

THE BENEFITS AND CHALLENGES OF CO-CREATION WITH SENIORS: AN INTERDISCIPLINARY SOCIAL INNOVATION PROJECT DESIGNED TO IMPROVE QUALITY OF LIFE

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Abstract

The Senior Living Lab has run a number of participatory workshops with seniors with a view to brainstorming and developing products and services to improve the quality of life of ageing populations in Switzerland. This project aims to combine and adapt design thinking and living lab methodologies to be suitable with elderly participants. It gathers various qualitative techniques and deploys an interdisciplinary methodology based on community-based participatory research. This living lab project highlights the key success factors and the challenges in order to successfully involve seniors during complex innovation processes, such as time essential to tackle logistic issues and the ability to adapt participatory initiatives to an elderly public.

Keywords: *co-creation, innovation, social innovation, living lab, old people, quality of life*

1 - Introduction

This is of particularly major concern in Western societies where the population aged over 80 is set to number more than half a million by 2050 (Lalive d'Épinay & Cavalli, 2013). In Switzerland, as in most other Western countries, the demographic trend heralding an explosion in the number of seniors aged 60 or more, according to forecasts by the Swiss Federal Statistical Office (2015), and an increase of 80% between 2015 and 2045, is of major concern. Today in Switzerland, people aged 65 and more represent 18% of the population (OFS, 2015).

Population ageing not only is a key challenge to our health systems, which is why public policies are taking it extremely seriously, but also offers significant market potential to many firms, a market dynamic now dubbed the “silver economy”. The ageing of the population in Western economies constitutes a scientific research field and only an interdisciplinary approach, bringing together such disciplines as sociology, epidemiology, developmental psychology, nursing sciences, gerontology, not to mention economics, engineering and design, can offer a clear overview of this phenomenon.

Many products and services are developed for the elderly, but usually by engineers or marketers who are unfamiliar with this target population, its needs, concerns and desires. It is therefore important to listen to potential future users (Davenport, Mann & Lutz, 2012). The Senior Living Lab project aims to respond to this challenge by developing and experimenting methods of co-creation and innovation with seniors. This article presents the background, methodology and approach of the Senior Living Lab project, identifies the key success factors and the challenges faced on data collection and the responses provided by the Senior Living Lab interdisciplinary team.

Background

The Co-creation of Products and Services in Partnership with Seniors and Firms

Insofar as, according to Luc Broussy, President of France Silver Economy, “the silver economy is not a new industry but rather a dynamic between actors¹”, co-creation is a particularly appropriate way of developing innovations suitable for seniors as one of several groups of actors within a particular ecosystem. Innovation is effectively a network wherein instances of innovation should be seen as a process in which all actors within a network (including customers) are able to mobilise their resources and thereby become “co-innovators” and co-

¹ <https://www.silverautonomie.com/index.php/actualites/162-la-silver-economie-quelle-origine>, last accessed 16.05.2018

create value for themselves and others (Mele, Russo-Spena & Colurcio, 2010). Success in developing new projects depends on understanding customer needs and the active involvement of these very customers in the process of innovation increases the likelihood of new ideas being successful (Kristensson *et al.*, 2004). The issues of quality of life and active ageing are intrinsically interdisciplinary and research in this area requires the cooperation of different actors (seniors' associations, public bodies, municipalities, firms, researchers, laboratories, etc.). Notwithstanding, firms in particular still find it difficult to properly identify the ageing population (Boulbry, 2003). By the creation of a community of actors, linked directly to one another or through a neutral broker (researchers), it is possible to foster a better understanding and awareness of everyone's needs and limitations by all stakeholders concerned.

The senior market is of particular interest to companies and can, according to Boulbry (2003), be summed up as follows: i) a large and growing population; ii) considerable purchasing power in the case of seniors towards the end of their working lives or at the beginning of retirement; iii) a tendency towards high consumption; and iv) great brand loyalty. Nevertheless, there are two impediments to companies seeking to conquer markets belonging to what is known as the "silver economy", namely i) a fear of being unable to have it both ways, that if, by attracting a senior clientele, they will lose their young clientele which they see as more sustainable; and ii) a difficulty in properly identifying this public (Boulbry, 2003).

Value co-creation can be defined as an interactive process involving at least two volunteer actors engaged in specific forms of win-win collaboration which leads to value creation for these actors (Further, Frow, Payne & Storbacka, 2011). Customers are no longer "passive" but instead "active co-creators" (Prahalad & Ramaswamy, 2004) who, by their very involvement in the creation or development process, seek to construct their own identity, express their creativity, enjoy memorable experiences and socialise with other customers (Gambetti & Graffigna, 2010).

The aim of co-creation is not so much to speak for seniors but to let seniors concerned by particular topics speak directly. The different services and products designed by seniors, and then developed in close collaboration with all the stakeholders in the living lab (researchers, seniors, firms) are the fruit of a number of mutual agreements arrived at by a group of seniors. The collective intelligence generated during these participatory initiatives is all the more interesting insofar as it represents a series of consecutive mutual agreements arrived at by a group of elderly people. As they have aged, by their life courses and their own personal, social,

family or professional experiences, they have become very different one from the other in terms of lifestyles, needs and consumer habits (Dayez, 2014) and therefore represent a less homogeneous cohort than that of younger participants.

An Interdisciplinary Research Laboratory tackling Issues of Healthy Ageing

It was in this context that several member schools of the University of Applied Sciences and Arts Western Switzerland HES-SO joined forces and launched an applied research project, the Senior Living Lab, funded by Gebert Rüt Stiftung² between 2014 and 2016. These schools (School of Engineering and Management, Vaud, School of Higher Education in Art and Design (ECAL), School of Engineering and Architecture, Fribourg, School of Nursing La Source) were in a position to provide interdisciplinary skills in engineering, design, health and economics.

This interdisciplinary laboratory was designed to develop practical solutions (products and services) in the area of active ageing through collaboration and dialogue between public and private actors, universities, associations, foundations and individuals. The ecosystem created within the living lab, coordinated by the research team, binding together the different actors, along with the deployment of innovation techniques (design thinking, co-creation and ideation workshops) drove the development of new ideas, recommendations, products and services.

The aim of the Senior Living Lab within this research project was to foster the emergence of social and technological innovations which take into account the needs and expectations of seniors.

The Living Lab – a Powerful Tool for Social Innovation

The living lab methodology focusing on quality-of-life and developed thanks to and in conjunction with seniors can be used not only to generate collective intelligence and powerful areas of consensus from what is essentially a heterogeneous public, but also to develop ideas designed to improve the daily lives of everybody, ideas which can be further developed by public authorities (urban developments) or companies whose services could be of benefit to all (mass retail, public transport). In Switzerland, one senior in three feels lonely³. The reasons for this loneliness are many and varied (widowed or divorced, early retirement, financial underprivilege, family members dependent on care, vulnerable individuals, visually or hearing

² https://www.grstiftung.ch/fr/champs-activite/champs-acheves/bref_innovation-sociale.html, last accessed 09.05.2018

³ See ProSenectute Suisse (<https://www.prosenectute.ch/fr/infos/sante/retraite/solitude.html>), last accessed on 08.05.18

impaired). The Senior Living Lab, through participatory activities such as meetings, participant observation, participation in group creative workshops in town and attendance at a variety of talks and work sessions, the opportunity to meet different actors within the ecosystem and to respond to media requests, enabled social links to be created or consolidated between its senior participants and fostered the emergence of new social groups and friends and a widening of circles of acquaintances. Requests for participation, probably enabled, we can only assume, participants to maintain certain cognitive and motor skills as they had been asked to contribute their creative skills, away from their own homes and therefore were obliged to travel in order to reach the different venues. It should also be noted that life satisfaction for elderly people in general depends on three factors, namely: i) active participation in a social life; ii) the availability of strong social support; and iii) health, ill health and functional autonomy (Zimmermann-Sloutskis *et al.*, 2012). It is possible that participation in a participatory social innovation project met certain aspirations of the elderly in terms of their social lives.

In the case of seniors who had previously worked, we believe that their motivation was possibly linked to a desire to build social relationships (Füller *et al.*, 2010) and increase their sense of belonging and social identity (Nambisan & Baron, 2009). Members of a community, interested in mutual support, want to participate in shared activities and are keen to act in ways that create value for themselves and others (Algesheimer *et al.*, 2005). Hoyer *et al.* (2010) refer to the psychological reasons which drive participants in the co-creation process, including the simple pleasure of placing one's creativity at the service of a cause.

Three Main Fields Identified during an Exploratory Study

The research project investigated three main themes, mobility, communication and mass retail. These topics were identified thanks to semi-structured interviews with seniors during an exploratory study aimed to highlight difficulties in their daily life and carried out before living lab opened. The research group then identified three Swiss firms working in these business areas which agreed to participate with a view to offering products/services co-created with living lab community of seniors.

Seniors and Transport

In 2015, in Switzerland, 69.3% of adults aged 65+ still have a driving licence (Are, 2017). With age, mobility habits tend to change and travel tends to be primarily for leisure purposes. Most car journeys are made as passengers and public transport is preferred for short distances. The average distance travelled by foot generally remains stable throughout people's lifetimes (1.5

km per day) but tends to reduce from the age of 80 (Rytz, 2006). Older people feel safest travelling by public transport; in this instance, any risks involved were those related to the journey on foot from the home to reach the public transport (Rytz, 2006). The public transport company of Lausanne (Switzerland) has been a partner throughout the project and has played an extremely important role as a member of the living lab community created at this time. Seniors make up an important proportion of its customers and it is particularly attentive to their comfort and safety. It provides a crucial link between seniors and their surroundings as it allows them to travel throughout greater Lausanne and provides connections to the train stations.

Seniors and Mass Retail

Mass retail in Switzerland is the preserve of a duopoly which accounts for 70% of the market⁴. One of these two companies is the largest employer in the country and one of these regional cooperatives was a living lab partner and provided us with the opportunity to carry out on the ground a number of participatory initiatives in innovation in the fields of nutrition and purchases. For a Swiss citizen, it is difficult not to be a customer of this company, which is part of everyone's daily life.

Seniors and the Technology of Wireless Portable Alarms

A technology spin-off of the largest communications operator in Switzerland was a project partner and member of the living lab community. It was then possible to make recommendations to the partner company on the basis of the feedback from this community of seniors who completed a quantitative questionnaire.

2 – Methodology

Research Design

We used an interdisciplinary methodology based on community-based participatory research (Israel, Eng, Schulz & Parker, 2013). Qualitative methods were found to be best suited both to gaining an overview of the situation on the ground and to combining interdisciplinary approaches.

Recruitment/Participant selection

We were able to recruit future potential users of innovations, namely seniors, with the very active participation of seniors' associations and social-cohesion services from small towns in

⁴ <https://www.rts.ch/play/radio/le-12h30/audio/migros-et-coop-toujours-en-tete-de-la-grande-distribution-en-suisse?id=8389419&station=a9e7621504c6959e35c3ecbe7f6bed0446cdf8da>, last accessed 15.05.18

French-speaking Switzerland within the living lab ecosystem. The recruitment of these populations was initially facilitated by associations, which sent out initial notifications before contacting the research team which took over responsibility for recruiting the older populations during the entire project. All participants, whether regular or attending on an occasional basis, were volunteers. There was no enquiry into participant motivation.

The only formulated inclusion criteria in order to be part of the living lab community as a senior was to be retired.

Data Collection

Traditional ethnographic methods, including narrative inquiry, semi-structured interviews of individuals, interviews with discussion groups and participant observation were used in the data collection phase. Innovative participatory methods were implemented on the ground. Participatory methods encourage seniors to think of services and products which might be useful in their daily lives (Coperrider & Whitney, 2005). Events within the living lab community were organised with municipalities, seniors' associations and firms and offered World-Café-format meetings which brought together the different stakeholders during co-creation and creativity activities (Brown, 2005).

Those methods combined within a design-thinking-frame methodology in order to foster product development. Ethnographic methods such as shadowing have been used in public transport and supermarket in 2015 to empathize with seniors and discover their difficulties, allowing the research team to develop a thick description of the lived experience of consumers (Elliott & Jankel, 2003). Some shadowings were conducted with seniors using websites trying to buy bus ticket or to find information. Other observations were conducted in public transport points of sale. Those observations were completed by semi-structured interviews and interviews with discussion groups conducted to deepen our understanding of seniors' barriers and to clarify their strategies to ease their shifting in town or their shopping experience.

World-Café (with supermarket or public transport staff and with seniors) and focus groups (with seniors only) were conducted in the French part of Switzerland in order to generate ideas aim to ease seniors experience. Focus groups were used to select some ideas to come true during the project, as resources were limited in time. Finally, the companies involved in the living lab were consulted about the feasibility of the selected ideas.

Those ideas were designed (mock-up) by specialists before being challenged by seniors during co-creation sessions, leading to new mock-up iterations delivered to companies.

Project “Transport & Mobility”

Participant observations were carried out in the Lausanne transport network which allowed us to map to a certain extent the difficulties encountered throughout the entire network by a public whose mobility can be limited. Further observations were made at the ticket offices to identify any difficulties in their use by an elderly public. Finally, the company website was audited by a senior user and this allowed us to evaluate its clarity and ergonomics.

Project “Seniors and Mass Retail”

Participant observation was carried out in a number of shops to gain a greater understanding of the difficulties faced by an elderly population. As part of the living lab’s “nutrition” focus, a World-Café-style workshop was organised in a mountainous area of Switzerland, where elderly persons are often obliged to travel considerable distances to reach an urban centre to do their shopping.

Project “Seniors and the Technology of Wireless Portable Alarms”

The community enabled this operator, which had designed a “personal-alarm watch” for seniors, to better understand its target public’s expectations of its product and more specifically their expectations of alarm products in general. Feedback provided by the seniors focused on different aspects of the product such as appearance, how discreet it is, price, ease-of-use, customer service and psychological benefits, such as, for example, whether it gives a sense of reassurance or independence, and any difficulties related to using the product

3 – Results

Seniors and Transport

Several projects have been carried out in parallel with this company as part of the innovation initiatives taken with seniors between October 2015 and October 2016. Effectively, around 10 seniors agreed to participate in a discussion workshop. They looked at specific communications addressed to seniors and audited a brochure prototype before it was disseminated; their remarks and suggestions were used to design a new improved document. The services provided by this company were also the subject of a World-Café-style workshop which allowed seniors to explain what precise service they thought public transport should provide and what, in their view, was the perfect public transport company. This workshop, which brought together almost

30 very heterogeneous seniors and a dozen employees alongside members of the research team, allowed us to create a discussion forum and an opportunity for direct dialogue between seniors and mobility professionals.

Some 40 ideas were generated by these different initiatives and they were all assessed in terms of their importance by panel of seniors before submission to the public transport company. The ideas generated can be sorted in 5 different areas corresponding to the user journey: 1) Before getting into the bus/metro, 2) At the bus stop, 3) Into the bus/metro, 4) Various, 5) Passenger information.

Some of the ideas submitted by the living lab were later developed by the transport company.

Seniors and Mass Retail

Workshops bringing together specialists in marketing, design, nursing care and engineering from the research team along with a panel of seniors allowed us to produce a list of around 20 ideas, some of which were explored in greater depth. These were then submitted to the partner. One of these ideas was considered particularly important by all stakeholders; during a new workshop comprising six elderly people, a designer and a marketing specialist from the living lab team, developed the concept of “rest area” which was then modified in the light of observations by the seniors. This rest area addresses an issue faced by some seniors as well as parents with small children, parents with pushchairs and people whose mobility is either temporarily or permanently reduced when they go shopping in potentially very large stores where it can take considerable effort to make one's way round with a trolley or a basket.

Seniors and the Technology of Wireless Portable Alarms

This study allowed us to identify areas for technical improvement, problems which had previously impeded use of the product by seniors. For example, appearance was something that the company had overestimated in influencing the adoption of the product by seniors. The importance of caregivers in the process of purchasing this type of product also emerged thereby corroborating the findings of other studies and highlighting the importance of communications about the product being addressed not only to its users but to its purchasers (de Saint Laurent-Kogane, 2007).

4 - Discussion

Key success factors

The keys to the success of the living lab designed for seniors are probably to be found on our gradual understanding of the concept of fragility (and its different stages) and our ability to adapt participatory initiatives to an elderly public in a context where confidence can only be built given the time to do so. It is also essential, in addition to defining the overarching objectives that bring all the community activists together in a virtuous circle, to anticipate the expectations of seniors and their associations so as not to disappoint them.

Time seems to be another key success factor when co-creating with seniors. Indeed, seniors were always disappointed when we had to hurry or to quickly leave the workshops. Time spent to invite seniors by email or by phone individually, to welcome them, to wrap up our sessions or to send the intermediary results by mail was important. Building a living lab with seniors in a hurry seems not to be suitable. Understanding the role of time while working with elderly was fundamental and eased our co-creation process and we had to adapt to their pace. However, the seniors involved in our living lab were hasty to benefit from the solution not yet imagined, as expectations were high.

In the case of this particular community of researchers from radically different disciplines, we clearly had to learn to manage this degree of interdisciplinarity within the particular innovation projects. Time was probably also a key success to build confidence within the research team.

Barriers and Challenges of Deploying a Living Lab to Co-create with Seniors

It was crucial to involve seniors very early on the process of empathizing and ideating during co-creation/brainstorming sessions and to build confidence among all the stakeholders in the living lab. The first difficulty was to gather seniors into our initial community. As our project was starting, we had to convince seniors to join our workshops and we relied on officials connected with local associations of fellowships in order to recruit participants. As we wanted to be as close as possible to seniors facing mobility restriction, we had to rely on officials too to find suitable premises for workshops. The access to those social networks was indirect, so we faced difficulties in explaining our project and our role. People who accepted to join our workshops were sometimes surprised to discover that they were not here to attend some kind of conference but to actively participate to a workshop.

As the research team decided to engage companies in the living lab in order to provide relevant and tangible pieces of solutions, it has been accused of wanting to exploit the elderly for the good of private companies. It had to cope with misunderstandings and work closely with different seniors to make them understand the very purpose of its approach and try to start a virtuous circle between all stakeholders. It was required to clarify its intentions as to its relationship with the partner companies to avoid any potential suspicions of conflicts of interest. Building a living lab with such different stakeholders requires explanatory approaches we may have underestimated during the early stages of the project.

As the research team had direct access to the management of companies involved in the living lab, some seniors believed we were developing our living lab to represent some kind of after sales service. We had to explain that we were all engaged into a community in order to tackle substantial problems more than overcoming very specific points of detail. The role of the research team was to generate forums and to structure innovation process, to collect insights then to co-design solutions.

It was a difficult task to recruit participants to the various project workshops because, by the nature of the exercise, the research team (in charge of recruitment) tended to concentrate solely on the population of active seniors, for whom it was no problem to get around by car or public transport and who had full cognitive ability. It was much more difficult to mobilise, especially on a regular basis, more fragile seniors because the places to which they were invited were not always particularly suitable for their motor abilities or functional capacities. It proved impossible to mobilise dependent participants for the participatory workshops. It was however possible to meet them individually through individual interviews at home, and their ideas fed into the development and assessment of ideas that emerged during the group phases.

As the project progressed, we lead several workshops in town and discovered gradually and against our will that we involuntarily excluded people, such as :

- people with no access to emails or to relatives using emails and able to transmit our invitations to participate to our workshops or other activities
- people facing problems with motor and/or cognitive skills, as participants had to be able to travel in order to reach the different venues and participate to some challenging brainstorming/creative sessions
- people not living in town or in surroundings and facing mobility restriction, as we conducted our workshops mainly in town.

Those criteria were not decided beforehand but appeared *a posteriori*. Our comprehension of the concept of fragility and its different stages increased gradually during the project and we adapted our participatory initiatives to an elderly public over time.

Here, we identified a further limitation of the living lab, namely its sustainability once the applied research project funding had ceased. All stakeholders who had participated in the project showed considerable interest in being able to continue to co-create within this social innovation ecosystem. Our group of researchers is currently seeking to identify ways of placing the activities of the Senior Living Lab in French-speaking Switzerland on a more permanent footing. The aim is to continue to be able to provide a link between the different actors when project funding ceases and continue to create value by and for seniors within a living lab designed for active ageing.

Recommendation for practise

In future, by working closely with professionals licensed to transport people with limited mobility and specialist support staff (home-care staff, for example), it should be possible to allow the more isolated populations, as they wish, to participate in group activities as part of the workshops. The workshop programme should, however, be redesigned because sessions sometimes last up to two hours; there should be longer breaks or shorter sessions too allow more dependent populations to attend.

In order to involve more people facing cognitive problems or motor issues, participatory methodologies should be enhanced by a range of qualitative interviews, conducted before and after the workshops, in order to counteract exclusion criteria. Insights from interviews with a fragile population should be taken into consideration during brainstorming/creative sessions and the results from the workshops should be discussed afterwards with this population in order to validate, improve or nullify the ideas.

Recommendation for research

The Senior Living Lab did not explore (trans-)(intra-)(inter-) generational marketing concepts and it could be interesting, at a further stage, to carry out innovation projects with populations segmented by psychological or cognitive age in order to measure differences in results between identical approaches run in parallel with different groups.

It would also be interesting to carry out identical innovation projects with different generations (in the socio-cognitive sense of the term) to identify the effects of generational markers on product development or on an awareness of new technologies.

5 - Conclusion

The Senior Living Lab, through its community-participation research methodologies, has enabled the co-creation of objects, services and products in close collaboration with seniors, companies, researchers and public authorities. The participation of all actors in the living lab ecosystem in brainstorming and then developing solutions has enabled better uptake of innovations by their target publics, in this case retired seniors. The innovation techniques used (design thinking, participatory brainstorming or co-creation workshops, tests of prototypes or ideas, auditing of concepts or products, etc.) have served to generate consensus and to bring together observations and ideas from a very heterogeneous group of seniors. This enabled us to gain an overview of a range of opinions which could then be used to develop solutions arrived at by seniors but adapted to individual use. The role of the team in charge of running the living lab was to create spaces for exchanges between all parties and allow for direct and indirect dialogue between publics unaccustomed to working together, much less developing innovations together. This experience allowed all concerned to confront their prejudices and gain a better understanding of the perspectives of other people.

The senior market is of particular interest to companies, and they must therefore adapt their innovation and co-creation processes in such a way as to be able to include future users or customers right at the beginning of product and service development, especially when these future products are designed for a public mainly comprising elderly people. A living lab methodology would appear to be particularly appropriate when it comes to carrying out research of this nature within a mutually developed ethical framework; the living lab methodology which is, by nature, community-based and participatory, has proved to be a powerful tool for social innovation.

Through its participatory and community nature and the close bonds it creates between actors, the methodology helps remove the fairly simplistic and often misguided perceptions that young people have of the elderly population, which is perfectly understandable as they have not yet experienced this stage in their lives (Dayez, 2014). Companies can draw on the tools and methodologies used by the Senior Living Lab to develop communities of seniors to help them to innovate and explore product development or diversification strategies, or even develop their market through modifications to their current products or to their communications, based on suggestions from seniors.

In short, co-creation within a senior living lab may offer an interesting opportunity for society as a whole to develop products and services suitable for all sectors of the population through the perceptions of seniors, supported by innovation professionals armed with participatory tools and framed within an ethical code created jointly by all stakeholders. Seniors, in these circumstances, are capable of generating a virtuous circle and steering the investments of private and public actors in the appropriate direction. The creation of a community comprising a variety of actors of very different types allows operations to run smoothly from an ethical point of view and prevents any exploitation of a cohort of seniors by private actors for their own ends.

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