

# LIVING LAB: FORMAT FOR REHEARSING A NEW (SERVICE) PRACTICE

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## ABSTRACT

Citizen engagement and the citizens as a resource are key concepts in rethinking the Danish welfare system to meet the challenges of delivering better services for the elderly, while simultaneously reducing the cost of healthcare. In this method paper, we address how the co-design of new digital service platforms takes place in the format of living labs. We characterize living labs as the design of experiential spaces where ‘what is’ and ‘what could be’ are explored over a longer period of engagement. The labs are staged to integrate multiple stakeholders’ issues and resources and to create new technologies, concepts, or service designs. This paper unpacks the practices of living labs with questions of what is being produced, not only in terms of products, but also in terms of changes in practices, roles, and relations. To analyze and discuss this question the authors report about their engagement in two co-design projects that focus on a digitally mediated community practice of sharing and exchanging.

## INTRODUCTION

Various initiatives are set into motion within the public sector for citizens – and in this case, the citizens are seniors – to be able to actively take part in the co-creation and delivery of care and services. Broadly, advancements in technologies are an area of high political attention, whether this concerns robotics in eldercare or ICT-related possibilities. However, any type of technological engineering is at some point confronted with the complexities of contextual, political, and professional everyday practices. Successful design and the use of welfare technologies are largely dependent on the integration of needs and capabilities of users, along with the contexts of use and practice. Despite a variety of approaches for user engagement, this challenge lingers. Living labs have, for some time, been used as an approach and method for engaging users in the development of new technologies and for establishing Quattro helix partnerships, including public organizations and private companies (Stålbröst & Holst, 2012). Still, we argue, much more than technology is formed and transformed in living labs.

Due to decreases in resources, from a public-sector perspective, the aim when introducing new ICT-technologies is to make the citizen’s role change from passive receiver to active co-creator of the ‘good senior life’. However, this transition not only alternates the role of the citizen. Health counsellors, social workers, and coordinators are at the same time supposed to change roles from suppliers of services to initiators and partners with the elderly. We see this as a political trend that leans towards citizens as the driving force, emphasizing volunteering and self-organization. This paper investigates what living labs produces. What are the outcomes? We do this on the empirical basis of two co-design projects in the Danish public elder care, where the authors respectively have taken part: 1) The Give&Take project investigated how a digital platform could enable seniors to reciprocally exchange services and resources within local communities. This was to create new opportunities for prolonging public

supported initiatives and for seniors to contribute as volunteers and ‘caregivers’ in their local communities; 2) The MATURE project, following this idea, investigates how vulnerable seniors, i.e. citizens with chronic diseases, can be co-creators in local exchanges of care and services, supported by a provided digital platform. In the Give&Take project, the living lab was imagined by the researchers as a space for continuous dialogue, design considerations, and adjustments of the platform. In practice, however, it turned out to be more of a ‘rehearsing’ of a new community practice and coordinator practice, simply supported by a digital platform. Thus, we ask, what is produced in living labs? What are the different practices and with what do they contribute? Here we draw attention to the patterns of engagement and interaction, exploring how living labs might be regarded as formats for rehearsing new community - and coordinator – practices. After a brief description of the Danish welfare system, the paper is positioned in the theoretical field of living labs-research and the call for more in-depth accounts for the practice in living labs. Hereafter, the two cases are presented, followed by the analysis that shows insights into the negotiation of expectations taking place when establishing the living labs and how new practices are explored and rehearsed. Finally, the paper discusses the findings in relation to previous research on living labs, before concluding.

### THE DANISH WELFARE SYSTEM

The present research projects are embedded in a public and political discourse about public welfare in the light of pressing social challenges related to resource scarcity, health and demographic changes, and an increasing attention towards exploring co-creation or co-production as means in endeavors to finding solutions (Mulgan 2013; Murray et al. 2010). Since the 1990s, the Danish welfare system and elder care services have been extensively reformed. Changes occur due to the rapid demographic change, new technological and medical developments, and financial and institutional reorganisation. Standardization of procedures and individualization of service delivery have been widely applied in order to both increase the quality and decrease the associated costs (Lauritzen et al. 2017). Citizen engagement and co-creation are pivotal in the Danish public sector’s work of rethinking the welfare system to meet the challenges of delivering better services, while simultaneously reducing the cost of healthcare (Bason 2010). Over the last decade, rehabilitation of elderly with reduced functional ability has increasingly gained attention and is now a statutory element in public elder care (Serviceloven §83a). Even though the present research projects do not focus directly on functional ability, the line of thought is reflected in a notion of civic engagement and in sustaining social and functional capabilities of the targeted groups of elderly citizens.

### LIVING LAB

Living lab as the conceptual frame for user involvement in design and innovation processes has been used widely since the 1990s. According to Følstad (2008), *“Living Labs are environments for involving users in innovation and development, and are regarded as a way of meeting the innovation challenges faced by information and communication technology (ICT) service providers”* (Ibid 2008, p. 99). Despite a great interest in the term, large variation exists in how the concept is described and used (Ibid 2008). Based on the literature review, Følstad divides the definition of living labs into three different categories: 1) *living labs to experience and experiment with ubiquitous computing*; 2) *living labs as open innovation platforms*, where living lab refers to real-world environment for collaboration among the different stakeholders in ICT development, and 3) *living labs exposing a testbed application to the users*, where living lab refers to test environments e.g. in private homes (Ibid, pp. 101-102). Overall, the concept of living lab is used to describe ‘long-term innovation efforts in the user context’. And where all living labs were found to aim for evaluation or validation, the main part of the living labs also allows for “unexpected ICT uses and new service opportunities” (Ibid 2008, p. 116). More recent literature on living labs calls for more detailed descriptions of the activities taking place in living labs (Bannon et al. 2013, Hyysalo et al. 2014, Yndigeegn 2016, Kanstrup 2017). Kanstrup (2017) makes a study of eight different living labs, as a reply to Bannon and Ehn’s call for ‘detailed evaluation studies that examine how the Living Lab concept has actually played out in practice’ (Bannon & Ehn 2013, p. 54 in Kanstrup 2017). Kanstrup argues for a focus on the people living and working in the labs – and not the activities carried out by the researchers – since the: “Insights into the lives of people living and working in the labs can contribute to strategies for involving users in technology design as part of their everyday living, which is of particular value to the further development of living lab methods”. Yndigeegn (2016) also raises a critique of the lack of ‘thick’ descriptions of what takes place in living labs. Based on her participation in a ‘so called’ living lab, she raises the seemingly simple questions of what is a living lab and where is it? She herself found it difficult to define what and where a living lab is with all the different – also contradicting – activities taking place. Inspired by STS and performativity, Yndigeegn follows ‘what was coming into being’ in the living lab and argues that the living lab did not necessarily or only produce the aimed for outcomes of new social services supported by technology. Rather it produced different and also contradicting versions of ‘active citizens, new technology, and public-private partnerships’ (Ibid 2016). In this paper, our definition of a living lab especially aligns with the work of Binder et al. 2011. Binder et al. propose to consider living labs (in their tekst ‘design:labs’) as a practice that takes place alongside

and in interaction with other practices. The living lab, they argue, merges with other existing living labs, i.e. agendas being pursued by engaged actors. They describe this as when design researchers invite citizens to explore e.g., whether everyday activities like grocery shopping or doing laundry can create new ways to meet and do things together. In this sense, living labs are “living laboratories, in which [citizens or actors] investigate design ideas and prototypes within their everyday life” (Brandt et al. 2012, p. 7, our translation). Following Binder and colleagues’ line of thinking, it is collaboration among different living labs: The researchers’ living lab, the municipality’s living lab, and the citizens’ living labs. Consequently, they argue, in living labs the researcher must be participating, mobilizing, and joining forces with the agendas already present in everyday life. This entails that the living lab turns into a merger of agendas, resources, and competences.

Here, we define living labs as a design of experiential spaces where ‘what is’ and ‘what could be’ are explored over a longer period of engagement (e.g. in contrast to a series of workshops). The labs are staged to integrate multiple stakeholders’ issues and resources and to create new technologies, concepts, or service designs. We work with living labs as an approach to the involvement of multiple actors or stakeholders (Higgins & Klein 2010) in the co-design, development, and evaluation of new IT platforms and service practices. Here we lean on a notion of practice as socially repeated and recurrent actions, sustained by values, beliefs, norms, habits, and discourses in open-ended processes, with the resources at hand (Lave & Chaiklin, 1993). Practice is not static; rather it is continually developed, negotiated, and it evolves out of the specific constitution of participants, issues, tools, places, and situations.

## REHEARSING THE FUTURE

As argued above, living labs are, by some, described as methods in which a process of user-involvement runs in three phases: needs discovery, concept design, final design approval or evaluation. In their book from 2010, Halse et al. put forward the central argument to acknowledge that change and innovation are often as much about reorganizing how things are done and that novelty emerges when new connections are made. This entails that participants not only take part in co-inquiry (needs discovery), co-creation of a design concept, or evaluation. Equally well this is about participation in the exploration of the social and relational consequences: just as much, they take part in *rehearsing the future* (Ibid.). With this approach, Halse et al. challenge notions of design phases in e.g. technology development processes, as their perspective instead “collapses the front end and the back end of the design process” (Halse et al. 2010, p. 16). The rehearsal of relationships and practice starts from the very first step in the process. In rehearsing a new practice in the living labs presented in this paper, it is not only about ‘trying it out’, but much as well to produce new practices and to try to make

these practices viable and sustainable as something that can continue after the development projects have come to an end.

Following the idea of rehearsing the future, we can grasp some differences between living labs and workshops. Three characteristics of living labs stand out: 1) the longitudinal engagement of living labs, 2) the merger of agendas in the ‘real’ context of the participants, and 3) a delicate balancing of micro-movement and negotiation of imaginative and practical explorations of ‘what is’ and ‘what could be’.

## THE CASES

In both cases presented here, the living labs are established using already designed – although not finished – platforms. Hence, development of the digital platform is not the main focus. The main aim of both living labs is to explore and develop new community practices with the use of new technology.

The first case project is Give&Take (2014-2017) (<http://givetake.eu>). The project is developed in the framework of a European project that took place in Frederiksberg (Denmark) and Vienna (Austria). This paper reports from the work in the Danish context. The project aimed to co-design digital mediated sharing within senior communities (e.g. IT-volunteers from the library, or a walking group) in Frederiksberg. The Give&Take project designed a platform that allows senior citizens to reciprocally exchange services and resources. Unlike many existing social media platforms, the platform is designed to support existing and often loosely coupled communities in order to strengthen and sustain them while caring about privacy and accessibility for users with little or no computer literacy. The platform was developed during the project’s first one and a half years, based on the outcome of series of dialogue meetings and later workshops. Here mainly 50-60 senior citizens and employees working with senior communities participated along with researchers, the municipality of Frederiksberg, and private partners. In these meetings questions of ‘what is’ was explored to understand both what senior communities are and what sharing is. At the same time ‘what could be’ in terms of new possibilities of sharing communities supported by a digital platform were explored through scenario building and doll-play enactment. Based on the insights from these meetings, a platform was developed, where members of a community could stay in touch and share conversations, things, favors and care with each other. You can only be part of the platform as part of a community – and the platform is structured so it includes volunteer roles (persons with special responsibilities) in the communities. At the same time, the structure supports a connection to an organization or institution like the Municipality, where a coordinator (social worker or Health counselor) can stay in touch with the community and reach out with a ‘helping hand’ if needed.

MATURE is the second case, from which we report here. It is developed as part of a DK Innovation Fund project. The overall aim of MATURE is to investigate ‘the changing needs of older adults’ and to provide ‘empirically and theoretically based scenarios for older adults as recipients, users, providers, and developers of future care and welfare services’ (Vive 2017). In this paper, this case only refers to one of eight work packages, more specifically to work package three ‘Active Agers as Co-creators of care and service’ (WP3). This work package (2016-2018) is inspired by Give&Take and investigates the overall research question: *How can resources of “active agers” be used in exchange for care and services?* WP3 seeks to create knowledge on two perspectives on value creation, considering value creation in terms of wellbeing and empowerment of the involved elderly. To do so, the project tests and evaluates how sharing of care and services within a community can be supported using a pre-developed platform, originally targeted at institutionalized elderly. Following the lessons learned from Give&Take, the attention was on localizing existing communities of senior citizens as participants (or co-designers) in the living lab. The Danish National Board of Social services have recently called for a focus on vulnerable groups, e.g. due to chronic disease, loneliness, recent loss of spouse, etc. Therefore, in WP3 the intention is to investigate a prototype aimed explicitly at potentially vulnerable or marginalized groups of elderly citizens. The hypothesis is that the prototype can improve the wellbeing and empowerment of citizens who are potentially marginalized due to chronic illness.

### ESTABLISHING A LIVING LAB

As stated earlier, we work with living labs as an approach to the involvement of multiple actors or stakeholders (Higgins & Klein 2010) in the co-design, development, and evaluation of new IT platforms and service practices. Thinking in line with Binder et al.’s (2011) idea of living labs as embedded within multiple pre-existing agendas, “to establish a lab is to negotiate what possibilities to explore” (ibid p. 4). The process of negotiating what possibilities to explore and what new practices to rehearse, constitutes the contour of the living lab. This contour entails an openness and permeability to facilitate participants in developing the matters of concern, which are pressing and important to the specific groups of participants in their practice, as it evolves. This means that the focus of the exploration and experiments often change or at least become more nuanced and concrete as things evolve in the living labs. Furthermore, it means that participants can change and new participants can be involved during the living lab period. Drawing on this, we can see how both living labs presented here are staged within existing everyday practices, agendas, and needs.

In the Give&Take project (Danish context), five different living labs were established in two rounds and

ran during the last one and a half years of the project. The finished trial version of the platform was tried out to explore whether and how it could support and optimize sharing and exchange among the community members. Establishing a living lab meant to create an arrangement with different senior communities and the connected institutions or organizations, which were communities like a walking group, a group of IT volunteers, and a food club for men.

In this paper, we will follow the living lab with the walking group. It was a group of 10-12 seniors who had walked together for 12 weeks, when we met them. The main part of the group was recruited through visits by a health counselor because they had recently lost their spouse. They met once a week, walked for an hour, and drank coffee together afterwards at a local care center. In the 12 weeks, a health counselor from the local municipality health center, who initiated the group, had followed them on their weekly walks, and showed them different exercises and places to walk. After these 12 weeks, the health counselor was going to withdraw and the question was whether the group would continue on its own, and ‘survive’ the Christmas holidays and winter (it was November). It was a rather loosely coupled group and many of the participants did not know each other’s names.

The establishment of the living lab took part through meetings both with the health center, the health counselor for the group and with the walking group. For all parts – including the researchers – it was important to consider whether and how it would be relevant to take part in the tryout of the platform. At the same time, expectations were negotiated together with the following questions:

- Whether, why, and how the walking group would use the platform
- What about those who did not want to try using the platform?
- How and how much could the researchers take part in their weekly meetings?
- The health counselor’s role and how she would and could take part in the tryout of the platform.

A little more than half of the group agreed to try out the platform, and saw possibilities in the platform for coordinating and staying in touch with each other in between their meetings. The group developed a practice on the platform of inviting each other for coffee, to join other walks, talks or concerts. They also shared pictures, travel experiences and important personal events – both the difficult and the great ones. The health counselor also became part of the group’s virtual space on the platform, and to start with, she used it to send the group other initiatives and events that could be of interest for them. The idea was to explore how it could support an idea of self-organizing groups and of a coordinator remotely following the group, only to reach out with a helping hand when needed. To stay connected with and support the community would otherwise not have been

part of the counselor's job description after these first 12 weeks. It was agreed that the researchers could take part in the weekly meetings – both the walks and the coffee. For the researchers, the participation was a way to follow and observe the community, to generate knowledge of their community practice and 'what is'. At the same time the weekly meeting was also used to create knowledge on the use of the platform, to provide IT support, but more importantly to generate new questions of 'what could be' in this group, i.e. what kind of use and practice was interesting for the group to explore and rehearse. This also meant that throughout the duration of the living lab, the research interest and focus of the group evolved and were nuanced along the way.

The MATURE project is running at this present time of writing. Here, a network of citizens, who have the lung condition Chronic Obstructive Pulmonary Disease (COPD), meet in a network for COPD patients named Café Lungen. Knowing that this group is possibly less stable, it of importance to create new knowledge on how such groups can still be supported in their social network and to influence the welfare services that they need. Hence, as a first step in the approach, the contour of the living lab was drawn from an assumed need of the target group. The assumption was that this group could benefit from increased social interaction and that this could be facilitated by the touchpoints made accessible via a digital platform. When contacted, the public managers in the municipality expressed hopes in the potentials of a platform to support the social practice of the group. For now, the network is coordinated by an employee from the municipality. He arranges network-meetings, talks, and health checks. Currently, network meetings take place once a month. Earlier, a network member initiated and volunteered weekly physical training sessions (aimed at the COPD condition) at the municipality's facilities. Lately, however, this volunteer has been absent due to pneumonia. So, in the meantime, the coordinator from the municipality has taken over the physical training too. However, over time the intention from the municipality is to phase out the role of the employee and let the coordination be taken care of by the network members.

The majority of the COPD-network members expressed interest in the tryout of the platform. Even though some expressed a general skepticism towards a new technology. When invited, the network members were presented with the assumption and asked whether they would find any interest in trying out what a digital platform might do to support or expand their existing activities in the network. The coordinator exemplified how the network recently had arranged a spontaneous get-together and how a shared platform might make this easier. The general feedback was a confirmation of a need for a closer and easier contact between meetings and support in remembering names of fellow network members. Also, a wish presented by a group member was to mimic what she had experienced as part of her rehabilitation training: by the means of a shared on-line

video meeting, she found lung training was much more motivating.

So, the establishment of the living labs in both projects shows a contour that includes various agendas; e.g. tryout of a digital platform, improving motivation for training, or to continue to meet for walks, keeping in touch and strengthening social bonds. Also, it includes potentially conflicting agendas; e.g. handing over the responsibility of the coordination to volunteers, how to include new technology and the potential exclusion of members who do not want to or are incapable of using the technology. The living lab includes network and group members and their existing practices of meeting, sharing stories on life (e.g. with COPD), or everyday stories in general. Finally, it includes the researchers taking part, along with the digital platform and the new changes to practices that it brings about.

### REHEARSING NEW PRACTICES

In both cases the researchers' engagement follows an approach of exploration and experimentation with a constant question of 'what could be?' Thus, it also includes ethnographic inspired methods of observation and interviews, to understand 'what is' as the basis for meaningful experiments. And it includes sensible and sensitive considerations of the researchers' presence in the 'real-life' of the participants. For these cases, the researchers do not follow an idea of a 'hands-off' approach to make a 'real' user trial of the technology without interference. When we consider practice as socially repeated and recurrent action, sustained by values, beliefs, norms, habits, and discourses (Lave & Chaiklin, 1993), we can point to engagements in living labs as intervening in and potentially reconfiguring practices. The living labs alternate the specific constitution of participants, issues, tools, places, and situations - at least for some time.

In the Give&Take project, the researcher's engagement consisted of both participation in different gatherings and meetings as well as interacting with the participants on the platform. This engagement also included observation and gathering of qualitative data both offline and online. Besides the weekly walks and meetings with the health counselor, the researchers made home visits among the seniors in the walking group. The platform was introduced and tried out as part of drinking coffee, but the home visits were used to create better circumstances for the introduction of the platform and to help setting it up with shortcuts and bookmarks on the seniors' computers at home. The researcher's participation in the weekly gatherings created interruptions in the group's existing practices. The walking group mainly welcomed it, but it became an issue in relation to the participation on the platform when only around half of the walkers joined the platform to start with. Problematic situations arose like the following: at the coffee table, where half of the seniors were eagerly engaged with their tablets, the other half tried to continue their conversation, or in the

decision of what and how much should be shared on the platform. Those who used it did not want to exclude those who did not. It required a sensibility from the researchers and these concrete incidents led to new initiatives like: the home visits to help those who hesitated due to technological insecurities; a weekly paper version of the content of the platform that was shared with everyone; as well as other ways of engaging those who did not want to use the platform.

The role and engagement of the health counselor was raised and explored through different meetings between the counselor and the researchers, through the counselor's participation on the platform, as well as in dialogue with the walking group. One of the questions that was explored was how the platform could be valuable for the health counselors (and coordinators in general) in their daily work with communities. What would they need to be capable of to benefit from using the platform? To explore this, the researchers e.g. made a paper prototype of a dashboard, to facilitate a discussion on what kind of insight the health counselor could use – based on the activities on the platform – to be able to support the group. And to, at a distance, facilitate the group as part of a new work practice. To develop this new practice the counselor wanted to have insight into how many showed up, who, and the distance the group walked. It both accommodated an evaluating aspect of the initiatives in the health center as well as a possibility for the health counselor to reach out to the group if things started to change, like some seniors didn't show up several times or they started to walk shorter trip distances. The walking group agreed on uploading their weekly trips (screen shot from Endomondo followed by a short diary-like description) to the platform, which the counsellor could read. In exchange, the counselor responded to questions, etc. from the group and continued to upload different offers of seniors' travels, talks, and other kinds of activities on the platform. The walking group also tried to contact the counsellor when they had a problem in the group, so the counsellor could help them.

As part of the living lab with the walking group, the researchers realized that their participation in the community was not just as researchers intervening and observing the group's use of the platform. Their participation became a rehearsing of the coordinator's new practices. The introduction to and support with the platform - and the interaction with the community through the platform were all different ways of trying out what the coordinator role could be like and what would be required of the coordinator in relation to creating a community supported by a digital sharing platform. It was though an extended version of the coordinator practices. The number of hours of presence in the meetings and on the platform and the home visits were not realistic and ideal for a coordinator. Especially due to the idea of self-organising groups and coordinators remotely following the group and to only reach out with a helping hand when needed. The focus in the second round of living labs therefore became

rehearsing a new coordinator practice with the coordinators as 'the actors'. For the researchers, it became central to design and rehearse the practice of a Give&Take service package and team. This idea became evident during the first round of living labs, where the project realized that the platform couldn't be 'sent out' or left on its own. The outcome of the project was also the production of new practices. It though needed support and facilitation, which led to the idea of the service package with concrete steps and support for establishing a 'digital mediated sharing community'.

MATURE is still in its early phases. Still, several of the above described elements are reflected in and relevant to the project. E.g.: What sense of meaning and purpose of the network and its practice does the project emphasize or counteract? In this project, research engagement is, as in Give&Take, taking place 'hands-on' by researchers' participation in the existing activities of the COPD-network (talks, coffee drinking, physical training) and the initiation of the use of the platform. Besides this, to gain insights into what is, we also use observations, semi-structured interviews, quantitative data on participation, as well as qualitative and quantitative data from the platform. The COPD-network (Café Lungen) was introduced to the platform in August 2017 by the researchers, the coordinator, and the provider of the technology. Over the initial months of using the platform, the coordinator is the primary actor to post content. So far, the researchers have experienced several challenges to the use of the platform as part of the network's practice. First, there were some technical challenges with the platform, e.g. the plenum bulletin board not being visible to everyone, content posted by network members has disappeared, etc. This largely influenced the participants' sense of meaning and motivation to use the digital platform. Secondly, the number of participants who have logged on to the platform is now limited to six persons, which is approximately one third of the network. This is due to several factors, here amongst them, to a generally large variation in the number of people attending the meetings (cafés). This means that 6-12 network participants have not yet been introduced to the platform. Also, not all of the six members have accessed the platform on their own, due to little or non-existing computer literacy. Other network members have continually expressed their concern about the project potentially excluding them.

We argue in this paper that practice is not static but rather continually negotiated, evolving, and developing out of the specific constitution of participants, issues, tools, places, and situations. In this case, we see that the practices being rehearsed and negotiated in the living lab are expanded, including a new, digitally mediated element of practice that involves engaging in new forms of action and interaction, and evokes and provokes new expectations and a sense of meaning. One network member seems to take on new forms of actions and interactions in the network, as he describes himself as a

'super user' of IT, due to his former job as police officer. He assists other members in using the platform. A member leaves the room with a loud comment about her being excluded due to her inability to use the technology; others stay but mumble that 'pencils and paper we know what is'. One researcher and the coordinator – in an attempt to include everyone – provides support and training to those who wish to learn how to text and send text-messages on a smartphone. Still, the coordinator supplements information from the platform by placing a printed note on the door to inform participants that a meeting takes place in another room, sustaining expectations.

## DISCUSSION

In the two cases, we are not simply practicing digital skills and literacy. We are rehearsing a new service practice, and in this rehearsal, we try to make sense of what this new service practice may be, what roles, issues, and resources it includes and excludes, and how a digital platform may be part of this and why it may or may not be meaningful. Though, the use of a digital platform – including technical and usability issues – creates problems and makes the rehearsal of new practices very vulnerable. This is not necessarily due to the participants' lack of computer literacy that should be taken into account as part of the rehearsal. The incompleteness and unstableness of the platform being used create skepticism, frustration, and a lack of motivation. The cases illustrate that the living labs are not simply about development, test, or evaluation, but a process of contesting agendas and a sense of meaning. Though, in the balancing act of rehearsing roles and relations, including (re-)placing responsibilities, issues and agency, the IT issues are definitely non-trivial. So how does this add to previous research using living labs? We argue, that the problem with many living labs, as for example practiced in municipal contexts (e.g. Strandvejen living lab in Copenhagen), is that the testing of technology takes place in a 1:1 relationship, focused on usability and how it works in a home environment. But what is not being tested - and thus also fails to be created – is the practices that the technology must be included into. Often, the technology is rejected before it has been incorporated into a practice and there is transformation of practices, which is required if not only technology but also a new approach to e.g. service delivery is the aim. Hence, in our approach the development and rehearsal focus is about including a practice that embraces the complexities of various resources, issues, and politics. In terms of tradition and transcendence (Ehn 1988), a concern is then how we might create the magic circle, the space within everyday practice for rehearsing the future. In order to successfully strike a balance between transcendence and tradition, the living lab must embrace the complexity of the explorative within already existing practices. In workshops, this is somewhat more easily done: Here imagination is less restricted by everyday complexities and conflicting agendas. Living

labs are, however, living – they are in the wild, and thus, less easily shielded. Still, what we find is that this challenge is simultaneously a strength. The rehearsing of new practices and bringing technology into play in living labs is also about 'bringing it into life'. The longitudinal character of living labs, as illustrated in the two cases, facilitates a space where the dynamic and complex everyday life practiced is close to 'reality' but still there is the possibility of 'just rehearsing'.

This brings us to the role of the co-design-researcher. The cases show that the practice of the researcher is primarily what we call 'hands-on'. In the living labs, the co-design researcher is collaboratively joining the efforts and agendas to create a desired outcome of the process. The participation and intervening of researchers is not just about introducing an IT platform, nor is it about 'placing something out there' and seeing what happens with the least possible interference from the researcher side. On the contrary, we attach great importance to our participation and hands-on approach. Again, striking the cord in Ehn's (1988) points about the balance between tradition and transcendence, researchers play a role in taking the initiative for small experiments and new interventions, intimately following the developments in the living lab in order to strike a new balance. In line with Yndigejn's (2016) experience with living labs, there were also a lot of different activities, where some of them seem to go beyond the scope of the living lab and therefore are difficult to categorize. E.g. the Give&Take project invited all the living lab participants for a tour to one of the research institutions to give them another kind of experience. It led to some of the skeptical participants expressing a newfound interest in trying out the platform: "now that we can see where you're from, I also dare to try the platform" as one of the participants expressed. So, even though it fell outside the scope of what many of the project partners identified as living lab activities, it led to both a greater understanding, interest and also trust in what the researchers and partners were doing.

## CONCLUSION

In this paper, we raised the question of what is being produced in living labs. This sounds like a simple question where the answer might be that what is being co-produced is digital sharing platforms - or at least fine tuning, adapting, and implementing these to the seniors and communities of the seniors involved in the process. But here we find that the outcomes of living labs are not easily or solely captured in concrete digital platforms, artifacts, objects, or processes. Rather the outcome has a more distributed character, which – we argue – is better captured in the notion of a network practice, including the socio-material relations. By socio-material we mean the patterns of interaction that emerge among humans and a digital platform, physical space, coffee drinking, training, walking, etc. Thinking in line with Halse et al. (2010) and their notion of rehearsal, the living labs work as formats for rehearsing potential practices, roles, and

relations in “intimate interaction with the concrete elements of the situation” (from Carroll 2000, here in Brandt et al. 2012), including new ICT. In Give&Take, this meant rehearsing 1) a new role of the coordinator (to create a practice of facilitating ‘on a distance’ and to reach out with a helping hand if needed), 2) new community practices (e.g. to create a practice to support the walking group’s viability including to stay connected with the health counselors for the benefit of both parts), and later on also 3) the role of a service team (to create a practice of how to support the coordinators when setting up new Give&Take sharing communities). We find that in living labs, development, testing, and implementation of ICT go hand in hand and move very close to everyday life. In the two cases described here, the living labs did not have ICT development as the primary focus. However, ICT development is still an important part of what we find to be produced in the lab. However, most importantly as an outcome, is the rehearsal of new practices, roles, and relations –including new ICT. We also wish to put emphasis on the viability and sustainability – a wish for turning ‘what could be’ of new practices into ‘what is’ of new practices that can sustain after the end of the project or the living lab. The question is though, what marks the ending of the living lab? When are we going from rehearsing in a real-life environment to something existing in ‘real-life’? This transition is important but has also turned out to be very challenging. In the Give&Take project, the seniors e.g. the walking group are still using the platform as an extension of their interaction beyond their weekly meetings. Thus, for both the public and private partners in the living labs (and the project) it has been difficult to sustain the new practices. This has to do with a rather incomplete and unstable digital platform as well as the lack of time and resources after the project ended, which disrupted the transition from rehearsing to viable ‘real-life’ practices.

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#### LINKS

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