

Service Innovation for New Care Landscapes: A Case Study on Safety in Senior Living and Care

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Abstract

The care landscape for elderly people in Switzerland is changing rapidly. Until recently, seniors in need of care either stayed at home or, when in lack of formal or informal care networks, moved to a care facility. In future, elderly people will have an increasingly broader and more specific spectrum of expectations on how to cope with their growing disabilities. Providers in this field need to urgently adapt their supply chains, processes and business models. Some have already started to create innovative care landscapes. Such modern care facilities are generally more integrated - functionally as well as socially - into their neighborhoods and offer care services in different places. This paper discusses, from a strategical perspective how such new healthcare landscapes with new service models under the premises of a technological shift can be established. The hereafter presented case study is part of a multi-phase consultancy project. The focus lays on the first crucial phase when it comes to selecting the right safety solution for senior living and care. The results are based on expert interviews, future workshops and a Delphi analysis. They indicate, that besides the need for a moderated and structured process - to best incorporate different stakeholders' requirements into a modernization process - there are four other issues of interest to be further investigated: I) Examining the emergence of new care landscapes that focus on new living and care models, II) increasing the awareness and knowledge of decision makers in senior living and care, III) defining new roles needed when integrating technological solutions, and IV) characterizing the future customer profiles. Lastly, the authors outline their arguments why the role of Facility Managers in that context is a crucial one.

Keywords: Ambient assisted living AAL, care facilities, non-medical support service provision, safety

Introduction

In general, the Swiss healthcare sector faces several major challenges, especially economic, social, and technological. Decision-makers are facing increased financial pressure, disruptive concepts and technologies, changing stakeholder needs (Hofer & Rohrer, 2011; Honegger et al.,

2016). These are particularly pressing in hospitals and for institutional (senior) care providers. Switzerland already experiences an increased demand for care personnel, which, until 2030, will be extremely difficult to satisfy, as for the institutional care, an increase by 44%, and for the formal ambulant care, by 57%, is prognosticated (Obsan-Bulletin 12/2016). The pressure is further increased by the demographic changes. People above 65 will account for 23% of the total Swiss population by 2030. Moreover, the number of people above 80 is growing even more rapidly. While in 2015 there were 420'000 people aged 80 and older, this number will rise significantly to 690'000 by 2030 and to 1.06 million by 2045 (Bundesamt für Statistik 2015).

Institutional senior care providers in Switzerland are also under pressure to adjust the scope of their services in terms of quantities and qualities to a clientele with new expectations. Höpflinger (2009, 2014), in this context, speaks of a generational change. And growing old outside institutional care facilities is increasingly becoming a valid option. Michell-Auli (2011), Spath et al (2012) and Rüeegger (2014) foresee a need for care facilities to extend their service offerings to the immediate neighborhood to people in need for care and support in their day-to-day activities. Therefore, care facilities are in need of developing new business models that include service cooperations, improved structures and processes, as well as adapted services that are highly individualized. One of the cornerstones of this shift will be the introduction of new digital technologies. It is clear then, that senior care providers must be aware of the technological shift and its potential to be ready to invest in the right solutions.

Overall, the healthcare sector is under pressure to invest in digital technology solutions (European Union, 2015). Especially within the elderly care industry there is a push for more technology-based solutions to meet the critical challenges in providing care for the future (European Commission, 2017). In Europe ambient assisted living (AAL) has become the 'umbrella' term for ICT-based services and products that support ageing well at home, within the community and at the workplace (Aguzzi et al. 2018). Over the years the European Union has therefore allocated 600 million euros for the Active and Assisted Living Programme (European Commission, 2017). To better understand the scope of AAL solutions, the so-called TAALXONOMY, a classification system for AAL products and services, was developed. AAL solutions can be categorized among others, in health and care, living and buildings, safety and security, mobility and transport, work and training, and information and communication (Leitner, Neuschmid & Ruscher, 2015). Whilst all areas are of interest for the healthcare sector, safety and security is arguably one of the most prominent examples of the AAL categories. Safety, or moreover the increase in safety, is recognized as one of the main benefits of adopting technology for senior living and care (Offermann-van Heek & Ziefle, 2019). Applications include building surveillance, locking systems, fall detections, or emergency management systems, etc. (Leitner, Neuschmid & Ruscher, 2015). Though many would argue that currently elderly people are not interested in these solutions, it has been shown that when it comes to emergency detection, the acceptance of the users towards introducing assistive technologies increases (Offermann-van Heek, Schomakers & Ziefle, 2019). Importantly, many safety applications fall within the scope of the non-medical support services (Gerber 2016) and are therefore relevant for Facility Management (FM). It turns out that FM is often at the intersection between various processes (medical and non-medical) and must deal with a diverse range of stakeholders. FM is under pressure to not only guarantee the service provision, but also provide it in an efficient and effective way. It is argued here that when it comes to introducing AAL solutions in the light of

new care landscapes, FM could play a leading role in the future. Hereafter, the authors will discuss a project of senior care living. It provides an understanding on how the changing healthcare landscapes in senior living impact the service provision and the emerging opportunities to develop new innovative services with a focus on safety.

“Neighbourhood Bronschhofen”: A New Concept for Senior Care and Living Services

The “Neighbourhood Bronschhofen” project, realized by Thurvita AG, a Swiss limited company based in Wil, Switzerland is designed after a living and care model introduced by the Swiss Association of Care (Curaviva). The focus lays on an optimized care provision for different customer segments across different facilities including specialized care centers and people living at home. For the Bronschhofen neighbourhood project the Curaviva model was introduced and adapted, with an emphasis on safety.

Rethinking the Senior Care Landscapes

The Curaviva living and care model (Leser 2016) facilitates a flexible service landscape to provide primary and senior care. It differentiates between different customers in need of different services. Such services are provided either in a specialized context or in the living environment of the care customers. The guiding principle is to offer people to stay in their preferred living environment as long as possible. Thereby, the model integrates the immediate living area, the apartment itself, and the surrounding neighborhood. Services in the framework of that model are meant to be organized and offered from a centralized health (care) center. This includes services provided to all, the individuals living at home, within a senior living environment, or to specialized health care environments.

In 2016, Thurvita AG initiated a new building complex project; thereby it attempts to realize a project that provides high-end services within a sustainable living environment. Based on the guiding idea of “growing old in your neighborhood”, Thurvita AG intends to realize a building project within which collaboration and service integration is an important characteristic. The aim of the project is to create a highly integrated and lively neighborhood; this will be fostered by the co-existence of different tenant groups (seniors, singles, and families), the colocation of different services (of primary care), the availability of services beyond care, the openness towards the surrounding neighborhoods, and the integration within a wider care landscape. The “Neighbourhood Bronschhofen” building complex project and the intended new neighborhood will be a place to live, to work, and to interact. From the total build-up area, 73 % will be used for apartments (and their enclosed infrastructure) and 25 % for specific services. 34 apartments are specifically planned for senior living, whereas the other 44 apartments are designed for families. The senior living apartments have been approved by the cantonal government to be transformed into ‘virtual care’ facilities, in case a person needs 24/7 intense care services. This is considered a milestone in the realization of the project, as so far intense care only could be provided in specialized care facilities.

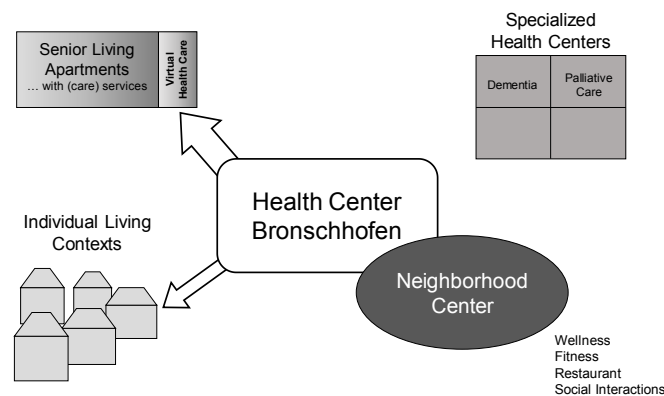


Figure 1. Neighbourhood Bronschhofen Living and Care Model (adapted from Leser, 2016)

In the “Neighbourhood Bronschhofen Living and Care Model” the health and the neighbourhood centers are key to a successful integration of residents and people from the closer vicinity (see figure 1). Consequently, living and care services will be provided within an appreciative social, stable, intergenerational and demand-oriented environment (Michell-Auli, 2012). The real innovation from the perspective of the senior resident and his or her relatives, however, is the provision of the ‘virtual health care’. Sophisticated systems will guarantee that people can stay in their homes - even when they are in need of long-term care (Solaimani et al., 2013; van den Broek et al., 2010). Thurvita AG became interested in the use of smart and assisting technologies to support their residents to maintain their health and functional capabilities and to enhance safety.

Process and Service Innovation: Safety in Senior Living and Care

Thurvita AG also needs to develop services that facilitate the realization of the above-outlined model - both in terms of the new living and care model as well as their future residents. The model clearly implies a restructuring of the entire care supply as well as the non-medical support processes. The authors therefore believe, that, to successfully turn the model into reality, the decision makers need to be challenged to seek for innovations, both on the product and service levels. The service portfolio must be adapted to better meet stakeholders’ needs. For the “Neighborhood Bronschhofen” project the various stakeholders involved in the building complex project not only recognize the changing needs and expectations of a growing and rather heterogenous customer group, but are also open and interested in developing these new services and thereby to implement new technologies. The ‘first priority’ area of action has become safety. They expect their future clients and residents to be highly sensitive when it comes to occupational safety and health protection. Only one single failure may result in a dramatic accident with substantial damage to people and the reputation of the organization.

Safety has been identified as a value-added service in favor of facilitating the above outlined living and care model as well as in favor of serving the very different residents’ expectations when it comes to independent living (Bruhn and Hadwich, 2014). Safety within the new “Neighborhood Bronschhofen” project will be key to a better service provision. This is thought to become a universal selling point. The challenge, however, lays in balancing different safety understandings

and requirements of the key stakeholders, in the identification of technical requirements, in the development of a specification sheet to identify potential solutions, as well as in evaluating the potentials to transfer the safety concept into other contexts with other user groups within the Thurvita AG. If this process succeeds, new service innovations can be realized.

Methodological Approach and Results

To best identify the different safety understandings and requirements within the context of the Thurvita AG and under the premises of different stakeholder interests, three workshops with six participants at a time, a two-round semi-structured Delphi method and semi-structured interviews with the leadership team of Thurvita AG, including members of the team management's ambulant and institutional care, were carried out. In this phase neither residents nor any family members participated; the so-called end-user perspective has been evaluated based on literature analysis only.

Methods

Workshop 1 & semi-structured interviews: The overall aim in workshop one was to better understand Thurvita AG's concept as well as its underlying management ideas of the planned "Neighborhood Bronschhofen" project. Safety issues can be approached from various perspectives: stakeholders, technology, structures and processes, as well as architectural and locational preconditions. A nine-field case analysis of typical care cases and their safety requirements from the perspective of the management team were developed. The semi-structured interviews were carried out in parallel. The technical manager and the care team leader helped to better understand safety requirements in the specific setting of a senior care facility.

Workshop 2 & two Delphi rounds: The second workshop clarified the final safety requirements and reflected on the technical specifications and the integration of the safety solution integration requirements within the service portfolio of Thurvita AG. The workshop was followed by two Delphi rounds. The participants were provided with a questionnaire, which they answered within one week; the analysis took a week, after which the participants were then provided with the same questionnaire; however, including all anonymous answers from all participants from the first round. Again, after one week, the questionnaires were analyzed, and the participants provided with the results. The management team was required to answer within a very short period of time and to finally reflect on the safety expectations of their future clientele, on technological and inter-professional interfaces, and on emergency call information.

Workshop 3: The third workshop verified the results of the Delphi method and finally provided the research team with the specifications for the safety infrastructure within the senior living apartments and in the overall "Neighborhood Bronschhofen". It laid the ground for the next phase during which five technology providers have been contacted to present their products and services.

Results

The "Neighbourhood Bronschhofen" will qualify as a collocating living and working environment and, as outlined, technological inventions are progressively considered an option to optimize the (care) service provision. Because of the spatial proximity to the residents and the other neighborhoods, Thurvita AG's management team decided to choose a safety system that is less intrusive and would leave the residents with the option to either use it or not. They decided for a

plug and play system, to be used easily by different stakeholders, sensor-based and adaptable over the course of time. The system can be installed flexibly based on the required needs in every apartment. Due to the spatial proximity to the health center, Thurvita AG decided to promote a system that helps to manage emergency situations, rather than to invest in a system that would also allow taking prevention measures. Finally, the requirements have been reduced to three: a) mobile emergency call, b) tracking of a person within the built environment and, in case of emergency, c) the ability to talk to the distressed person. Tracking outside the building and in the wider area is provided to selected people only. Door open sensors are considered add-ons and could be installed, but would not be part of the basic service offer. The system chosen has easy to manage interfaces to include other eHealth solutions and can be integrated into smart home systems.

Conclusion

From the presented case study four key areas of importance and the ramifications for FM are concluded:

1) As outlined above, new living and care models, as well as technological innovation, potentially result in adapted or new services – including FM related ones. On the one hand, we can expect a change in the overall design of care landscapes. People are expected to stay longer at home. Consequentially, the typical senior care home will become obsolete. This is going to be possible due to telemedicine, AAL, and smart living technologies (Brockes 2018). Thus, also new service portfolios will have to be developed; institutional players, besides informal actors, are in need to create service solutions beyond their institutional boundaries. On the other hand, formal living and care will experience a dramatic change with respect to what services will be needed, who will provide them and how. Care as well as the non-medical support processes will be affected likewise. The innovations here are service ecosystems and the use of digital platforms to better access service landscapes.

2) Digital trends and their effects on the senior living and care industry will be tremendous. Yet, we observe decision makers in senior living and care facilities still being largely dismissive of smart and assisting technologies. There is a lack of knowledge and awareness of solutions. There is a need for more highly visible flagship projects and success stories of the use of digital technology and their effects. As Schmitter and Kofler (2018) underline, the healthcare sector not only is under economic pressure but also under the pressure to become more innovative. The presented “Neighbourhood Bronschhofen” case on safety highlights the opportunity of FM to seize the opportunity as an innovator in this sector.

3) The “Neighbourhood Bronschhofen” project shows how the integration and collaboration of key stakeholders in primary care as well as secondary care, in an intensive interaction between the different resident groups, and in a service landscape that is used by customers, that do not belong to the own core clientele, from within the neighbourhood and the outside, can be beneficial. Under those circumstances however, the complexity of dealing with multiple stakeholders increases. The process that Thurvita AG has gone through when evaluating and introducing the new safety concept highlights the importance on effective communication and the multi-stakeholder approach. The authors see clearly a new role that has not yet been assumed by any particular actor. This key actor understands the unique nature of the organization, can deal with different stakeholder perspectives, identifies critical interfaces and has a sound understanding of the

infrastructure and technology. When examining this more closely it appears that FM could potentially fit this role. Within this context there is clearly an opportunity here for Facility Managers to take up the responsibility for leading the technological change process, as they have a holistic understanding of an organization.

4) Get to know your client: Gaugisch et al. (2012) identified 15 customer types when it comes to senior living. One of their key conclusions is, the more people appreciate technology the less they prefer to live in institutional senior living and care facilities. Thurvita AG takes that contradiction into consideration and intends to offer high standard living and optional care within an environment that allows people to live independently and grow old in their own place because of the use of technology. Teles et al. (2018) underlined with their research that stakeholders make different experiences. Therefore, it is advisable to regularly learn about their needs and to evaluate them. When discussing the safety solution, Thurvita AG recognized different demands and decided to promote a system that offers different functions to different user groups.

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