach and methodology adopted for the conduction of the qualitative study is presented (cf. section 3) and the main findings are presented (cf. section 4). Section 5 discusses the lessons learned focusing on how those can be applied and operationalized in a training course outline for Authorised Active Advisors.

## 2 CONCEPTUAL CONSIDERATIONS

In the last two decades, we have been witnessing

significant developments in the field of ICT that offer new means of interaction among stakeholders in virtual environments (Bertel et al., 2018). However, the authors previously argued, based on user studies (Teles et al., 2017), mapping and analysis of service platforms for older adults (Kofler et al., 2016) as well as on a comprehensive and critical analysis of the literature on engagement platforms and ecosystems (Bertel et al., 2018) that an articulation between the real/physical and the virtual world, i.e. an integrated service logic, is necessary for advisory service provision in the AAL field.

Hereinafter, in order to frame the qualitative study presented in this paper (cf. section 3 and 4) and the discussion generated from it (cf. section 5), two main topics are briefly approached in this section: (i) the added value of adopting an integrated logic for AAL advisory services; and (ii) the place of human advice in the context of a digital advisory platform.

## 2.1 An Integrated Logic for AAL Advisory Services

The paper size must be set to A4 (210x297 mm). There is little doubt that ICT has been working as enablers of service innovation for several service sectors. However, in recent years, a trend of ‘shifting back’ to the physical/face-to-face (f2f) interaction has been observed. Digital service providers have been expanding their portfolio from entirely virtual into the realm of additional physical experience (Bertel et al., 2018; Breidbach et al. 2014). This is the case for a number of IT organisations (e.g. Google, Microsoft), which have been detaching from a purely virtual service logic.

From a consumer empowerment point of view, digital service touch points have been allowing consumers to expect more service, information and support than before as they increasingly become aware of their influence on service provision and/or on the market. However, as digital means of interaction annul the traditional f2f interaction, the user’s acceptance can be compromised and has to be the main concern of service providers. The key aspect that might jeopardize users’ acceptance of digital services and platforms is trust in such interaction points; this, in turn, is highly influenced by the presence of community features and privacy cues in digital services as well as by their degree of personalisation and feedback (Obal and Kunz, 2013). Indeed, trust is one of the most critical issues in what concerns consumer-service provider interaction (Cummins et al., 2014), and one of the main reasons

to invest in an integrated model, i.e. digital-physical, in service provision.

The authors previously pointed out that while these arguments apply to a wide range of service sectors, they hold special relevance for the AAL market and specifically for advisory services in this field (Bertel et al., 2018). First, not only trust was shown as a key attitudinal factor for the uptake of AAL solutions by consumers, i.e. older adults (Olphert et al., 2009), as the authors concluded from a previous study that f2f interaction is perceived as more trustworthy (Teles et al., 2017). Also, as AAL solutions frequently fulfil health-related needs, consumers’ trust in purely digital services including information platforms seems to be further challenged: data security and privacy acquire increased relevance and the fear of getting low quality, biased or misleading information from non-reliable or exempt sources tends to be more evident (Marschollek et al., 2007; Teles et al., 2018).

A second argument favouring an integrated service logic for AAL advisory services relates to the specific features of AAL solutions and their market: while advice on AAL solutions is usually complex, as answering to a consumer’s need frequently requires an integration of products and services from different providers, this occurs in a context where interoperability problems still prevail and no broad and comprehensive information about products, services, and providers for consumers is yet available. Moreover, being in need of support and the possibilities to offer that support is usually dependent on the local and regional context, and accommodating such complex and context-specific logics in an optimal service provision for older adults is hardly achievable by a stand-alone digital service. Nowadays this is inevitably with nearly all online product databases or stores currently found within the AAL market. However, resorting to either f2f or digital consultancy alone on AAL solutions was reported to be time-consuming, burdensome and, most of the times ineffective (Teles et al., 2017). This might relate, on the one hand, to the conflicts of interest or limited information held by those who typically provide such f2f advice (e.g. sellers; care providers with no specific training/knowledge on such solutions) and, on the other hand, to the absence of digital advice in this field and lack of specialisation, comprehensiveness, and personalisation of information offered online (Kofler et al., 2016). Indeed, due to both trust issues and gaps in high-quality online advice, it was reported that consultation of AAL solutions happens in the virtual reality, but is often limited to a first consultancy, with

ongoing advice being searched in the physical sphere (Teles et al., 2017).

A third and last argument for a digital-human advisory integration relies on the characteristics of older adults as a consumer group. In particular, and considering that older adults are a quite heterogeneous group – which could be per se an argument for a service logic that offers two interaction interfaces – it is a fact that the digital divide still affects this population group (Negreiro, 2015) and that preferences for f2f contact are still reported. Despite a decreasing trend of the digital divide within this group, older adults are still often confused by technology options, lack confidence using online channels, and their readiness to accept technological solutions depends on many individual aspects such as education, age, gender, physical, mental and cognitive skills, expectations or biographical experience. Even if barriers associated with ICT skills are expected to decrease in future generations (Reginatto, 2012), as it is hard to predict to what extent and speed that will happen and how preferences will evolve, an integrated logic for AAL advisory services might be better able to accommodate future trends.

The challenge now, especially in the verification of a recent shift from a predominantly public market to a private consumer-centric market, is to find how to integrate both virtual and physical dimensions in an optimal solution for AAL advisory services. This is further discussed in the scope of the proposed figure of ‘Authorised Active Advisor’, presented in the following section.

## 2.2 Human Advice in a Digital Advisory Platform

The premise, discussed in the previous section, that an integrated service logic for AAL advisory services would best suit the consumers’ needs – i.e. older adults and their caregivers – and best promote their empowerment, was extrapolated to the developments within the ActiveAdvice project, with the conclusion that the digital advisory platform developed in this project cannot be a stand-alone solution (Teles et al. 2017). Rather, it has to be part of an integrated and systematic service logic, incorporating both virtual and physical services and promoting the integration of different actors with diverse interests and contributions. Therefore, and as described above, the concept of ‘Authorised Active Advisors’ was born within the project. These advisors act as a human addition to the digital platform and can help increasing personalization in AAL services,

empowering the consumers in making decisions, enhance trust in AAL advisory and encourage older adults to participate in digital communities (also contributing to the minimization of the digital divide still affecting this age group). They will also contribute to raising awareness of AAL in general.

The main task of the Authorised Active Advisor is to assist the individual person in finding the right solution for their problem or goal. They, thus, (i) have to be able to listen to the needs of the end user and translate those into a search strategy that complements the digital advisory component; (ii) be able to identify relevant solutions and suppliers, and to assess their pertinence towards each situation; (iii) to assist and guide the individual during the decision-making process; and (iv) to follow-up on satisfaction and stimulate users to provide feedback on the platform (Bertel et al., 2018; Denis, 2017).

The potential target group addressed by the human advisors is diverse and in accordance with the AAL stakeholders (Nedopil et al., 2013). In general, the following stakeholder groups have been identified within the ActiveAdvice project (see Table 1) and form the basis of the further delineation of the potential target groups (based on Kofler and Schmitter, 2017; compare Teles et al., 2017).

Table 1: AAL Stakeholders Groups.

Consumer	C1 Older adults aged between 55 to 70 years old, characterized by being active and autonomous. Includes older adults who decided to invest in a new home and/or who wish to think ahead and adapt the house for upcoming chronic illnesses and future loss of autonomy.
	C2 Older adults who are facing a loss of autonomy and wish to live longer at home.
	C3 Relatives and/or informal caregivers of older adults. This can be because of effective loss of autonomy (therefore forced to find a solution), but also to prevent further degradation, loss of functionality and autonomy (prevention).
Business	B1 Suppliers of solutions (products, services or a combination)
	B2 Suppliers of solutions and services that could take a role as “active advisor”



Table 1: AAL Stakeholders Groups. (cont.)

Government	G1 Suppliers of services or solutions. This can be under normal market conditions (e.g. a provision of home assistance services), or under subsidized schemes for specific target groups.
	G2 Suppliers of services assessing the needs of older adults and directing them towards the right solution or service. This segment could play a role as “active advisor”.
	G3 Policy makers at local, regional and national levels. Policies linked to ageing, living longer at home, health services, and home care services.
	G4 Public Services, senior organizations, interest groups, care cooperatives

The main target group of Authorised Active Advisors is the first stakeholder group – ‘Consumer’ (AAL2C). As described above, older adults are still facing much difficulty when it comes to technology. The challenge is, therefore, to understand each person’s individual situation and provide the most suitable AAL solution.

Besides the primary target group, informal and formal caregivers play a vital role in the decision-making process. Similar to older adults, formal and informal caregivers possess heterogeneous competencies, interests, and needs, and can benefit from AAL technologies. Informal and formal caregivers can either recognise technology as beneficial in supporting them or as a concern, as they fear technology may reduce the quality of personal care (e.g. privacy loss, increased loneliness). This aspect should be taken into consideration by human advisors dealing with formal caregivers.

### 3 GENERAL APPROACH AND METHODOLOGY

A qualitative study was conducted to identify, based on a multi-stakeholder perspective, the human advisors’ added value and role within an integrated AAL advisory system, as well as their profile, required knowledge and skills. In this sense, several activities were carried out by the consortium in order to delineate the concept of Authorised Active Advisors, and to create a training outline based on an explorative analysis of their needs and requirements. Besides a range of workshops within the consortium

and desk research, two workshops with a total of 14 participants and a number of 15 semi-structured interviews with 16 different stakeholders that potentially fit the human advisor profile were carried out. In addition, insights gathered from the end-user tests were taken into consideration. Figure 1 shows the logic of these activities.

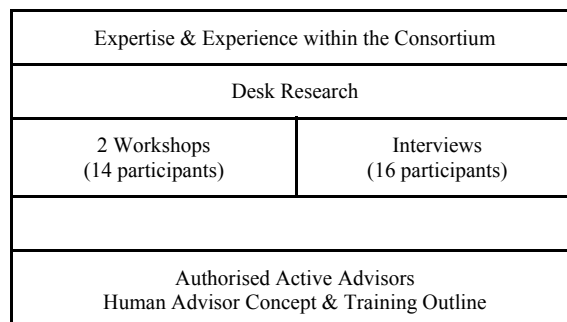


Figure 1: Approach and methodology.

In particular, both workshops and semi-structured interviews were aimed to answer the following set of questions:

- What are the benefits of Authorised Active Advisors in addition to the digital advisory platform, and who are their target group(s)?
- What is the profile and role of an Authorised Active Advisor?
- What kind of knowledge and skills are needed to become an Authorised Active Advisor and how should that knowledge be delivered (i.e. which training concept are they looking for/would make sense for their specific case)?

The two workshops took place at the AAL Forum 2018 in Bilbao, Spain and in the Netherlands, respectively. While the workshop at the AAL Forum involved members of the AAL community, the workshop in the Netherlands involved employees of the municipality of Alkmaar, providing advisory services to older adults and their relatives and informal caregivers. The interviews were carried out in five different countries of the consortium partners: Austria, Belgium, Netherlands, Portugal, and the UK. A qualitative analysis was performed using the method of data matrices based on Nadin and Cassell (2011). All answers were transferred as summaries into a matrix. Each of the sections of the matrix was subdivided; the columns were labeled with the corresponding codes linked to the research questions, and the rows contained the respective interviewee. For each interview, a summary was written (case description per row) to better understand individual assumptions. A summary for each code (per column)

was then added and grouped into: Benefits of the Authorised Active Advisors; Profile of the Authorised Active Advisors; Skills and Knowledge of the Authorised Active Advisors. The insights arising from these activities are presented in the next section. They are neither exhaustive nor are they representative, as an explorative approach was chosen given the nature of the knowledge we aimed to produce.

## **4 AUTHORISED ACTIVE ADVISORS – LESSONS LEARNED**

As result of the analysis, we were able to foresee and gather some valuable insights regarding the (i) benefits, (ii) profiles, and (iii) skills and knowledge of the Authorised Active Advisors, thus contributing to the debate and to the development of a training outline.

### **4.1 Benefits of the Authorised Active Advisors**

The value proposition of the Authorised Active Advisor contemplates benefits for all three target groups of the ActiveAdvice project – consumers, businesses and governments –, following the multi-stakeholder approach of the ActiveAdvice project. First and foremost, the ‘consumers’ target group directly benefits from the Authorised Active Advisor, whose activities consist in assisting older adults to access AAL content, helping them to choose and buy products and services, recommending technology that will support them and providing comprehensive information and knowledge on AAL solutions. Studies have shown that many older adults are not aware of existing technologies that have the potential of improving their lives (Peek et al., 2016). The concept of AAL itself is not understood by end users as it is generally defined, being documented that users’ concept of technology is less exclusive by including devices that are not ICT-based (e.g. home adaptations; Peek et al., 2016). Therefore, the literature is prolific in calls for delivering awareness and training to all stakeholders about the opportunities and challenges in the AAL field (Agbakoba et al., 2015; Nieboer et al., 2014; Olphert et al., 2009). Older adults, as well as their relatives, have a preference to receive advice f2f (Teles et al., 2018; Teles et al., 2017), as this allows personalisation, which constitutes a major benefit

since it gives response to the users’ needs. In fact, the Authorised Active Advisor can guarantee that there is a proper response to the consumer’s real needs, articulating those with the right product/ solution and avoiding, at the same time, an information overload that could be harmful to the decision process. The existence of an Authorised Active Advisor also contributes in tackling social isolation by establishing human interaction, which consequently has a major impact in gaining the user’s trust (Damodaran and Olphert, 2010; Novitzky et al., 2015; Olphert et al., 2009; Siegel et al., 2014; Teles et al., 2017) and reducing the fear of losing social contact (Lewin et al., 2010). By fostering confidence among older adults in using online channels, the Authorised Active Advisor further helps them to regain self-confidence and, consequently, become more independent.

Although Authorised Active Advisors plays primarily an advisory role towards consumers, both businesses and governments also benefit from them. Reducing stigmatization of AAL technologies, promoting market equipment attractively and offering differentiation over other catalogue websites (that do not contemplate a human advisor component) are some of the positive impacts on businesses. This is of high relevance, as many enterprises in the business field of AAL are struggling with demonstrating the return on investment of their solutions to the client (Reginatto, 2012). Moreover, lack of general public awareness about AAL technologies and their potential benefits is identified by business stakeholders as one obstacle to introduce and succeed with this products and services in the market (Balta-Ozkana, et al., 2013). Authorised Active Advisors can help to overcome this challenge. In addition, Authorised Active Advisors are able to provide expert feedback on users’ evaluation of AAL products, feeding the ActiveAdvice platform with professional feedback and testimony, which is preferred to direct user feedback by consumers (Teles et al., 2017; Teles et al., 2018).

For governments, the existence of the Authorised Active Advisor has the potential to increase the number of people self-funding AAL solutions and, on the other hand, to reduce the number of people using council services. Research has shown that governments have a significant role in supporting AAL adoption through defining regulation, funding and participating in R&D projects, and participating in the commercialization of products and services (Ehrenhard et al., 2014). In addition, it has been stated that governments are motivated and need to invest in awareness campaigns focusing on AAL solutions in order to demonstrate its benefits, as well as to explain

about their security and privacy risks (Wright et al., 2007; Reginatto, 2012).

In summary, the existence of an Authorised Active Advisor has several benefits, since:

- They listen to the consumer’s needs and translate those needs into a search strategy that complements the digital advisory component;
- They identify solutions and suppliers and assess their pertinence towards each situation;
- They assist and guide the individual during the decision-making process;
- They follow-up on satisfaction and stimulate users to provide feedback on the platform;
- They feed the platform with professional feedback/testimony.

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#### 4.2 Profile of the Authorised Active Advisors

As human advisors are considered one of the core concepts of the ActiveAdvice project, a clear definition of the intended profile that is aligned to the core values of the project and the business plan is needed. Initially (Bertel et al., 2018), the consortium explored four options or possible profiles for Authorised Active Advisors: (i) professionals in the process of assisting older people (e.g. occupational therapists, care workers, architects); (ii) volunteers (including retired persons interested in AAL solutions and associates of user associations); (iii) public sector employees (e.g. within a municipality, or other sectors such as home adaptation, energy etc.); and (iv) suppliers of solutions. Having these different possibilities in mind, the data we gathered from the interviews and workshops proved to be of crucial importance since it allowed us to refine the profile.

In this sense, and from the participants’ perspectives, we conceptualised two advisor profiles: the human advisor primarily either (i) works in an existing organisation or a business within the ageing and care market (AAL product development, AAL advisory, sales and marketing, social care organisations, education, and governmental bodies) (profile A) or (ii) has practical care/ medical experience and know-how in dealing with older people (i.e. gerontologists, occupational therapists, social educators, etc.) (profile B). The importance of having someone with (professional) experience in the

ageing field was stressed by participants and is in accordance with the possibilities already considered by the consortium.

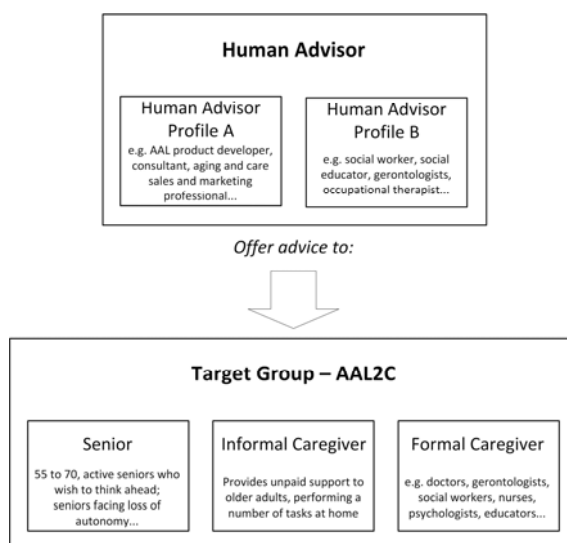


Figure 2: Human Advisor Profiles and Target Groups.

Figure 2 above illustrates the advice offered by the Authorised Active Advisors to the different target groups. As it can be seen, there is no distinction made between the human advisor profiles and the end-user target groups. Rather, the appropriate support is offered on an individual basis. There are two main human advisor profiles (see Figure 2 above) who can offer advice to one of the three main target groups that are either seniors, informal caregivers, and formal caregivers. Because ActiveAdvice guarantees a comprehensive training concept for all human advisors, the quality of advice offered by either one of the profiles is mutual.

#### 4.3 Skills and Knowledge of the Authorised Active Advisors

Participants also highlighted two main areas in which human advisors must demonstrate knowledge and expertise: (i) social skills and (ii) knowledge about ICT/technology and AAL. It must be noted, here, that interpersonal relationship skills – like empathy, patience, communicational skills, etc. – were considered to be more important prerequisites than technical or AAL knowledge.

Besides the two main areas pointed out above, human advisors should also have a general understanding of the ageing process and its different challenges - “it is important that this person has some knowledge of main diseases or health problems associated with the ageing process, like dementia for

example. Also, they should have some knowledge of the difficulties underlying people's lives, for example, know or have some information about the context where the person lives, their health conditions, what they need..." (PT).

In addition, as Authorised Active Advisors will also be promoting the ActiveAdvice platform, some general knowledge regarding the ActiveAdvice project is mandatory, namely, what the ActiveAdvice consortium stands for, what the core values are and what the vision and mission of ActiveAdvice are. Lastly, human advisors need a certain flair, social commitment and intrinsic motivation to offer advice and assist older adults in their local community.

In spite of existing knowledge potential human advisors from both identified profiles bring with them, it is necessary to provide further training for these groups to ensure that the Authorised Active Advisors have the necessary knowledge for their tasks.

## 5 DISCUSSION AND CONCLUSIONS

Advice is considered a key service that can have a great impact on and bring significant benefits to people who resort to digital platforms for advice. Previous work from the ActiveAdvice project shows that, for example, end users want to learn which products or services are useful for their specific situation, what makes their 'life easier' or where and how to find a specific product. Especially with a shift to a private consumer market, empowering the individual consumer with targeted advice minimises constraints in the AAL market and allows co-creation of value. The ActiveAdvice platform provides the much-needed information on AAL products and services, and thus helps the users to gather detailed insights before buying a product or asking for a service. The Authorised Active Advisor, as a human addition to the digital platform, is a necessary and important complement; and they have the potential to impact the uptake of the ActiveAdvice platform as well as AAL solutions in general. They fill a gap that an otherwise exclusively digital environment cannot provide, i.e. the possibility for personal contact and human touch (which increases trust), and context knowledge for the individual situation, thus boosting confidence, especially of older users of the platform.

There are some reasons constraining end users to use or access online platforms, namely the lack of trust in online-advice. Security, trust and safety are

main issues when discussing the acceptance of internet for commercial interactions. Lack of trust in ICT use and fears regarding access to personal data by others seems to prevent older adults from carrying out online transactions (Olphert et al., 2009). Furthermore, online advice can also be biased, since it might not always be transparent who is giving advice or their link to the products/services they are advising on. The integrated service logic connected to the concept of Authorised Active Advisors allows personalisation of feedback, increases trust as well as the quality of advice, as AAL solutions are usually complex and often need integration of products and services from different providers and stakeholders, as outlined above. In this sense, having a human advisory component in addition to the purely digital platform could have a great impact in the way users resort to the ActiveAdvice platform. This was already raised during the requirements analysis of the ActiveAdvice platform (Teles et al., 2017), and confirmed by the human advisor interviews.

According to a previous study carried out within the ActiveAdvice project (Bertel et al., 2018), an Authorised Active Advisor can be conceptualized as a mediator between AAL providers and consumers, helping users with the process of informed decision-making – a human touch to the ICT platform.

The following added values are the main impact of the Authorised Active Advisor:

- Personal contact and human touch;
- Trust;
- Context knowledge;
- Ability to fill gaps in the digital advisor system;
- Confidence;
- Decision support.

In line with these core values, the ActiveAdvice technical solution – which aims at providing decision support and information –, offers the tools and intelligence to the Authorised Active Advisors to provide end users with up-to-date, useful and applicable knowledge about AAL products and services, options for financial support and customer feedback, and the possibility to share experiences and knowledge within a community of Authorised Active Advisors.

However, many open questions remain regarding the human advisor concept. First, trust in the advisor is a core question – requirement interviews carried out within the project (Teles et al., 2017) showed that a concern is around the neutrality vs. expertise of the advisor (for instance business actors perceived advice as being best given by those who sell a product, who are, on the other hand, 'not neutral' actors). Second, growing old and being in need for care is a rather local



experience, therefore different advisor profiles are probable to emerge in distinct local realities. It is up to the ActiveAdvice project to come up with a detailed training concept to provide the necessary knowledge and leverage the full potential of the integrated service logic.

## ACKNOWLEDGEMENTS

The authors would like to acknowledge the co-financing by the European Commission AAL Joint Programme and the related national agencies in Austria, Belgium, the Netherlands, Portugal, Switzerland, and the United Kingdom. One of the authors is individually supported by the Portuguese Foundation for Science and Technology (FCT; D/BD/135496/2018; PhD Program in Clinical and Health Services Research (PDICSS)).

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