



## D3.3 – Implementation

### Living Lab methodology

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## Document revision history

Date	Version	Author	Summary of changes
30.6.16	1.0	Paolo Aversano, ENoLL	Table of contents, first draft, , assessment of Living Labs milestones, introduction, conclusions, annex
14.7.16	1.1	Bas Bacarne, iMinds-MICT-UGent	Minor revisions and remarks + added a more elaborate description of the evaluation criteria
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# Introduction

Today organisations are struggling with the practical implementation of 'distributed innovation', or the fact that organisations need to reach outside their boundaries to tap into distributed sources of knowledge to enhance their innovation processes (Bogers & West, 2012). Living Labs are a specific approach, promoted and supported by the European Commission, trying to facilitate and manage distributed innovation processes through a Public-Private-People partnership with a central role for the end- user (Schuurman et al., 2014).

The structured way proposed by Living Labs to implement Open and User Innovation is regarded as being particularly beneficial for start-ups and SMEs to gain new knowledge about new markets and users, learn user-centric methods to innovate, enlarge its own business network and ease internationalisation.

This deliverable has been coordinated by iMinds and ENoLL Living Lab experts and is based on the knowledge and know-how gained by these organisations during the last 10 years. It provides a general review of the work done by all CreatiFI hubs and ENoLL to design a support framework for Creative Ring SMEs willing to improve their innovation processes by trying out user-centric methods.

This document first introduces the chief topic of Living Lab support for SMEs overviewing some of the key methodologies and frameworks that can be used to conduct user research during the innovation development process. Then this deliverable zooms in the *T3.3. Real life Living Lab validation* to report Living Lab support offered to the selected companies of Open Call 2 and Creative Ring Challenge: preliminary presentations and webinars, workshops, face-to-face, personal meetings organised with companies to help them fill out their Living Lab milestone, mail support and more. The assessment framework used to evaluate all submitted CRC Living Lab milestones is also explicated. Ultimately the implementation phase is investigated in its initial steps (D3.3 is in fact submitted before conclusion of implementation phase).

# Framing Living Lab support for SMEs

Living Labs are complex partnerships, as they facilitate university-industry relationships but also relationships between large companies, SMEs and startups. Living Labs are often referred to as public-private-people partnerships (4P's) (Westerlund and Leminen, 2011). Based on a meta-review of the Living Labs literature, Schuurman (2015) defines Living Labs as an organized approach (as opposed to an ad hoc approach) to innovation consisting of real-life experimentation and active user involvement by means of different methods involving multiple stakeholders, as is implied in the Public-Private-People character of Living Labs. Moreover, he also concludes that Living Labs are emanations of both Open Innovation and User Innovation practices, as external inputs, including end-user contributions, are used to iteratively design and co-create the innovation in development. This opening of the innovation process and the involvement of external actors in a structural process have the potential to increase the value and sustainability of the business model of the innovation (Baccarne et al., 2013). Even though Living Labs aim to combine the technological, user and business aspect of innovation through Open Innovation approaches, Rits et al. (2015) point out that the use of the Living Lab to explicate and validate an actual business model seldom occurs, and they suggest to structurally embed the collaboration of different types of researchers (e.g. business model researchers, user researchers, prototypers,...) within Living Lab projects. This embedding of business modelling with the general characteristics of a Living Lab project, with user research is one of the main differentiators of iMinds Living Labs compared to other Living Labs worldwide, who mainly focus on user involvement and stakeholder co-creation. But before digging deeper into the business modelling aspect of Living Lab projects through the LLAVA matrix, we first briefly outline the general Living Lab characteristics and a general methodological framework.

## Living Labs characteristics & methodology

A first general defining element of Living Labs, both in the American as in the European notion, is the ability to study users in a **natural setting** (Schuurman et al., 2011). This means that the technical infrastructure resembles the natural environment (in the case of a laboratory setting), that the technical infrastructure allows to capture user behaviour in the user's everyday environment or that the research methodologies enable capturing the real-life context. Frissen & van Lieshout (2006) also stress this natural setting by defining Living Labs as consciously constructed social environments in which the uncontrollable dynamics of everyday life are accepted as part of the innovation environment which enables designers and users to co-produce new products and services. This final part of the definition also points to the next general characteristic of Living Labs: a **user-centric innovation approach**, as opposed to technology-centric innovation. In Living Labs, users are not considered as passive respondents but as active collaborators or co-producers (Ballon et al., 2007; Almirall & Wareham, 2008). Based on an identified problem, a solution is being developed in close interaction with end-users, a process of co-creation aimed at gaining access to the ideas, experiences, and knowledge of these end-users (Ståhlbröst & Bergvall-Kåreborn, 2008; Thiesen Winthereik et al., 2009). This close interaction and active involvement can only be achieved by adopting a **multi-methodological approach**, with quantitative as well as qualitative research methods with the focus on accessing the ideas and knowledge of these users (Eriksson et al., 2005; Niitamo et al., 2006). Within the prototypical Living Lab projects we will describe further on, these elements are taken into account.

The most detailed attempt at drafting a more generally implementable Living Lab methodology, starting from a user innovation point of view, can be found in the work of Pierson and Lievens (2005) who also suggest taking into account user characteristics. They describe different elements constituting the set-up of a Living Lab-project, based on a multiple case study research. Their analysis unveils the following five elements which consist of the following steps:

**Table:** Living Lab methodology according to Pierson & Lievens (2005)

<b>Contextualization</b>	<b>an exploration of the technological and social implications of the technology or service under investigation; technological scan and state-of-the-art study</b>
<b>Selection</b>	identifying potential users or user groups; this can be done on a socio-demographic level, based on selective or criterion sampling, allowance for theoretical variation of previously defined concepts
<b>Concretization</b>	an initial measurement of the selected users on current characteristics, behavior and perceptions regarding the research focus, in order to enable a post-measurement
<b>Implementation</b>	the operationally running test phase of the Living Lab; research methods: direct analysis of usage by means of remote data collection techniques (e.g. logging), indirect analysis based on e.g. focus groups, interviews, self-reporting techniques...
<b>Feedback</b>	an ex-post-measurement of the users (same techniques of initial measurement) and a set of technological recommendations from the analysis of data gathered during the implementation-phase

Note that this general Living Lab-methodology shows quite some overlap with the Lead User-methods we discussed earlier. Characteristics, behavior and perceptions regarding the domain-focus of the innovation are explicitly mentioned as important criteria, as well as the identification of potential users or a potential user group. However, we feel that this already narrows the scope too much, as users that are not likely to become actual adopters or users of the innovation might also provide useful inputs.

The pre- and post-measurements of the users stress the ability of a Living Lab methodology to assess changes in attitudes, habits, practices,... regarding the innovation in development and allows to uncover the 'added value'. Reflecting back to the original American notion of Living Labs, this methodological set-up remains very similar to the traditional quasi-experimental design (Campbell & Stanley, 1966). The first three stages can be considered as the 'pre' stage, the implementation phase as the 'intervention' and the feedback phase as the 'post' stage, with the



difference that this is carried out in a non-laboratory or real-life environment.

**Table:** Methodological design Living Lab research

<i>Pre-test</i>	<i>Intervention</i>	<i>Post-test</i>
- Contextualization		
- Selection	- Implementation	- Feedback
- Concretization		

Within the literature on User Innovation some barriers to user involvement and user contribution have been identified. Frissen (2000) suggests that contextualization and triangulization are means to overcome these barriers. Taking into account the described quasi-experimental design and the real-life experimentation, Living Labs might be able to overcome these barriers. However, the literature itself is mostly silent regarding these possibilities or regarding concrete outcomes. The single more quantitative investigation of the impact of this methodological approach can be found in the work

## Integrating Business Modeling with Living Labs: the LLAVA matrix

For the CREATIFI Living Lab projects, we will start from the Validation Board<sup>1</sup> or the LLAVA Matrix (Living Lab Assumption and Validation Matrix), as it was recently renamed by iMinds Living Labs. The LLAVA Matrix is a supporting tool for entrepreneurs and companies in their development of new services and products. This tool enables them to innovate in a structured way with a clear focus on all stakeholders and their specific needs and expectations.

Originated from the Lean Start-up methodology, this approach promotes the iterative and pivoting way of experimenting and testing. Working with

<sup>1</sup> <https://www.leanstartupmachine.com/validationboard>

the LLAVA Matrix offers a compass throughout the innovation development process and enables the prioritisation of choices, based on the results during the Living Lab project. Within the LLAVA Matrix, all knowledge and assumptions regarding the envisioned customer segments are logged and categorised based on the type of knowledge that is present regarding the different aspect with regards to the customers, market and technology.

Within iMinds Living Labs, the LLAVA matrix is used in two phases:

1. During the initial intake a number of specific goals and objectives and underlying assumptions are formulated through an interactive dialogue. The focus is on the problem, the solution and the stakeholder;
2. Subsequently, the results of the research activities within the Living Lab projects are used to reflect on these initial assumptions. The allows to assess to what extent they are valid and what impact it has for the rest of the innovation track.

Depending on the duration of the Living Lab track and the applied methodologies the number of iterations and funnelling can differ. As all CREATIFI-projects already drafted and iterated their own LLAVA matrices, these can be used as inputs to guide the Living Lab projects. Where the validation board from the lean start-up focuses on the users, their need and the solution, the LLAVA matrix as was used in the CREATIFI projects extended the validation board with business model components as shown below:

CUSTOMER SEGMENT		WHAT IS THEIR COMMON CHARACTERISTIC IN WHAT WAY DO THE DIFFERENT SEGMENTS DIFFER	
COMMON NEED		WHAT IS THEIR COMMON NEED, PAIN OR ASPIRATION WHAT MARKET OR SOCIETAL TRENDS WILL AMPLIFY THAT NEED	
VALUE PROMISE		WHAT IS YOUR VALUE PROPOSITION WHAT IS YOUR MARKETING MESSAGE	
SOLUTION		CORE COMPONENTS OR FUNCTIONALITIES SPECIFIC COMPONENTS SPECIFIC COMPONENTS FIWARE ENABLERS	
VALUE NETWORK		COMPONENTS ⇔ E2E SOLUTION ROLES ⇔ VALUE CREATION, DELIVERY, CONSUMPTION & CAPTURING	
COMPETITION		WHO ARE YOUR COMPETITORS AND ALTERNATIVES HOW DO YOU DIFFERENTIATE FROM THEM	
WILLINGNESS TO PAY (WTP)		PRICING MODEL PRICING LEVEL	

**Figure:** the Living Lab Assumption and VALIDation (LLAVA) matrix

A full discussion of the LLAVA tool, the framework and the guidelines for management and planning are beyond the scope of this deliverable, but a tool such as LLAVA is key for successfully embedding and linking user-, stakeholder- and business research in living lab tracks. For a more detailed account of the development of the LLAVA matrix we can refer to Rits et al. (2015).

### Prototypical B2C & B2B Living Lab projects

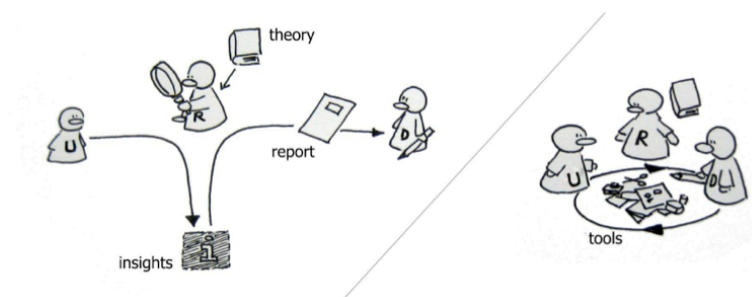
Within this section we will describe the outlook of a 'standard' Living Lab project in terms of methodological set-up, taking into account the pre-post test design and the real-life intervention. Different tools and techniques can be used to carry out the different steps, and additional research may be carried out in order to obtain additional results and validation of certain assumptions that are considered important for the innovation development process. For additional methods and examples of Living Lab projects that followed this methodological design, we can refer to Schuurman (et al., 2015; 2015), who also demonstrated the added value this methodological design provides.

We distinguish between B2C and B2B projects, as the nature of the end-user is different for both categories of projects. At the end of the B2C section, an illustration shows the different steps for both prototypical Living Lab projects.

For a B2C-project, the prototypical example of a Living Lab project would start with an **exploratory co-creation session**. This session would be aimed at validating critical assumptions from the LLAVA-matrix. These assumptions are related to the different customer segments that are also logged within the LLAVA matrix, so the recruitment of these users should be based upon these segments.

Typically, a session like this consists of between 8 to 12 envisaged users with heterogeneous characteristics, as research has indicated that enhances the co-creative potential of the group. During a co-creation session, the participants are not merely 'being researched' but are also invited to actively think about the results and possible solutions of the innovation.

### Classical innovation process versus Participatory design & Co-creation<sup>2</sup>



Typically, these sessions start with asking the respondents inputs regarding their current habits and practices in the innovation domain. In a next stage, the facilitator of the session looks for the needs and wants with regards to the current habits and practices. What could be better? What are current issues or gaps in the offering? This part of the session

<sup>2</sup> Figure From: 'Sanders, E.B.-N. & Stappers, P.J., 2008. Co-creation and the new landscapes of design, CoDesign: International Journal of CoCreation in Design and the Arts, 4(1), 5-18.'

allows to dig into the assumptions that are logged within the LLAVA matrix under the 'common needs'. This first stage of the co-creation can be characterized as 'exploratory' and focusses on user habits and practices, related to user needs and wants. The duration of this stage depends on the

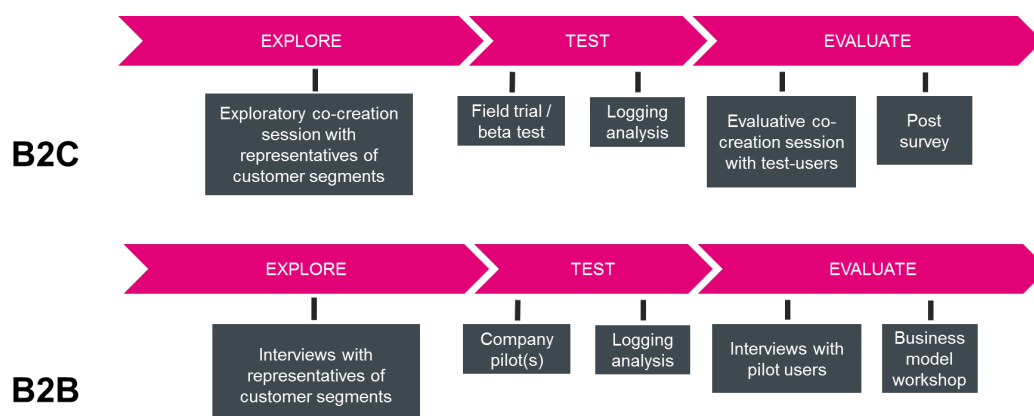
In the second stage of the co-creation session, the innovation is presented to the participants. This can be done by means of a pitch and, if possible, a live test, trial or demonstration of the innovation. This allows to relate the needs and wants to the value promise of the innovation. The assumptions of this part of the LLAVA matrix can be validated. Creative techniques such as projection can be used to assess the user reactions to the innovation. An interesting technique is 'user in the command'. The user group is split up in smaller subgroups that get the role of managers of the innovation. They need to come up with a slogan, a market approach and a way to make money with the innovation. Through the role-taking activity, willingness-to-pay and value promise can be deducted in an unobtrusive way which is nevertheless fun to do for participants. This pre assessment (which can also take the form of a survey) provides input to modify and further develop the innovation.

As a next step in a prototypical Living Lab project, a number of users is invited for a real-life field trial. This means that the innovation is rolled out for the end-users to be used in their daily environment. The exact outlook of this field trial depends on the type of innovation and on the maturity of the innovation. Ideally, the field trial lasts for a longer time period (e.g. one month) to take into account the 'testing effect', as users are mostly very motivated to try out the innovation at the start of the field trial, but that 'true' usage patterns only emerge after this initial stage has passed.

An important aspect during this field trial is the technical logging of user activity with the innovation. This allows to capture an unbiased view of the actual test user activity. This is best complemented with some self reporting measures from the test users (e.g. by sending an intermediary survey, by asking the users to keep a usage diary, by installing a channel through which users can provide spontaneous feedback,...). This allows to compare what users say and what users actually do, which offers a more reliable assessment of the innovation.

For the number of test users to be involved, this depends on the maturity and characteristics of the innovation. Ideally, representatives of the different customer segments partake in the field trial. As main outcomes, the field trial provides a real-life validation of the potential of the innovation (does it live up to the expectations of the users?) and generates ideas and suggestions for modifications of the innovation. The longer the field trial lasts, the higher the chance that (a)typical usage patterns might arise, as the domestication process can unfold. A longer field trial also enables the detection of 'defectors', which are users that have stopped using the innovation. They are interesting to investigate more deeply as they can provide issues or roadblocks for the adoption of the innovation. The more active and regular users can indicate the drivers for adoption. These drivers and barriers can partly be abstracted already during the field trial, but most of the information is captured in the final stage.

As a final step (the evaluation stage), a 'post' measurement of the test-users is held. For this, the co-creation session format can be used, but also a survey. The session format allows to dig deeper into the experiences of the test users. The participants can be chosen based on the customer segments of the LLAVA matrix, but also based on their actual behavior (in the case of log files) or on their responses on self reported data. The survey allows to capture a more quantitative assessment of the testers, and also allows to assess the adoption potential of the co-created, modified innovation.



For B2B projects, the general rationale of pre measurement, real-life intervention and post assessment is also followed, but some aspects should be tackled differently because of the different nature of the users (which are companies, or rather people in the role of employees of companies).

For example, a co-creation session with stakeholders or potential customers of the innovation from different companies is mostly not a good idea, as in their role as employees of different companies, people are reluctant to speak freely because of confidentiality. In most instances, different companies can be a competitor, or can become a competitor of the innovator, and a lot of companies have relationships to one another which have nothing to do with the innovation in development. Therefore, the group dynamics that characterize co-creation sessions are mostly contra-productive in a B2B-setting. As an alternative, it is better to talk to representatives of stakeholders and companies individually, as this increases the chances of valuable, less biased and more honest contributions. In terms of outlook and structure, the interviews are similar to the user co-creation session (first look at habits and practices, then for needs and wants, and evolve to an introduction of the innovation to assess the value promise), but with less emphasis on creative and projective techniques.

For the field trial phase, in B2B-cases this mostly consists of a company pilot. Most likely this company will be one of the interviewed stakeholders/potential customers with the most interest in the innovation. The capturing of feedback and user reactions can be rather similar to the field trials of B2C-innovations, with the exception that the test users are the employees of the pilot company that interact with the innovation. Most often, there are various roles that interact in different ways with the innovation, this should be taken into account when choosing the self-reporting methods.

As a final step, interviews can be scheduled with employees that participated in the pilot. If the participants are from the same hierarchical level within the company, a co-creation session can also be used, but interviews are preferable when there are hierarchical differences. Within these interviews or group sessions, the usage of the innovation during the company pilot is discussed. What value did the innovation generate? Does

this match with the intended value promise? Does this solve the needs and wants of the employees interacting with the innovation?

For B2B-projects, additional reflection should be dedicated to the nature of the company in which the pilot was held. For which customer segment is this company representative? Is this the ideal customer segment for the go-to-market, or should other customer segments be targeted? If this is the case, more company pilots should be carried out in companies representative for these other customer segments.

## Steps

Step 1: identify the different customer segments from the LLAVA matrix. Compose a list of questions and issues based on the assumptions and 'unknowns' from the LLAVA matrix.

Step 2: operationalize the different dimensions in the Lead User toolbox for the different customer segments –What can be labeled as 'high usage experience'? Who are the defectors? What are proxies for 'new needs'? Compose a long list of profiles that fit the different user types of the Lead User toolbox for each of the segments.

Step 3: recruit users that fit the profiles.

In any case, the results of each research step should be discussed with the instigator of the Living Lab project in the light of the LLAVA matrix. What assumptions can be validated or which 'unknown' values can be marked as 'known'? Are the customer segments still valid, as well as the needs, value promise and solution? This also enables to define the research questions for the next research steps. What should be focused upon during the next research steps. What feedback or contribution is necessary to obtain from the end-users? This way, the LLAVA-matrix offers a structure and framework to guide the user research and the different steps to be taken during the innovation development process. It can also be used to track the evolutions and modifications that have been made in terms of the different aspects of the innovation, and it also provides focus for the next steps to be taken. Moreover, the methodological structure of a Living Lab project enables a 360 degrees



user validation and a clear assessment of the (potential) added value by means of the pre-post test design. The real-life experimentation allows to confront the 'saying' versus 'doing' of end-users and provides richer, deeper insights into the user experience.

# Living Lab support for the CREATIFI wave 2 companies

On Wednesday January 20<sup>th</sup> the 15 companies of CREATIFI wave 2 received a full day training in Brussels from Living Lab user research and business modelling experts dr. Dimitri Schuurman and Olivier Rits. In this training, different aspects on the business model were discussed, based on the LLAVA matrix methodology, and a specific part on pricing was included, as was requested by the companies. The Living Lab support dealt with user selection and with how to conduct user interviews and compose topic guides. All companies were requested to send in their topic guides and interview results in advance and the training specifically focused on their current work. Specific tips and tricks on how to conduct user interviews, how to select them and how to interpret the results were given.

# Living Lab validation for Creative Ring companies – first steps

In the context of the Creative Ring track and Creative Ring Challenge the Living Lab Validation tasks have the role to support top selected companies in the final development of their applications by offering valuable Living Lab inputs for further development and new business opportunities.

The Creative Ring Challenge included 2 steps awarding 19 projects in the first phase and 8 max. in the second (2 per CreatiFI hub). As a consequence Living Lab support was meant to be more general and focused on introducing Living Lab methodologies during phase 1, whereas real-life experimentation with end users was part of phase 2. Living Lab validation was concretely delivered by the 4 CreatiFI Pilots: Barcelona, Flanders, Trento and Helsinki with the support of the ENoLL team and iMinds coordination.

## Phase 1 - Introducing the Living Lab framework

During the challenge week (March 21-25<sup>th</sup>, 2016) the CreatiFI consortium introduced Living Lab methodologies to applying companies. The concept was new to many applicants, thus it was necessary to progress gradually. Projects were attracted through the local hub ecosystems. An introductory presentation on Living Labs and user-centric methods was given during the kick-offs by some local Living Lab experts to present the basics, stimulate discussion with companies and help them reflect on how to use user-centric methodologies for the sake of further business development.

**In Trento,** Living Lab expert Marco Combetto (ENoLL member and connected to Trentino Sviluppo) ran a workshop of 40 minutes happening in parallel with matchmaking activities. 11 companies participated in the session following Marco Combetto's introduction to Living Labs, the ENoLL network and Living Lab model for SMEs. A lively discussion with participating companies allowed replying many of the questions posed during the session.

**In Flanders and Eindhoven** a solid Living Lab introduction was given during the kick-off by an iMinds Living Lab expert, whereas in the three participating hubs (Brussels, Eindhoven & Ghent) specific local support was given to all participating projects. These activities consisted of a an interactive 2,5 hour workshop introducing the Living Lab user innovation framework following the LLAVA matrix structure (see more in the section *Framing Living Lab support for SMEs*). All participants started filling out the LLAVA matrix during these workshops and started listing to-be-tested assumptions. Different methods and tools from the User Innovation toolbox (<https://www.iminds.be/en/userinnovation>) were introduced and participants developed an initial validation plan.

## Phase 2 of the Creative Ring challenge

Most Living Lab support's activities were then deployed in the context of the Creative Ring Challenge – phase 2.

A Living Lab validation deliverable was composed and introduced by iMinds and ENoLL Living Lab experts by means of a **webinar** on June 1<sup>st</sup> from 4 to 5pm CET using GoToMeeting. 19 teams participated live in this webinar. The goal was to help all selected CRC projects understand the process and fill out the Living Labs deliverable. iMinds and ENoLL have in fact developed a template that all companies needed to complete to explain how they intend to use Living Lab methodologies in the final development of their product/service. The template (see Annex 1) delves into 5 different macro-topics:

- Innovation process;
- Living Lab validation;

- Measures to involve users;
- Stakeholders;
- Cross-border collaboration.

This webinar was run by Paolo Aversano (ENoLL) and Dimitri Schuurman (iMinds) and had the following agenda:

- What are Living Labs + Q&A
- Living Lab support for SMEs: what this is about + Q&A
- Living Lab validation in CreatiFI + Q&A
- Template: explanation of the 5 sections of the template + Q&A

Several participants expressed great satisfaction at the webinar's outcome as they were able to receive more information on Living Lab methodologies, CRC template and support mechanism put in place by each hub to fill out milestones by the deadline of June 20<sup>th</sup>.

Webinar was recorded and sent to all CRC companies together with PPT slides to help companies that were not able to attend the meeting (recording of the webinar can be downloaded here: <https://www.dropbox.com/s/3xy0vf9a105d2l2/CreatiFI%20webinar%20on%20Living%20Lab%20validation%20-20160601.mp4?dl=0>).

In addition to the webinar, each hub identified a local Living Lab expert that could be contacted by companies while writing the milestone when need be. Also, local meetings were organised by some of the CreatiFI hub to further support Creative Ring SMEs.

**In Helsinki** for instance local hub organised a Living Lab workshop on the 2<sup>nd</sup> of June to introduce the general idea of living lab validation and some testing methods to Creative Ring companies. This workshop focused on the basic principles of Living Lab methodology: goal was to help companies and developers better understand their assumptions in user-driven innovation processes. The workshop was attended by all companies accessing phase 2 of the Creative Ring challenge in Finland (10 people were present) and was led by Living Lab experts Veera Mustonen and Jenni Niemiaho from Forum Virium Helsinki. In addition to this, Helsinki hub also organised one-to-one meetings with companies on the 10<sup>th</sup> of June to help them define the living lab test plan.

**In Barcelona** the Living Lab expert Pau Adelantado from i2Cat met all local applicants of Creative Ring Challenge – phase 2 to give face-to-face, on-on-one support. During these working sessions companies could ask clarifications on the Living Lab validation process, template to be filled out, and they could be helped by Pau Adelantado while writing their Living Lab milestone.

It is worth specifying that during all these meetings cross-hub & cross-country activities with other selected SMEs or members of the Creative Ring were strongly encouraged when supporting SMEs writing their Living Lab milestone.

During this stage the Flemish and Trento hubs decided to focus on the one-on-one coaching sessions organised on the 16<sup>th</sup> and 17<sup>th</sup> of June in Barcelona. More information is shared in next section.

# One-on-one coaching sessions

In addition to the support actions overviewed in the section above, CreatiFI organised one-on-one coaching sessions during the CRC pitching session organised on the 16<sup>th</sup> and 17<sup>th</sup> of June, 2016 at Disseny Hub in Barcelona. During these sessions CRC projects from all hubs received support by the iMinds Living Lab coach Bastiaan Baccarne.

During the previous weeks companies were already invited to book a slot to discuss their Living Lab idea with the Living Lab expert: feasibility, writing of the milestone, local support from the hub and more. 7 companies booked a slot (see tables below) and many more asked an informal meeting with either Bastiaan Baccarne or Paolo Aversano from ENoLL to discuss Living Lab milestone before final submissions.

Wednesday, June 15, 2016 - Disseny Hub, Barcelona					
Start	End	Company	Project	name	Email
13:00	14:00	mARc project s.r.l.	Gamification and Ecomuseum Judicaria	Nicola Avi	avi@marcproject.it
18:00	19:00	Belka	Museum-Booth	Giulio Michelin	giulio@belka.us

Thursday, June 16, 2016 - Disseny Hub, Barcelona					
Start	End	Company	Project	Your name	Your email
11:00	12:00	OC Lab	QuVi Live Stream	Mario Giammarco	mgiammarco@oclab.it
12:00	13:00	ReportLab	OpenTrack	Andy Robinson	andy@reportlab.com
13:00	14:00	Dimension	Nuntius	Daniele Dalledonne	dan@dimension.it
14:00	15:00	Domestic Data Streamers	Citizen Constellations	Nicola Montaretto	nicola@domesticstreamers.com
15:00	16:00	GiPStech	museum indoor platform	Matteo Faggin	m.faggin@gipstech.com

## Format of the workshop

The workshop was tailored to the needs of the companies, encompassing four dimensions:

- Formulating hypotheses and assumptions in a valid and structured way
- Linking hypotheses with user segments, research formats and methodologies
- Exploring and understanding possible research methodologies
- Implementation of the research design in the Living Lab deliverable document

For the first dimension, the iMinds LLAVA matrix was used as a guiding framework. This framework helps in making implicit assumptions explicit, and to think about the most critical assumptions for the success of the innovation. These assumptions are then to be refined and made testable in the form of specific research questions.

For the second dimension, the research questions were linked to user segments that have the knowledge which is required to answer these questions (knowledge localization). For this, the Lead User matrix was used (Schuurman, Mahr & De Marez, 2011; Schuurman & De Marez, 2012: <http://timreview.ca/article/606>). Furthermore, we elaborated on formats to extract this (often latent) knowledge in formats such as surveys, field trials, interviews, lab experiments, etcetera (knowledge aggregation). Finally, we connected this to the specific methodologies that could be implemented within these formats (knowledge extraction).

The third dimension focused on the methodological possibilities. The goal here was to inspire the companies to think beyond their current way of looking at user research. By means of the [User Innovation Toolbox](#) (containing 86 different methods), the benefits and downsides of the relevant methodological choices were discussed. Besides the focus on the individual methodology, we also looked at the value of multi-method designs and how one method could strengthen another.



The final dimension took a deeper look at the deliverable itself and how the above three dimensions could be integrated in the proposal. Using the template as a guiding framework, the different aspects of the proposal were deeper explained and applied to the context of the company.



*One-on-one coaching sessions at the Disseny Hub*

## Outcome of the workshop

Depending on the maturity of the Living Lab project (in terms of research ideas), the goal was to inspire or evaluate the deliverable. Further follow-up though e-mail was possible to iterate on the research designs.

## Evaluation of the workshop

The participating teams were very different in terms of product maturity, company maturity, maturity of the Living Lab deliverable and experience with user research or user-centric design. However, the tailored approach allowed knowledge transfers that were perceived valuable for the living lab proposal. These knowledge transfers also transcended the Living Lab deliverable and the Creative Ring Challenge. It also inspired them to apply this approach in current and future projects (to think about implicit assumptions and the different approaches to validate them with various stakeholders).

Most teams lacked a goal-driven research project. Also, the research questions and research methods were not aligned. During the workshop, we worked on aligning these dimensions. On top of that, extra advice was provided to fit the research design in the deliverable template.

The participating companies affirmed this evaluation through a brief follow-up survey (limited response).

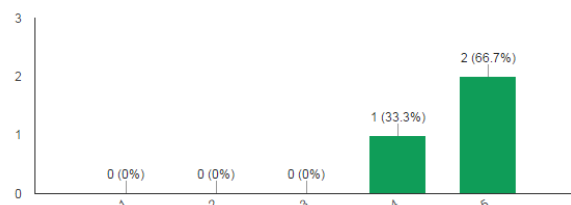
[How would you evaluate the face-to-face meeting?]

*"Great. Stimulating and much more concrete than the webinars, which were really hard to relate to our situation. We emerged with a concrete plan to use the Living Lab process to improve our product"*

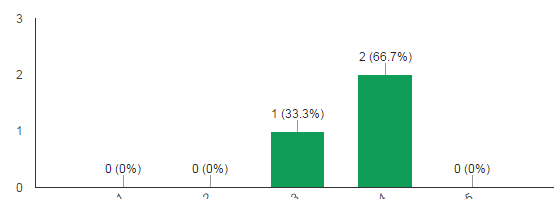
*"It was useful"*

*"Very good, interesting and helpful. Bastiaan was very nice to talk with and provided lot of useful information and inspiration."*

To what extent did this meeting provide added value for your Living Lab deliverable?  
(3 responses)



To what extent did this meeting provide added value beyond the Living Lab deliverable?  
(3 responses)



*Living Lab proposal one-on-one e-mail Feedback*

Besides the physical one-on-one meetings, follow-up feedback was provided through e-mail by Bastiaan Baccarne and Paolo Aversano. For the companies of the Barcelona hub, all of the participating teams were asked to send a first draft by June 14<sup>th</sup>. These drafts were reviewed and feedback was digitally distributed. Ten teams made use of this offer.

# Living Lab milestones' assessment

All deliverables on Living Lab validation were reviewed and scored by Living Lab experts based on a review framework composed by ENoLL and iMinds.

All documents for the evaluation process were managed through a Dropbox folder visible only to evaluators and CreatiFI project partners.

The evaluation was carried out using a Google Spreadsheet stored online and shared only with evaluators (image below and <http://bit.ly/296XKTv>).

CRchallenge_LLmilestone_assessment								
File Edit View Insert Format Data Tools Add-ons Help Last edit was yesterday at 5:08 PM								
Company Name								
A	B	C	D	E	F	G	H	I
Company Name	Hub	Reviewer	Total	Company readiness to field-trial (Question 1)	Research question's relevance (Question 2)	Quality of the research design (Question 3)	Ecosystem's involvement (Question 4)	Cross-border opportunity (Question 5)
Maximum score			50	10	10	10	10	10
Belka s.r.l.	Italy	Dimitri Schuurman	36.75	7	7	8	7	8
		Bastiaan Baccarne	34.5	7	6	8	7	6
		Total score	71.25					
Brandsome.fi	Finland	Pau Adelantado	28.25	6	4	7	6	5
		Paolo Aversano	33.5	7	7	7	6	6
		Total score	61.75					
Connected Bodies	Spain	Dimitri Schuurman	25	5	5	5	5	5
		Bastiaan Baccarne	26.5	6	6	4	5	6
		Total score	51.5					
Croma - HandmadeDan	Spain	Dimitri Schuurman	33.5	6	7	7	7	6
		Bastiaan Baccarne	35	7	7	7	7	7
		Total score	68.5					
Dimension s.r.l.	Italy	Dimitri Schuurman	36.5	9	9	5	7	6
		Bastiaan Baccarne	30.25	8	8	3	6	5
		Total score	66.75					
EVapp	Benelux	Pau Adelantado	41.5	9	8	8	8	9
		Paolo Aversano	38.25	8	8	7	8	7
		Total score	79.75					
GipsTech s.r.l.	Italy	Dimitri Schuurman	40	8	8	8	8	8
		Bastiaan Baccarne	38	8	8	8	6	8
		Total score	78					

*Living Lab validation – assessment spread sheet*

ENoLL and iMinds decided on 5 evaluation criteria based on the 5 macro-topics proposed on the template:

- **Company readiness to field-trial:**

Given the timeframe of this project, both the organization and the innovation had to be mature enough to allow field-trials during the next months.

- **Research question's relevance:**

The central questions of the proposed research track needed to be valid, grounded, relevant and specific. Preferably, these evolved out of a structural analysis of the innovation (such as the LLAVA matrix) which revealed the most crucial assumptions that needed to be validated in order for the innovation to be successful.

- **Quality of the research design:**

How were these questions translated in a suited methodological approach. Were the methods linked to the research questions? Were the proposed methods an optimal choice to obtain the required knowledge? The specificity and feasibility of the proposal were also taken into account.

- **Ecosystem's involvement :**

Which ecosystem actors should be included in the field trial? Which commitments are already made? What do the dependencies look like? This dimensions was mainly evaluated in terms of project feasibility.

- **Cross-border opportunity:**

How the company would benefit from cross-border collaboration. What could they learn from such approach? How should such a collaboration look like? What commitments are already made? This dimension wat mainly evaluated in terms of potential.

Four Living Lab experts from three different countries (Italy, Spain, Belgium) were chosen based on Living Lab expertise as well as geographical distribution and asked to carry out evaluations:

- Pau Adelantado, i2Cat
- Paolo Aversano, ENoLL
- Bastiaan Baccarne, iMinds
- Dimitri Schuurman, iMinds

Every milestone was read by two evaluators and their evaluations were summed to obtain a final cumulative score per company reported into a composite evaluation spreadsheet. As a grading system evaluators used a 0 (fail) – 10 (excellent) scale. Given the scope of the template, the first (maturity) and last dimension (cross-border opportunity) were weighted down by a factor 0.5. For the first dimension, this provided room for more explorative proposals. The cross-border opportunity, on the other hand, could not be taken fully into account since this was an optional field in the template. To avoid conflict of interest all evaluators didn't read proposals from their own country. Evaluations from 4 CreatiFI Living Lab experts were submitted on the 22<sup>nd</sup> of June to project coordination and these were merged with evaluations provided by local juries to ultimately choose winners of the Creative Ring Challenge – Phase 2.

# Implementation phase

Once the evaluation process of CRC companies is over the implementation phase will start during Summer. Results of this work ending in October cannot be presented in this deliverable since this document is going to be submitted earlier. Still, the 8 selected Creative Ring companies will define together with correspondent CreatiFI hub a way forward to make their Living Lab milestone happen from July to October 2016. The main building blocks of the Living Lab validation are defined in the Living Lab milestone they submitted and this will help figure out swiftly how the validation process will take place. An individual deployment plan will be defined for each selected SME, taking into account the specifics of the application. The CreatiFI consortium foresees a pilot period of at least 3 months to facilitate the set-up, introduction, testing, adjustment and final validation. The local CreatiFI hub partner will facilitate this whole process (offering the eco-system, the test-panel, executing the research activities together with the SME team). CreatiFI hubs have already provided the consortium with preliminary plans to support local SMEs in developing their Living Lab milestone. Monthly calls with CreatiFI Living Lab experts and CreatiFI hubs will be organized to check work done, discuss challenges, support each other during this iterative process.

# Conclusions

This deliverable overviewed work plan put in place by the CreatiFI consortium to offer Living Lab validation services to CreatiFI/Creative Ring companies.

This analysis first gave a general review of Living Labs and their peculiar user-centric innovation approach where users are not considered as passive respondents but as active innovation collaborators or co-producers. After looking at the advantages of using Living Lab methodology to support SMEs' innovation capacity, the document reports work done to:

- Explain basics of living labbing to Creative Ring companies, both during plenary CreatiFI meetings as well as locally: user-centric methods, support towards internationalisation, gaining knowledge about new users/markets and more. This was done using a combination of methods: workshops, webinars, face-to-face coaching sessions, mail support, sharing of materials and more;
- Guide Creative Ring companies through the submission of a Living Lab milestone during phase 2 of the Creative Ring Challenge. All CreatiFI hubs contributed to the process involving their Living Lab experts, organising meetings with companies and supporting them both offline and online;
- Collect Living Lab milestones and assess them professionally and avoiding conflict of interest. A dedicated Living Lab evaluation process based on the experience of ENoLL and iMinds was arranged and Living Lab milestones were assessed by a team of experts;
- Implement Living Lab plans of the selected companies. As said this work is due in October 2016 and will be carried out after submission of this document: a comprehensive summary of achievements will be delivered during final CreatiFI review meeting.



# References

Almirall, E., & Wareham, J. (2008). Living Labs and open innovation: roles and applicability. *The Electronic Journal for Virtual Organizations and Networks*, 10(3), 21-46.

Baccarne B., Schuurman D., Seys C., (2013) *Living Labs as a navigation system for innovative business models in the music industry*, XXIV ISPIM Conference, June 2013

Ballon, P., Pierson, J., Delaere, S. (2007). Fostering innovation in networked communications: test and experimentation platforms for broadband systems. In: Heilesen, S., Jensen, S. (Eds.), *Designing for Networked Communications: Strategies, Development*. ISI Global, London, pp. 137–166.

Bodi Zsuzsanna, Garatea Jokin, Garcia Robles Ana, Schuurman Dimitri (2015) "Living Lab services for business support and internationalisation" ENoLL publication

Coorevits, L, and D. Schuurman. (2014) "Hypothesis Driven Innovation: Lean, Live and Validate." *XXV ISPIM Innovation Conference*. 2014.

Campbell, D.T. & Stanley, J.C. (1966). *Experimental and quasi-experimental designs for research*. Chicago: Rand McNally College Pub. Co.

Eriksson, M., Niitamo, V. P., & Kulkki, S. (2005). State-of-the-art in utilizing Living Labs approach to user-centric ICT innovation-a European approach. Lulea: Center for Distance-spanning Technology. Lulea University of Technology Sweden: Lulea.

Frissen, V., & van Lieshout, M. (2006). Ict in everyday life. In *User Behavior and Technology Development* (pp. 253-262). Springer Netherlands.

Frissen, V. A. (2000). ICTs in the rush hour of life. *The Information Society*, 16(1), 65-75.

Niitamo, V. P., Kulkki, S., Eriksson, M., & Hribernik, K. A. (2006). State-of-the-art and good practice in the field of living labs. In Proceedings of the 12th International Conference on Concurrent Enterprising: Innovative Products and Services through Collaborative Networks. Italy: Milan (pp. 26-28).

Pierson, J., & Lievens, B. (2005). Configuring living labs for a 'thick' understanding of innovation. In Ethnographic Praxis in Industry Conference Proceedings (Vol. 2005, No. 1, pp. 114-127). Blackwell Publishing Ltd.

Rits, O., Schuurman, D., & Ballon, P. (2015). Exploring the Benefits of combining Business Modelling with Living Labs. Paper presented at ISPIM Conference 2015, Budapest, Hungary.

Sanders, E.B.-N. & Stappers, P.J., 2008. Co-creation and the new landscapes of design, *CoDesign: International Journal of CoCreation in Design and the Arts*, 4(1), 5-18.

Schuurman, D., De Moor, K., De Marez, L., & Evens, T. (2011). A Living Lab research approach for mobile TV. *Telematics and Informatics*, 28(4), 271-282.

Schuurman, D., Mahr, D., & De Marez, L. (2011). *User characteristics for customer involvement in innovation processes: deconstructing the Lead User-concept*. Paper presented at ISPIM XXII, Hamburg. <https://biblio.ugent.be/publication/1887184>

Schuurman, D., & De Marez, L. (2012). Structuring user involvement in panel-based Living Labs. *Technology Innovation Management Review*, 2(9). <http://timreview.ca/article/606>

Schuurman, D. (2015). *Bridging the gap between Open and User Innovation?: exploring the value of Living Labs as a means to structure user contribution and manage distributed innovation* (Doctoral dissertation, Ghent University).

Schuurman, D., De Marez, L., & Ballon, P. (2015). Exploring the Impact of Methodological Set-up on Innovation Contribution in Living Labs. Paper presented at ISPIM Conference 2015, Budapest, Hungary.

Ståhlbröst, A., & Bergvall-Kåreborn, B. (2008). FormIT—an approach to user involvement. European Living Labs-A new approach for human centric regional innovation, 63-76.

Thiesen Winthereik, J., Malmborg, L., & Andersen, T. (2009). Living Labs as a Methodological Approach to Universal Access in Senior Design. Universal Access in Human-Computer Interaction. Addressing Diversity, 174-183.

Westerlund, M., & Leminen, S. (2011). Managing the challenges of becoming an open innovation company: experiences from Living Labs. Technology Innovation Management Review, (October 2011).

# Annex 1: Living Lab template

## INTRODUCTION

Living Labs are user-centred, open ecosystems that enable business and societal innovation. In practice, living labs place the user at the centre of innovation and offer an open space for co-creation, testing and validation of products and services together with a variety of stakeholders: regional and national authorities, public agencies, users/citizens, citizen and user associations, universities, NGOs, other Living Labs, SMEs and entrepreneurs.

In the context of the Creative Ring Challenge (second phase) selected companies have the possibility to use Living Lab methodologies with the support of their hubs. This allows for instance (not available in all hubs):

- Providing an experimental entrepreneurial environment
- Facilitating the development of new products and services
- Developing application prototypes using open innovation
- Gathering early feedback from potential end users
- International business development
- Incubation services providing infrastructure and tools to develop ideas
- Organising workshops to design new business models
- Collecting data and analysing it

All applicants are asked to submit a Living Lab milestone describing how they want Living Lab validation to be organised by June 20<sup>th</sup>.

Read more about Living Lab services for SMEs [here](#).

## GUIDELINES

- Applicants are asked to fill out this form and explain how they want to use Living Lab methodologies in the final development of their product/service.
- All main sections must be addressed. Keep it short and to-the-point.
- International collaboration, trials and/or validation are strongly encouraged. Check your idea's feasibility with your hub
- Applicants can contact their hub's team if some clarifications are needed.
- Local meetings will be organised by hubs to help companies fill out this form
- Local hubs will support finalists of the second phase of the Creative Ring challenge to deliver this Living Lab validation plan (2 finalists per hub).

**1. Innovation process *(multiple answers possible)***

In which step/s of the innovation process do you want to make use of Living Lab validation?

- Ideation
- Planning
- Concept design
- Prototyping
- Production
- Commercialisation
- Other *(please specify)*

**2. Living Lab validation**

Explain what main research questions or issues you want to investigate through the Living Lab validation. Try to link these to target user groups that should be part of the validation in a real-life test environment.

**3. Measures to involve users**

Describe what kind of methods or tools you think should be used to involve end-users in Living Lab validation.

**4. Stakeholders to be involved**

List/Shortly describe your Living Lab validation's most important "actors" that also need to be involved during your Living Lab validation activities besides the different user groups described under point 2 (e.g. other companies, local government, associations, museums, schools, etc).

**5. Cross-border collaboration**

*(If applies)* Explain why cross-border validation is important for your product/service. How do you expect the different target markets to differ? What type of info do you expect from this cross-border collaboration?

## Annex 2: An introduction to Living Labs for CRC companies

Living Labs - quite a catchy term don't you think? Have you heard about them previously?

Do you have a vague idea but it's hard to be concrete about the concept?

Don't worry, it's normal!



*These notions are all connected to the term Living Lab.*

Our definition:

The Living Lab is a real-life test and **experimentation** environment where **users** and **producers co-create innovation** in a trusted open

ecosystem that enables business and societal innovation. Living Labbing is a process involving users in the innovation process to develop a product/service closer to their needs and expectations. It is an opportunity for companies to assess usefulness of their business idea, products, services, business model. Different methodologies and exercises are used to make this happen. Within CreatiFI we focus on Living Lab services for SMEs.

To give a few examples:

What are the areas where Living Labs are present?

The list is long, it includes mainly all the areas where innovation and development are present and active, example domains are: Health, Design, Creativity, ICT, Education, Smart Cities, Research, Environment, Green Energy & Low Carbon, Future Internet, Big Data, Fashion, Agriculture etc. So no matter in which area you work, Living Lab methodologies can help you improve your business activities.

How can you imagine, or where do you find the Living Labs?

Another good question! You find Living Labs all over in Europe, and your CreatiFI hub is either a Living Lab or is in touch with a local Living Lab.

Although Living Labs need a physical building to run activities, it is not only about that. Living Labbing is an innovation process involving users that can happen in different places depending on project goals and target groups: buildings, on-street, in a Lab, at users' home, through mobile applications and more.

### **What kind of services do Living Labs offer?**

The following listed services are only given as indicative. Living Lab services vary on a case-by-case basis.

- Providing experimental (entrepreneurial) environment
- Facilitating the development of new products and services
- Developing application prototypes using open innovation



- Showcasing newly developed products and services
- Gathering early feedback from potential end users
- Identification of target groups
- Incubation services providing infrastructure and tools to develop ideas
- Organizing workshops to design new business models
- Collecting data and analyzing it
- Consulting services for business development and commercialization

### **Are you a visual person?**

Have a look at these videos to gain a better idea about specific Living Lab activities:

- iMinds Living Labs: <http://bit.ly/1UcX0vN>
- Helsinki Living Lab project: <http://bit.ly/1szFqsy>
- Basaksehir Living Lab: <http://bit.ly/1OMHtyn>
- Health: Careville Limburg: Moving Care (in Dutch with English subtitles): <http://bit.ly/1YYtw6a>
- Smart Cities and Big Data: Eindhoven Living Lab Stratumseind 2.0 project: <http://bit.ly/25lhQBM>
- Environment: CRC for Low Carbon Living Lab project with participation of Adelaide Living Lab: <http://bit.ly/1s9curC>
- ICT: Guadalinfo Living Lab. A trip from the rural sphere to the global village (Spanish): <http://bit.ly/25lhECB>