

Living Labs for small retailers – in search of a framework and tools

Work in progress paper for ENOLL Open Living Lab Days 2019

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Abstract

City centers all over Europe are challenged by the effects of recent developments in consumer behavior and online retail. Collaborations of municipalities, knowledge institutions, retailers and consumers are blooming up in many regions to help this transition and find solutions which fit both in the future of retail entrepreneurs and employees and in that of consumers and their social space. These collaborations often take the form of a Living Lab, but don't always fit easily in Living Lab or field lab definitions. Future-Proof Retail, a network of eleven retail labs in the Netherlands, currently researches a comprehensive and practical framework for this kind of labs. First findings include definitions, maturity scores and guidelines for stakeholder engagement. These findings will be presented as work in progress, to share, but also to discuss the methodological approach and possible shortcomings.

Keywords: Retail Field Lab, lab evaluation, lab maturity, lab best practices

Introduction

Future-Proof Retail (FPR) is a national action research program with eleven regional Living Labs. Eight HEIs (Higher Education Institutions) and nine municipalities participate in this program led by The Hague University of Applied Sciences. The participating researchers, technology providers and students in the different labs all work design-led. This means that the collectively found solutions are prototyped and tested during the lab activity period. The companies/private actors in the labs have a very special position, compared to the role of this stakeholder group in other types of Living Labs: When it comes to their role (Leminen, Westerlund and Nystroem 2012) they are both utilizers and users of new technologies and business models. Hence, the eleven labs have all been designed to address specific business, social and skills challenges that small retailers and employees in retail are facing today.

Influenced by changing consumer behavior and new online players, small retailers with physical stores are fighting for their economic survival. However, as retail activity and retail real estate contribute largely to the social environment in city centers, the retail problem reaches further than the sector. Future-Proof Retail was set up in May 2018 to address this problem in an innovative way. Also, it is meant to connect existing local lab initiatives to share knowledge and learn from each other by developing a shared vision and evaluation procedures. As such it can be seen as a network of Living Labs. A recent study on Living Labs in the Netherlands (Maas, Broek and Deuten 2017) distinguished, among other, 'real' Living Labs and so-called Field Labs for the make industry with the first being an 'instrument for transition geared to societal challenges' and the second more an instrument for industry innovation.

The Future-Proof Retail labs do not fit neatly in either of these categories. Which is why the objective of this research is to create a comprehensive and practical framework to support the setup and evaluation of a Retail Field Lab (RFL) as well as to enhance its innovation performance, creativity, efficiency and the value of its outcomes. FPR will work with an initial subsidy until December 2019 to reach this objective.

The subsequent paper will first situate the research objective in existing literature and narrow down on the research gap. Then, it will describe the used methodology. After that first findings will be presented: the RFL Framework Tool, the RFL Maturity Tool and best practices to engage retailers in Retail Field Labs. Finally some questions will be raised for further discussion of methodology and limitations.

Retail Living Labs in the literature

Since the beginning of 2000, Living Labs have started to emerge. An initial focus was the testing of technology in simulated home-like environments (Markopoulos and Rautenberg, 2000) but the practice of Living Labs quickly expanded to other areas of application and broadened its methods. In the following years, research developed complementary perspectives on the Living Lab phenomenon as an environment/context, as a methodology and as a conceptual system of collaborative innovation (Bergvall-Kåreborn and Ståhlbröst 2009). Nowadays, Living Labs know very different areas of application and approaches, but definitions of Living Labs commonly address the importance of a real-life environment and the involvement of multiple stakeholders (Leminen and Westerlund, 2017). Westerlund and Leminen (2011) define Living Labs as “physical regions or virtual realities, or interaction spaces, in which stakeholders form public-private-people partnerships (4 Ps) of companies, public agencies, universities, users and stakeholders, all collaborating for creation, prototyping, validating and testing of new technologies, services, products and systems in real-life contexts”.

The handbook of the European Network of Living Labs (ENOLL) states that Living Labs share certain common elements (Malmberg, K. and Vaitinen 2017):

1. Multi-method approaches: all Living Labs combine and customize different user-centred, co-creation methodologies to best fit their purpose.
2. User engagement: the key to success is to involve the users already at the beginning of the process.
3. Multi-stakeholder participation: even if the focus is on users, involving all relevant stakeholders is of crucial importance. These include all the quadruple helix actors: representatives of public and private sector, academia and people.
4. Real-life setting: a very specific characteristic of Living Labs is that the activities take place in real-life settings to gain a thorough overview of the context.
5. Co-creation: the recognition that users are equal contributors and co-creators rather than subjects of studies. The Living Lab approach strives for mutually valued outcomes that are results of all stakeholders being actively engaged in the process from the very beginning.

Living Lab activities take place across many different domains, typically in health and wellbeing, smart cities and circular economy, culture and creativity, energy and mobility. However, literature on specific lab approaches and methodologies in the Retail sector is scarce (Leminen and Westerlund 2008). This is surprising as transitions in this particular sector are huge and affect cities as well as work opportunities all over Europe and the U.S.. The forecast is that this situation will become more critical in the coming

years (see i.e. McKinsey & Company 2019). As Retail is a very practical and result oriented sector, particularly methods and tools for Living Labs are needed to help retailers, municipalities, real estate stakeholders, technology providers and knowledge institutions to come up with new solutions.

Overall, methods and tools are under researched in Living Labs (Leminen and Westerlund, 2017; Nesti 2018). Looking at the existing tools-focused research in Living Labs (Äyväri and Jyrämä 2017; Leminen 2013; Leminen, Westerlund and Nyström 2012; Leminen and Westerlund 2017; Rits, Schuurman and Ballon 2015; Ståhlbröst and Holst 2013) a number of concepts can be applied to Living Labs in Retail. The stakeholder roles suggested by Leminen et al. (2012) help to draw light on the particularities of Living Labs in Retail. It can be stated that in these labs the goal of developing technologies and new business models is as important as the goal of engaging the entrepreneurs and their employees in learning new skills. This double goal puts the retailers in the role of the user of technologies and new business models as well as in the role of utilizer, who wants to create and extract value from these new solutions. Mostly, knowledge institutions and municipalities are enablers of these labs. It can even be said that the labs are enabler-led. Technology companies, business students and (sometimes) real estate stakeholders act as providers. –This particular distribution of roles present a complex field for lab coordinators wanting to establish ‘successful’ labs. It is from the realization of the urgency of the situation of the Retail sector combined with the gap in research about the particularities of Living Labs for small retailers that we formulated the following research questions:

1. What are ‘successful’ Living Labs for small retailers?
2. How can we enable the setting up of these labs with a tool?
3. What are best practices of engaging retailers to participate in these Living Labs?

Methodology

Three researchers are currently working with these research questions. They are using action research methodology. Following the set-up and activities of six local Living Labs for small retailers in the Netherlands and participating in their process. To answer the first two questions a design researcher is collecting data from all labs using questionnaires. Subsequently, she is designing, prototyping and testing a “lab set-up” tool through several iterations, using all in all eleven labs for testing. A second researchers focusses on the third question using more ethnographic methods. She is taking over the role of lab coordinator herself and reflects on this with auto-ethnography. Moreover, she organizes, leads and reflects on inter visions with a group of ten lab coordinators. Finally, a third researcher is following the first two with more distance to the field. She is observing their reflections and making sure existing concepts and developments in the broader Living Lab literature are taken into consideration when appropriate in the process.

A Retail Field Lab (RFL) framework tool- *work in progress*

During the first phase of setting up a Living Lab all stakeholders that have taken the initiative or showed interest in participating, often do not know where to start. Who leads the way in deciding what to do? What are the shared ambitions or objectives and who’s responsible for which project activity? Labs for small retailers are places where the different cultural contexts and languages of retailers, students, researchers, local government and citizens come together and interact.

To organize a lab like this is not easy: It needs to have an attractive offer for the retailer in order to have him actively participating and at the same time a lab needs to connect to the objectives of all stakeholders involved. The above mentioned literature (Bergvall-Kåreborn and Ståhlbröst 2009; Leminen and Westerlund 2017; Malmberg, K. and Vaittinen 2017; Westerlund and Leminen 2011) was used as a point of departure to create a list of guidelines for setting-up the first activities of labs participating in the Future Proof Retail project. (Figure 1)

1	The Lab has a clear goal/right to exist
2	The Lab has a clear target group
3	The value of the lab for the target group is clear
4	The value of the Lab is clear for all stake holders
5	There is a clear strategy is approaching all target groups
6	The Lab is connected in the triangle : knowledge, government and practice
7	The Lab has a physical place
8	Experimental research is put into practice
9	There is a Lab coordinator
10	There is time money and man power to organize a Lab

Fig. 1

From September to December 2018 the labs' activities and meetings were initiated and organized locally. Researchers followed up with these activities by keeping contact with the lab coordinators about the labs' set up process. In parallel to this, further literary research in relation to Living Labs within different contexts served as a guide to learn about relevant principles throughout the setup and execution of a Living Lab. The criteria for selection were first to make use of the principles that were part of a Living Lab independently of their context (e.g. healthcare, transportation or urban development), secondly take into account the improvements necessary in Living Labs in the Netherlands suggested by Maas, Broek and Deuten (2017). Third, the feedback received by the Lab coordinators based on the outcome of their RFL activities.

Maas, Broek & Deuten (2017) who researched more than 90 Living Labs in the Netherlands categorize four types of initiatives called 'Living Labs':

Types of Living Labs: (summary)

A- The open scientific research facilities:

- To promote knowledge valorization.
- Gives companies better access to knowledge and research facilities from public knowledge institutes.
- Science and innovation policy with which public-private partnerships are stimulated to collaborate in research and innovation.

B- The field labs of the manufacturing industry:

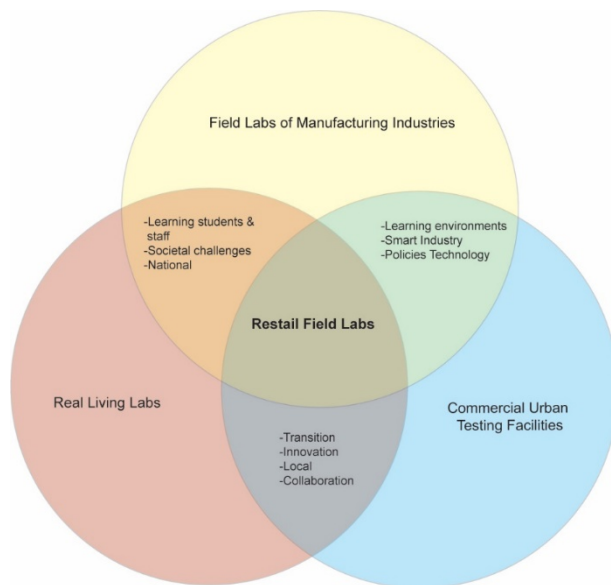
- Aim to improve the competitiveness in the field and strengthen it by jointly learning through applying new (digital) technologies in production processes.
- This type is also a true learning environment in which students and staff can acquire relevant knowledge and skills.
- It is considered a typical instrument for industrial policy, also for the policies of the Action Agenda in relation to Smart Industry.

C- Commercial urban testing facilities support companies in developing:

- Testing and demonstrating innovative solutions.
- Typical tool for the local or regional innovation policy and the promotion of a city or area as attractive locations for innovative activities.
- It fits well in regional triple helix collaboration to strengthen regional innovation ecosystems.

D- The 'real' Living Labs:

- Typical instrument for transition, research and innovation policy aimed at societal challenges.
- They fit well with the policy around the National Science Agenda.
- They are also an answer to the increased need in the policy to tackle social problems in an integrated manner.



The analysis of the actual activities and outcomes of the six Retail Living Labs has been used to place the labs in the typology provided by Maas et al. (2017). Similarities between the characteristics of Living Labs B, C, and D of the typology show an overlap with the characteristics of the six labs for small retailers that were operating during the first phase (September-December 2018) of the Future Proof Retail project. This new classification led to the identification of the FPR labs as 'Retail Field Labs' (RFL) (Figure 2)

Fig. 2 Defining Retail Field Labs

The following principles could be described as ‘pillars’ to operate a Living Lab, thus serve as a supporting framework to structure the activities of the Retail Field Labs and were used to create a framework for RFL practices:

Realism - Involve with Real users in a ‘real context’ situation.

Empowerment and co-creation - User centered focus. Engaging and enabling participants through co-creation. Equal power is given to participants (target group) to influence the process of the Lab.

Data collection and measurement - The use of methods used to collect data. As suggested in ‘The Living Lab Methodology Handbook “Pre- measurement an intervention and a post-measurement, where the intervention is equaled to the real-life experiment”’.

Documentation and analysis - Recollection of structure/unstructured data and documents generated during and after RFL activities. Material such as pictures/video during activities that are relevant to the purpose of the Lab.

Infrastructure - Facilities needed for operational structure (time, budget, installation, network, facilities, technology, etc.)

Communication and engagement strategy - Communication and user engagement strategies used through-out the different stages of the RFL.

Evaluation and reflection – Reflection and evaluation throughout process and iteration

The outcome of this first research phase is a draft of a visual tool that could further support RFL coordinators to set up and evaluate their activities (*Figure 3*). Next to the principles, to place the different actors involved in a Living Lab, an overview of the different levels in which a Living Lab operates (*Malmberg and Vaitinen 2017*) has been added to this framework

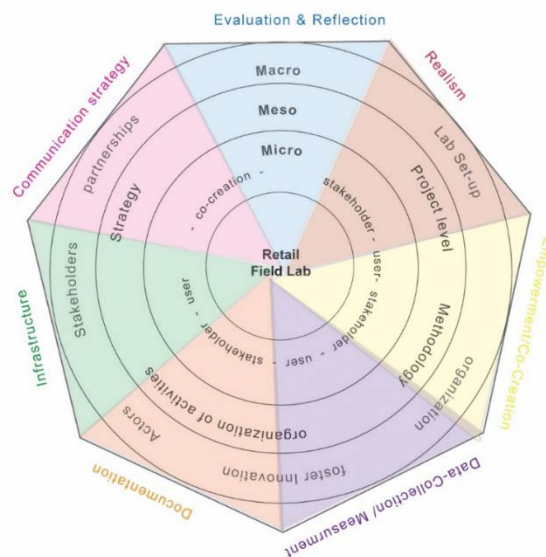


Fig.3 Visualizing Retail Field Lab

A Retail Field Lab (RFL) maturity score - work in progress

To find out how the RFL were operating their activities in accordance to some of the Living Lab principles, further questionnaires and interviews were held. To measure the level of maturity of each lab a comparison was made between how each lab scored in relation to the guidelines provided to them at the start of the project (Fig 4- *preparation score*) and the answers provided by lab coordinators to the questionnaire related to the Living Lab principles (Fig. 5, maturity score). The results of this show the relation between preparation and maturity scores of each participating lab (Fig.6, relationship preparation/maturity).

	Lab Fygital	Instore Future Lab	EHBR(etail)	Storey	Labtraction	Hypelab
1 The Lab has a clear goal/right to exist	+	-	+	-/+	-/+	+
2 The Lab has a clear target group	+	-	+	-/+	-/+	+
3 The value of the lab for the target group is clear	-/+	-	-/+	-/+	-	-/+
4 The value of the Lab is clear for all stake holders	-/+	-	-	-/+	-	-/+
5 There is a clear strategy is approaching all target groups	+	+	-/+	+	+	-/+
6 The Lab is connected in the triangle : knowledge, government and practice	+	+	+	-/+	+	-
7 The Lab has a physical place	+	-	+	-	+	+
8 Experimental research is put into practice	+	-	+	+	+	+
9 There is a Lab coordinator	+	-	+	+	+	+
10 There is time money and man power to organize a Lab	+	-	+	+	+	+

Fig.4 Preparation Score

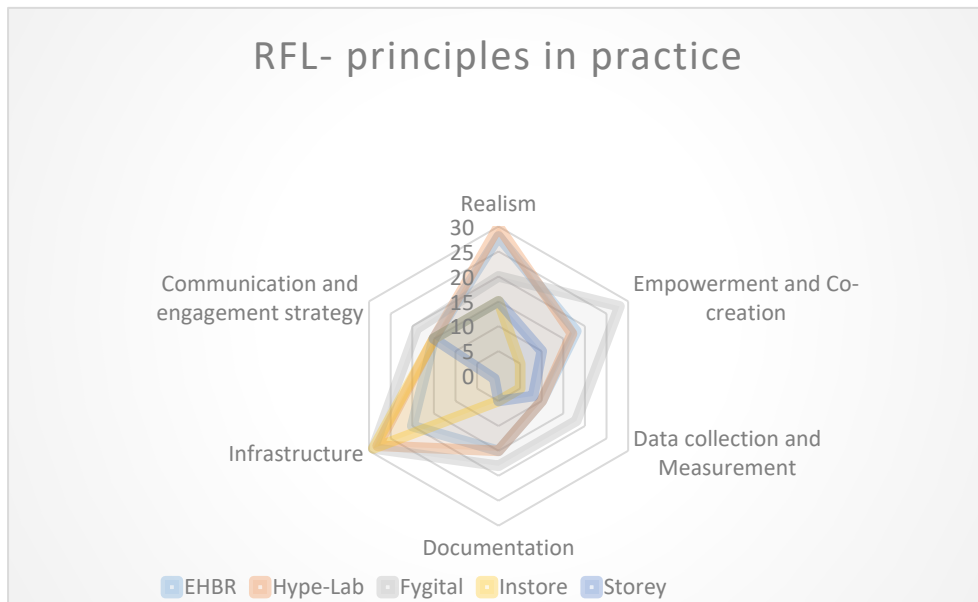


Fig. 5 – Maturity Score

Labs	PreparationScore	MaturityScore
1 Fygital	16	23.5
2 Instore	4	11
3 EHBR	14	16
4 SwapLab	11	12
5 Hypelab	13	17.5

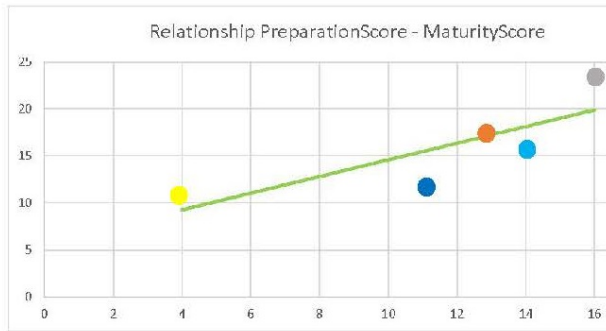


Fig.6 Relation between preparation score and maturity score

Considering these results and the feedback on the first version of the RFL visualization a second version of the RFL framework tool (Fig 7 and 8) was created and used in two workshops during the Future Proof Retail ‘Kennisfeest’, a meeting of all participants of the eleven labs. Feedback was gathered during the workshops which will be used throughout the operations of the new RFL as well as the follow up activities of the initial RFL. As it is stated by Ståhlbröst and Holst (2013), “stakeholders have to be well equipped and have sound understanding of what is going on in their Living Lab”.

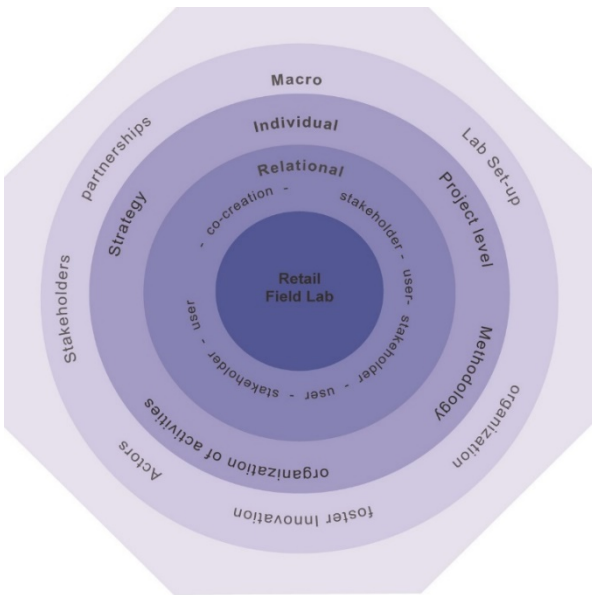


Fig.7 Different Levels in which a Retail Field Lab Operates

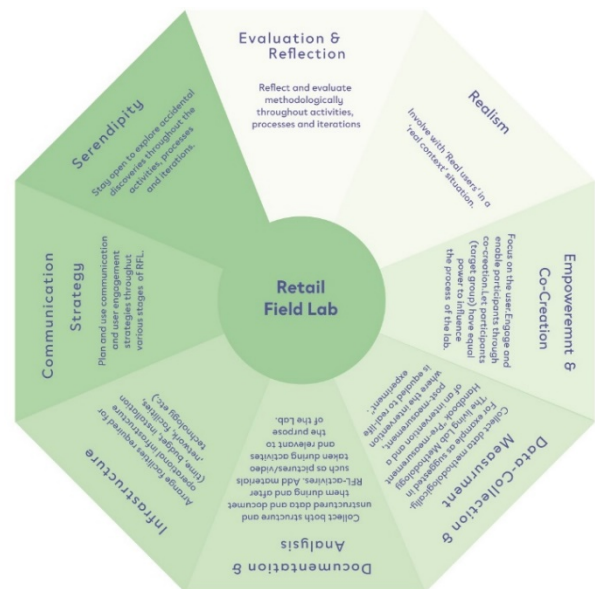


Fig.8 Framework to structure the activities of Retail Field Labs

Best Practices to engage retailers in Retail Field Labs

By participating in different phases of the Retail Field Labs and by systematically evaluating outcomes, a list of best practices could be formulated. In a later phase of the FPR project, these best practices are meant to help stakeholders with setting up Retail Field Labs. The found best practices were ordered (and informed) by the 'pillars' of the structuring activities of Retail Field Labs (Fig. 8).

Empowerment and Co-creation

In the early stages of the project, it became clear that every regional lab has its own contextual challenges and that each context contains different types of retailers. However, one thing small retail entrepreneurs have in common is that they are focused on their own businesses and less on their environment. Additionally, the (SME) retailers have a strong focus on short-term results. Therefore, the project partners had to design a format, an environment and a theme to trigger the retailer to participate. Nomad labs (that visit the retailers and sets up a 'base camp' near the shops of the retailers) were subsequently evaluated as most fit for this purpose.

A constant adaptation of the labs (in form and approach) to the needs of the local stakeholders, such as the 'recruited' retailers (retailers who were participating and committed to the lab), the local municipality, the involved educational institutions and the local (shopping area) associations, seemed an essential factor. For the national FPR research project objectives, the most important group of these stakeholders were the retailers; therefore, the interest of this stakeholder group was always leading within the process of developing a lab. Adaptation of the timeline of the lab to their (working) hours, events etc. Keeping an inventory of all needs, questions and agendas of the most important stakeholders emerged as a best practice for the coordinator of the lab.

To keep the retailer 'on board', the labs needed to be very concrete about the effect and impact of their activities. The answer to the question: "What's in it for me?" needed to be found repeatedly. The retail labs developed like a diorama: all sides could possibly unfold. All sides that present a concrete 'take away' for the participants of the lab needed to be made visible like organized activities, experiences or events in the shopping area, press/media publications, generating traffic and attention.

Within the process of developing a retail lab, trust, language, time and attitude are keywords. A project leader from a Higher Educational Institution for example is not communicating in the same way as an entrepreneur or shop owner. The 'jargon' can make or break an understanding and trust. The solution was often finding local 'linking pin' organizations or individuals that know the shop owners personally: city center or shopping mall managers and deputies of retail associations. They translate the language of education and research, understand the routines of retail and can make the connection between the different professional cultures.

Communication strategy

The following communication aspects were essential for the realization of the lab objectives:

- Each lab needs one coordinator who is the central communicator/facilitator between different stakeholders.
- Creativity and flexibility skills of the coordinator and stakeholders (Design Thinking skills) are essential.
- Cultivating a personal approach: short lines of communication make many things possible.

- Provision of a planning of the activities to be used and completed by the most important stakeholders, although not all activities can be filled out in the preparation phase. There needs to be space for adaptations/reframing.
- Sharing enthusiasm of initiator(s), project coordinator and early adopters via social media
- Creating 'noise' on the outside of the lab by organizing and initiating attractive activities like tours, marketing campaigns and adds in order to reach a broader public and recruit more retailers for future labs

Evaluation and reflection

All stakeholders of the labs agreed: regular and structured evaluation with all labs using the same methodology was key. Intermediate and frequent evaluations with all stakeholders are necessary to reframe and increase effect and to realize the objectives of the lab. It has proven to be a big challenge to register and archive all experiences, best and worst practices (the so-called brilliant failures). Sharing lessons learned, being transparent and showing what you do with those lessons is essential but needs to be balanced with reducing complexity for (at least some) stakeholders.

Conclusion

We are well on our way with the research on the supporting framework, maturity score and best practices of Retail Filed Labs as a hybrid between 'real Living Labs' and Field Labs. At the ENOLL Living Lab Days, we would like to discuss these results, the guiding methodology and its limitations. Furthermore, we would like to brainstorm about elements to finalize our work and make results scalable to a larger field of Living Labs.

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