

Methodological framework for CCLabs

DELIVERABLE: 3.1.1.

*Project "THE4BEES
– Transnational
Holistic Ecosystem
4 Better Energy
Efficiency Through
Social Innovation"*

FINAL VERSION

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INTRODUCTION

THE4BEES project builds on the hypothesis: Energy is consumed by people rather than by buildings. To approach this hypothesis, the project will focus on behavioural change of users in public buildings. It will be based on an inclusive collaborative approach traditionally addressed as open innovation. More specifically it will introduce Co-creation labs, a form of labs evolving from the Living Labs methodology. In the existing literature the term Co-creation lab is not yet in place as a specific method. Instead there exist vast theory on living labs and co-creation techniques, but not on “Co-creation labs”. Co-creation labs term, is usually used as an adjective to the specific open innovation place, usually run by a specific institution - for example “BMW Group Co-Creation Lab”. Within THE4BEES project the “co-creation labs” term will be used as a place, where co-creation will be implemented. Co-creation will follow general method (PLEASS method) and will be more specified in each region’s CCLab plans – served as an action plans. Co-creation labs should therefore be understood as an open-innovation arena, where inclusive activities from all technical work packages will take place.

Co-creation labs (CCLabs) will be established in each of 7 pilot regions:

- Piedmont, Alpine Huts and Lodges in Susa/Chisone Valleys, Managers/Tourists/Students
- Lombardy, Social Houses in Sondrio, Tenants/Building Managers
- Rhone-Alpes, High Schools, Teachers/Students
- Salzburg, High Schools, Teachers/Students
- Savinjska, Saleska and Koroska, High School in Velenje, Teachers/Students
- Fribourg, BlueFactory Co-working space, startupper/researchers
- Baden-Wuerttemberg, Factories in BWCON cluster, Managers/Employees.

CCLabs should be understood as an organizational form using the same principles and building upon the same methodological guidelines, but they will differ one from another due to the different content and stakeholder reality, as well as the different groups they are addressing.

The proposed methodological guidelines will help the CCLabs to prepare their individual Action plan (CCLabs Plan D.3.1.2), where each co-creation reality will be addressed more specifically. The Action plans will serve as roadmaps for working with target groups and achieve project results.



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PART 1: INTRODUCING OPEN INNOVATION & LIVING LABS

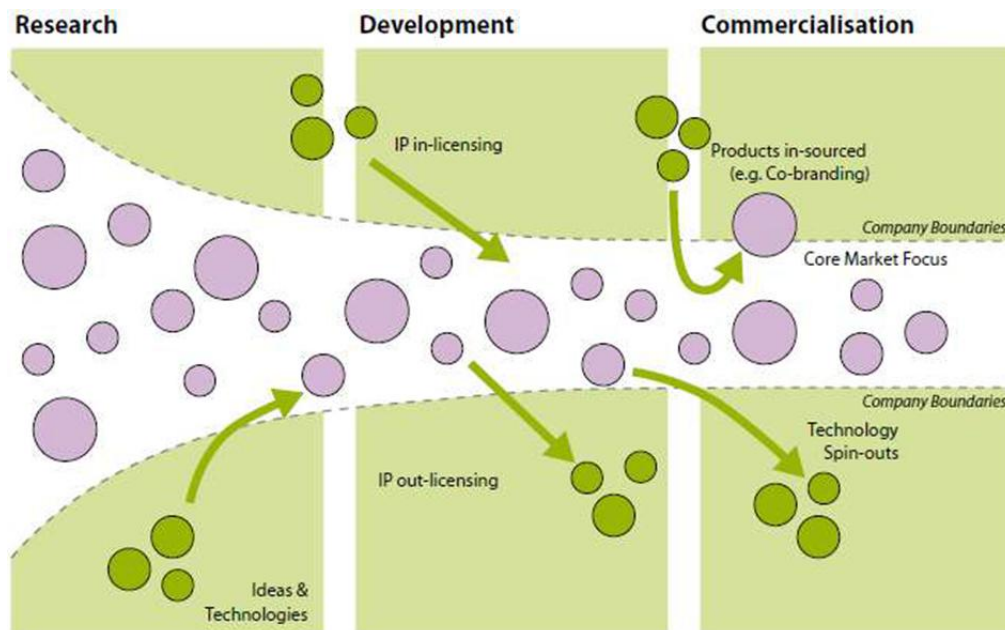
OPEN INNOVATION & LIVING LAB TERMINOLOGY FRAMEWORK SUBHEADINGS

A • OPEN VS. CLOSE INNOVATION

In 2001 Henry Chesbrough defined Open Innovation (OI) as the use of purposive inflows and outflows of knowledge to accelerate internal innovation, and expand the markets for external use of innovation, respectively.

With the introduction of OI, company boundaries become 'permeable', enabling the matching and integration of resources between the company and external collaborators. In the 'closed' innovation model, companies innovate on internal resources alone.

Figure 1 Open innovation



Source: <http://www.specialchem.com/open-innovation/introduction.aspx>

OI is characterized by the involvement of all company functions, at different stages of the innovation process, not just R&D. "The funnel" is a common representation of the Open Innovation process. Ideas are investigated at the research stage and the best and most promising of these make it to development and commercialization phases, whereas the less promising are dropped. In traditional



closed innovation process all the invention, research and development is kept within the company until the end product is launched and this is the key difference with open innovation process.

With OI the company can make use of external competencies (e.g. technology) and even all other organizations to spin out byproducts from its innovations.

The diagram shows a lot of activity (the mauve circles) going on within the company at the research stage. There are also ideas and technologies developed outside, either collaboratively or perhaps bought in (green circles). At the development phase, as research findings are narrowed down to viable projects, it may also be advantageous to invest in externally developed innovation in the form of intellectual property (IP) licenses for certain technologies, to advance these projects.

Meanwhile IP licenses that have merged from the company's own research might be sold to other developers, either because they are of no strategic relevance to company's own business, or because the company has no capacity or expertise to develop them itself. Alternatively, the company might see opportunity to create spin-out companies to take on some of its core projects.

At the point of commercialization there will be core products that may have come through an entirely internal route from research to realization, or with a variety of inputs from outside. At this stage, the OI company could still choose to buy in market - ready products from outside, for example in cobranding exercise, where it could use its established brand profile to sell a new product from another company that currently has no presence in the relevant market¹.

Under the concept of innovation that prevailed during most of the 20th century, companies attained competitive advantage by funding large research laboratories that developed technologies that formed the basis of new products that commanded high profit margins that then could be plowed back into research.

According to Henry Chesbrough, the closed innovation paradigm has eroded due to the following factors:

- Increased mobility of skilled workers
- Expansion of venture capital
- External options for unused technologies
- Increased availability of highly-capable outsourcing partners

The table below further illustrates the differences between closed and Open Innovation principles:

¹ Source of the text: <http://www.specialchem.com/open-innovation/introduction.aspx>

Table 1: Closed vs. Open Innovation Principles

CLOSED INNOVATION PRINCIPLES	OPEN INNOVATION PRINCIPLES
Most of the smart people in our field work for us	Not all the smart people work for us, so we must find and tap into the knowledge and expertise of bright individuals outside our company
To profit from R&D, we must discover, develop and ship ourselves	External R&D can create significant value; internal R&D is needed to claim some portion of that value
If we discover it, we will get it to market first	We don't have to originate the research in order to profit from it
If we are the 1st to commercialize we will win	Building a better business model is better than getting to market first
If we create the most and the best ideas in the industry, we will win	If we make the best use of internal and external ideas, we will win

Source: <http://www.specialchem.com/open-innovation/introduction.aspx>

B • OPEN INNOVATION INTERMEDIARIES²

The term 'innovation intermediary' refers to different kinds of agents performing a variety of tasks within the innovation process. Intermediaries are bridging structural disconnected knowledge pools caused by the lack of diversity within a firm. The intermediaries are actors specialized in the articulation and selection of new technology options; in scanning and locating of sources of knowledge; in building linkages between external knowledge providers; and in developing and implementing business and innovation strategies.

Why the collaboration with intermediaries is important for micro, small and medium sized enterprises? SMEs usually are limited in their capacity to scan the available knowledge and thus are restricted in filtering the relevant information. Access to an intermediary service has therefore the potential to compensate that disadvantage because mediating agencies possess a well-connected network of different knowledge sources. Intermediaries take over the filtering job and select the required information.

² Source of the text: <http://www.specialchem.com/open-innovation/introduction.aspx>

But also for large enterprises those mediators can provide value added service. Big companies often have various stakeholder groups, which differ in their size and strength of ties to the company. For example the group of users or consumers is broad and heterogeneous. They are characterized by a rather weak connection to the manufacturer, even though they are an important group to integrate in the innovation process. Intermediaries running platforms for consumers of certain products can strengthen this loose connection. They are able to transfer users generated content, which is relevant to the company for innovating. Thus, large enterprises take advantage of the independent status of intermediaries to receive precise and process relevant knowledge.

In the end, collaborating with an intermediary can decrease the time and costs of developing a new technology. Engaging the additional capabilities in knowledge generation and acquisition brought by intermediaries accelerates the new product development process. Intermediaries can provide a more efficient and effective search, resulting from their position in the „middle“. For companies, this can result in a quality improvement of acquired new knowledge. They can access larger talent pools with special intellectual properties and wider experiences. Simultaneously, organizations enhance their own innovative capacity.

Intermediaries as external knowledge service providers can supplement limited inhouse capacity for product innovation. Organizations also indirectly profit from the intermediaries' economies of scale and scope. Since knowledge acquisition and generation are the intermediaries' core competences, they offer operational best practice that might be difficult and time consuming to develop internally.

Furthermore, organizations have the option to benefit from the intermediaries' synergies they achieve by using their network for different innovation problems. Besides possible positive effects of an intermediary engagement, the issue of trust is central for a successful and beneficial cooperation between an organization and an intermediary. The general tendency towards fewer contacts in the physical environment brought by new information and communication technologies specifically elevates the importance of the intermediary's function in providing such trust.

Open Innovation and Living Labs are such intermediaries that contribute to the development of SMEs by using open innovation approach.

C • OPEN INNOVATION & LIVING LAB APPROACH³

Today's organizations need a constant flow of novel ideas while competing through emergent technologies.

A growing number of companies pay close attention to users as a source of valuable feedback and relevant use experiences. Companies in all industries agree that integrating users in the innovation process – to learn from and with them – is crucial. Moreover, one of the most important recent trends is the progressive inclusion of users in firms' processes where value is co-created. Co-creation with users helps firms better address their customers' latent needs. It reduces market risk in the launch of new products and services, and it improves return on investment and time to market. Firms involve users in the coproduction of brands, experiences, design, marketing strategies, and products or services.

³ Source of the text: Westerlund and Leminen in 2011

The increasingly fashionable concept of “open innovation” drives user involvement. It provides an interesting alternative to conventional in-house development and includes various possibilities, such as open sourcing and crowdsourcing.

One particularly interesting form of open innovation is the Living Labs approach, where technology is developed and tested in a physical or virtual real-life context, and users are important informants and co-creators in the tests (Kusiak, 2007).

The Living Labs approach is also attractive for traditional industries, because it extends the conventional innovation processes rather than reinvents them. Companies, on average, have little experience in open innovation, and transforming from an in-house innovator into an open innovation company is especially difficult for firms in traditional industries. Existing academic studies (e.g., Almirall and Casadesus-Masanell, 2010) can offer only limited insight; they predominantly consider firm’s innovation development options as either closed or open without indicating what is needed for a firm to become an open innovator.

Many companies no longer attempt to grasp the details of customer needs and use experiences. They reassign the design aspect of product development to external sources of ideas, such as their customers, who can help with innovation work and create value (Edvarsson et al., 2010). Seeking to understand user needs is expensive and labour intensive, but customer insight speeds up the development processes of products and services and lowers the cost. Zaltmann (2003) argues that firms increasingly recognize the need for integrating users as co-developers in R&D activities, because at least 80% of new products and services fail once they are launched into the market. With co-development, the result is more innovative and better fits with market needs.

The most common means of integrating users into development work involves collecting feedback on a company’s products and services. However, users are now so intimately involved in the development processes that they have become co-creators of value and the innovation is user-driven.

To co-create value, the firm, its customers, and its partners must reconcile their objectives, define the role and effort required from each party, and agree on an equitable division of the returns (Chesbrough, 2003). Shifting the focus from ownership to openness requires a total reconsideration of the processes that underlie value creation and capture (Chesbrough and Appleyard, 2007).

Customer involvement in innovation development also has challenges. Experiments show that ideas from users are often more original and valuable, but ideas from in-house developers are more realizable (Edvarsson et al., 2010).

Therefore, managers need to consider the type and organization of R&D to be performed, including a choice about the exposure of the innovation work to knowledge from outside the firm. Open innovation calls for a specific organizational mindset, which requires the creation and learning of a new operational culture, including open organization, processes, and products and services.

Openness is difficult for firms where conventional thinking is the norm, because it means the firm must consider the inputs of others and cannot exert exclusive rights over the resultant innovation.



D • THE LIVING LAB AS A FORM OF OPEN INNOVATION

A firm can become an open innovator in different ways. LIVING LABS provide an option for firms in industries, where the cognitive distinction between closed and open innovation is particularly strong. LIVING LABS are co-creation ecosystems for human-centric research and innovation. Ballon and colleagues (2005) define Living Labs as experimentation environments; they are physical regions or virtual realities where stakeholders form quadruple helix or public-private-people partnerships (4Ps) of firms, public agencies, universities, institutes, and users all collaborating for creation, prototyping, validating, and testing of new technologies, services, products and systems in real-life contexts.

Living Labs are different from test beds for controlled testing of a technology in a laboratory environment and field trials for testing in a limited, but still real-life, environment. Stewart (2007) makes a distinction between diverse types of living Labs. They include:

- narrow but sizable communities of expert users;
- whole bounded populations;
- Living Labs for technical service development; and
- Living Labs for non-technical research using a service platform.

All these types have something in common: they employ an array of participants with different rationale for joining the innovation development. Participants must reconcile their objectives and define both the role and effort required from each party and an equitable division of the returns to co-create value. Many Living Labs also join regional or global networks of living labs, such as the geographically distributed European Network of Living Labs (<http://www.openlivinglabs.eu>). A living lab provides a concrete setting, unlike the other forms of open and collaborative innovation (Schaffers et al., 2007).

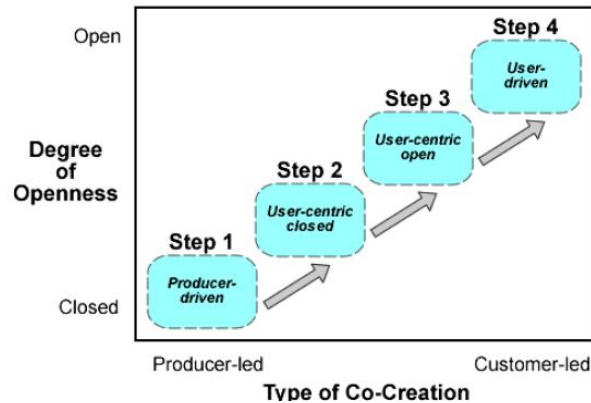
The main activities of LLs:

1. Co-creation: co-design by users and producers; utilizers and enablers are also involved.
2. Exploration: discovering emerging usages, behaviors, and market opportunities.
3. Experimentation: implementing live scenarios within communities of users.
4. Evaluation: assessment of concepts, products, and services according to socio-ergonomic, socio-cognitive, and socio-economic criteria.

Living Labs are platforms that bring together all the relevant parties for innovation co-creation. They open up the possibility to generate a wide and extensive spectrum of product and service portfolios (De Ryuter et al., 2007) and connect producers and users with utilizers and enablers. The utilizer is a non-producer firm that seeks efficiency gains, supplements to resource bottlenecks, and knowledge from the living lab. It may boost its innovation process through the Living Lab network or even outsource its innovation capacity and knowledge to boost the living lab network.

Enablers are companies or organizations that provide supportive technology, virtual or physical space, and other necessary resources to the use of participants.

Figure 2: Co-creation types



Source: Westerlund and Leminen, 2011

When a conventional in-house developer decides to become an Open Innovation company, they will likely encounter four steps of development:

- I. producer-driven;
- II. user-centric closed;
- III. user-centric open; and
- IV. user-driven, as illustrated in Figure above.

These steps represent increasing degrees of user involvement. Firms are not required to progress through these steps sequentially, although that is the usual pattern. Furthermore, a firm can start or stop at any step. Previous research shows that it may take a long time for a firm to become an open innovator and this change may bring about many challenges (Chiaroni et al., 2011).

Managers need to establish a new organizational culture and mindset to support opening up their innovation processes.

Step 1: Producer-driven. In the first step, development work is led by the producer and is closed. This step is characterized by technology push, since the innovation originates from the producer's ideas and patents. The firm's policy to maintain knowledge and intellectual property rights within the company guides the development work. The staff has little communication or interaction with users; it considers them merely as buyers whose role is to purchase and consume the firm's products and services. The contacts in customer firms are not the actual users of the product or service. Users' knowledge and use experiences, as well as potential development ideas, fail to flow into the producer organization due to minimal interaction with customers.

Because of the restrictive producer-driven culture, the same may apply even if the company collects feedback by conducting market research, customer surveys, or interviews with the customers, because the firm may not apply this information to its development work. This lack of relevant information in development work is somewhat paradoxical, as even producer-driven innovators recognize the value and benefits of understanding users.



Companies operating in the producer-driven step often use intermediaries such as consultants to obtain customer feedback and development ideas. Because companies' co-creation with users is almost non-existent, intermediaries act as agents between the developer firm and the users. Agents collect users' needs and use experiences, then disseminate them to the producer's R&D department. Our data suggests that the reason for using agents is their ease of use from the producer's perspective. In addition, companies lack the skills, experience, or resources required to interact with their customers in a way that would benefit the parties involved.

Step 2: User-centric closed. In the second step, development work is still led by the producer and is closed, but the role of users is more visible than in the first step. The producer and its partners collect ideas from users through customer surveys and user studies, which often take place in the company's premises. These studies are quite comprehensive and systematically target specific users. Some users are involved in early stages of the development process, whereas others are included in later stages. Producers use pilot testing for new products and services; pilot users include customers as well as the firm's employees, family members, and employees of the firm's partners. Some business units within the company have ample resources and experience of user involvement while others have none. R&D management does not have established general procedures for user involvement, and organizational culture fails to support openness in the innovation process. Therefore, the producer expends a lot of effort protecting its intellectual property rights and maintaining knowledge and information strictly inside the organization. User involvement is not the firm's primary objective and it does not have related organization-wide practices.

Step 3: User-centric open. In the third step, development work is somewhat led by customers, but they are disposable in the sense that a given individual is involved in the process only once. This step is a major move towards the open innovation model in terms of increased openness. Companies consider users, who are both the firm's current and potential clientele, as an important source of information. Relevant procedures required for user involvement are widespread within the producer organization and user involvement is among the firm's daily routines. Characteristically, the producer understands the value of its users' knowledge and its previous experiences of value co-creation with customers and users are mainly positive.

Nevertheless, the company only involves users in some phases of the innovation process. It selects them purposely for a certain phase on the basis of its needs; the same users do not participate throughout the product or service innovation lifecycle. The chosen users will be excluded from the subsequent phases after it is accomplished, because they quickly learn how to use the newly-developed service or process. Learning discourages them giving critical feedback and suggestions for further improvements. Therefore, finding more and more new pilot users becomes a challenge for the company.

Step 4: User-driven. In the fourth step, development work is led by customers and is open. In this step, a company enters into intense, long-term collaboration with its users and the majority of the firm's innovation activity is grounded on user involvement. Users' latent needs and motives for collaboration in innovation development rise up and become explicable through their efforts.

The firm has well-established procedures for user involvement, and value co-creation with its current or potential customers takes place across the organization. The company's innovation development practices evolve rapidly. Value co-creation is achieved through continuous trial and error, leading to new products and services, concepts, or operational improvements. The producer

often tries new ways of operating and if the new methods do not yield improvements, it tries something else. User-driven development work is truly challenging, because the company entirely opens up its processes and procedures. Organized innovation development activities – which targeted specific users in the previous steps – are now open to any interested parties.

Still, operation remains largely unorganized for an undisclosed time; it amends and adapts in time by the interests of the participants.

Managing increased openness

Conventional R&D is grounded in projects that bring about new products and services, beneficial change, or added value. Meredith and Mantel (1995) point out that a project targets a well defined set of desired end results and a single project itself is non-recurrent. A project is a temporary endeavor, having a defined beginning and end, and it is undertaken to meet unique goals and objectives. The fundamentals of project management are based on attaining preset end results and management reaches these goals by using diverse project management tools, methods, and models (Eskerod and Riis, 2009). Companies can decrease perceived uncertainty by running projects through sequential design phases or subprojects, as in the waterfall model (http://wikipedia.org/wiki/Waterfall_model).

Iller et al. (2008) show that innovation co-creation can be producer driven, customer-driven, or in equilibrium. When employing the open innovation model, user input steers the direction of innovation creation processes heavily (Chesbrough, 2003). Open innovation is based on value co-creation with users and the end result of the development work is unforeseeable beforehand, unlike in conventional development projects. Traditional project management methods, where fundamental assumptions of the management are based on a clear measurable goal of a project (Maylor et al., 2008), fail to apply in the open innovation model.

Hacievliyagil and Auger (2010) stress the impact of Open Innovation on the management of R&D. The data on Living Labs shows that conventional project-based innovation development and the open innovation model differ in many respects.

These differences are highly relevant for the firm's management in its attempt to become an open innovation company. Management needs to pay special attention to these differences in order to stress the right aspects during the transformation.

The main differences include:

1. Objective. Traditional innovation projects aim at firmly pre-defined goals. Managers can evaluate the success of the project by comparing the realized outcomes with the original project plan. The data indicates that the Open Innovation model is different. Living Labs target undefined objectives, albeit they introduce loose guidelines to initiate and promote collaboration. The objectives can change many times, as they depend on the interaction and collaboration among participants of the Living Lab. The results may comprise several different outcomes, which were not targeted in the beginning of the development work. The purpose of collaboration is producing products and services or solutions that have better market fit.

2. Control points. Conventional projects apply preset control points for amendments. Project management control points are usually located at the completion of defined tasks within the overall project plan. Because this plan describes the tasks, it heavily limits and guides the timing of

changes in the goals and tasks or even the termination of project. Open innovation allows for changes to be made any time during the co-development work. For example, a Living Lab has few strictly set control points; it is self-organizing and the goals of innovation development change by the users' activity and involvement.

3. Project manager's role. The project manager's role differs clearly between conventional projects and open innovation. In the conventional model, the project manager manages and controls the resources and organizes schedules according to the project plan. Participants of a Living Lab cannot be managed as though they are personnel, because users join the innovation co-creation work on a voluntary basis. Their participation is often compelled by hedonic motives instead of economic ones. For example, many users do not expect any monetary rewards because they value the opportunity to participate and learn about the development process. Often, users consider that a token gift or formal recognition of their efforts is sufficient reward. Managers need to learn how to motivate users and other participants in Living Labs, which is challenging and resource intensive.

4. User's role. A conventional innovation development project deems users as objects of study. They join the project in diverse roles at any time during the product development lifecycle, whether the project is an early trend-identification phase or about to launch. Sometimes, end users test and verify products and services even after the launch. Open Innovation is different; users are equal to other participants in Living Labs, as they are genuine co-creators of value. They participate in various intensive analyses concerning their everyday life, as well as in planning and doing the innovation development work.

5. Resources. Innovation resources in traditional projects include those of the firm and its partners, and companies spend these resources on many activities relating to a project plan. While projects emphasize the capability to utilize extant resources timely and efficiently, a Living Lab requires new resources and capabilities that are obtained or created by integrating the participants' knowledge. Because the goals change radically over time, co-creation in open innovation may necessitate resources that were not anticipated in the beginning. User involvement is resource intensive and a key managerial challenge is to facilitate user communities to generate sufficient support and resources.

6. Management tools. When managing conventional projects, companies can choose from a large assortment of extant methods and tools, such as the stage-gate model or project management software like Microsoft Project, which help managers control and monitor the progress of a project efficiently. Open innovation communities make collective decisions about future directions, and control and coordination is usually self-organized.

Therefore, companies running or participating in running Living Labs need to use diverse facilitative methods, work group tools, and relevant groupware.



E • OPEN INNOVATION LAB AND LIVING LAB

The use of the word phrase “Open Innovation” within the project is understood as: “Open Innovation is the use of purposive inflows and outflows of knowledge to accelerate internal innovation, and expand the markets for external use of innovation, respectively. [This paradigm] assumes that firms can and should use external ideas as well as internal ideas, and internal and external paths to market, as they look to advance their technology.”

Henry Chesbrough, Open Innovation: Researching a New Paradigm

“...Companies can no longer keep their own innovations secret unto themselves; ... the key to success is creating, in effect, an open platform around your innovations so your customers, your employees and even your competitors can build upon it, because only by that building will you create an ongoing, evolving community of users, doers and creators.”

One of the greatest challenges today is the definition of Living Labs because of their variety and the continuous evolution of the related concepts and methods. We define Living Labs as physical regions or virtual realities, or interaction spaces, in which stakeholders form public- private-people partnerships (4Ps) of companies, public agencies, universities, users, and other stakeholders, all collaborating for creation, prototyping, validating, and testing of new technologies, services, products, and systems in real-life contexts. They are used for the development of communities for the use of innovation.

A Living Lab is not a testbed. A Living Lab turns users from observed subjects to active co-creators of value and explorers of emerging ideas, breakthrough scenarios, and innovative concepts. A Living Lab is an experiential environment where users are immersed in a creative social space for designing and experiencing their own future.

Policy makers and citizens can use Living Labs to design, explore, experience, and refine new policies and regulations in real-life scenarios before they are implemented.

The use of the word phrase “Open Innovation Lab”

An Open Innovation Lab is a working group that brings together regional representatives from SMEs & R&TD organizations. They have to be locally based with transnational impacts (e.g. collaboration can be established between different OI labs).

The Open Innovation Lab will let work together representatives from the following communities:

- A) Enterprises (SMEs)
- B) Research and Technology Center
- C) Policy Authorities (local and/or regional ones)
- D) Innovation organization (e.g. cluster managers from Regional Development Agencies)

To maintain constancy it is suggested to win a long term commitment from the members (at least from some categories) in order to count on a fixed list of players for the whole duration of the Lab. In particular, the representative of the categories C and D (selected on the basis of the domain defined

by the Lab) should follow the processes of the working groups from the beginning to the end. On the other hand, the representative of SMEs and R&TD might change during the Open Innovation Lab, based on the sectors involved and solutions to be addressed.

To facilitate the success of the labs' actions, it is recommended that some members have had previous experience on Open Innovation methods, models and process.



PART 2: INTRODUCING USER-DRIVEN AND CO-CREATION TECHNIQUES

USER DRIVEN ENVIRONMENT

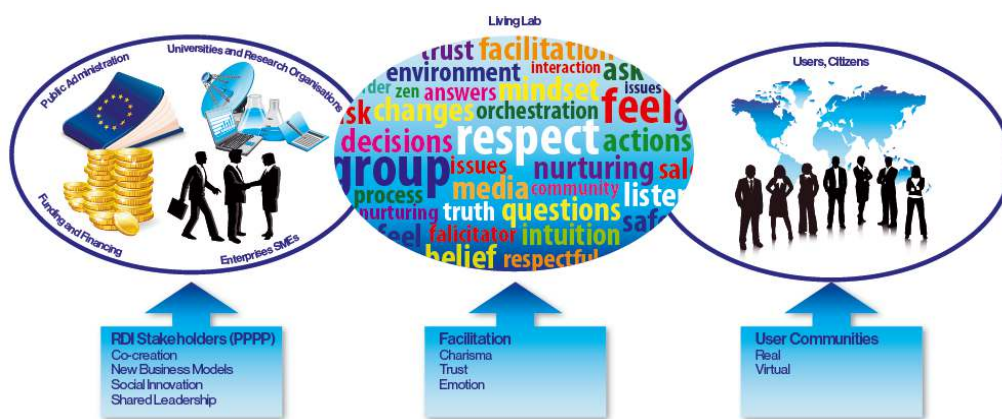
A • LIVING LAB: A USER-DRIVEN ENVIRONMENT FOR OPEN INNOVATION

Living Labs are open innovation environments in real-life settings, in which user-driven innovation is fully integrated within the co-creation process of new services, products and societal infrastructures. In recent years, Living Labs have become a powerful open innovation instrument for effectively involving the user at all stages of the research, development and innovation process, thereby contributing to European competitiveness and growth.

Living Lab philosophy is action-oriented while organic and open, using the pilot method to achieve a stable, sustainable configuration!

With Living Lab community support for the two processes involved in Living Lab innovation is provided: the process of developing products and services with end-users and the management and (international) collaboration process.

Figure 3: Living Lab Ecosystem⁴



Living Lab

Ecosystem for experimentation and co-creation with real users in real life environments, where the end users together with researchers, firms and public institutions jointly explore, design and validate new and innovative products, services, solutions and business models.

⁴ www.centralab.eu

A Living Lab is a real-life test and experimentation environment where users and producers co-create innovations. Living Labs have been characterised by the European Commission as **Public-Private-People Partnerships (PPPP)** for user-driven open innovation.

User-driven open innovation ecosystems is based on business – citizens – government partnerships which enable users to take part an active part in:

- Bringing users early into the co-creation process
- Bridging the innovation gap between technology development and the uptake of new products and services
- Allowing for early assessment of the socio-economic implications of new technological solutions

A Living Lab employs **four main activities**:

- Co-Creation: co-design by users and producers
- Exploration: discovering emerging usages, behaviours and market opportunities
- Experimentation: implementing live scenarios within communities of users
- Evaluation: assessment of concepts, products and services according to socio-ergonomic, socio-cognitive and socio-economic criteria.

The Living Lab approach consists of **three main axes**:

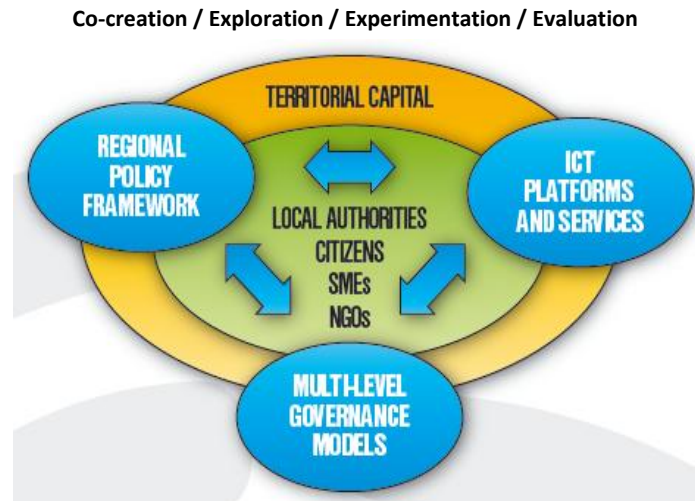
- Examine the regional policy framework
- Identify the most appropriate ICT platforms and services through PILOT projects
- Develop multi-level governance models for a permanent networked structure

All of this happens in the project with the involvement of local authorities, citizens, SMEs, NGOs etc. and draws on the specific territorial capital of each region.

Some regions already recognised the potential of LL approaches and started to make strategic steps by integration of this approach it their regional/local levels.



Figure 4: Living Lab main activities and axes⁵



B • METHODS AND TOOLS OF INVOLVING USERS

User-driven innovation has become a key competitive factor for firms to identify users' needs and to incorporate this knowledge in products and services. By involving users in innovation and product development processes the likelihood of success and users' acceptance increase; moreover, looking for needs rather than for specific solutions can help companies keeping more doors open, which, in turn, stimulates creativity and contribute to fulfil more effectively the real market requirements.

Questions: How can we approach in order to engage people in an Open Innovation process, how can we mobilize users? How can an innovative company active in R&D get important feedback on its own prototype from a sample of the potential market?

There are, **several methods and tools** that can be used when involving users in an Open Innovation process:

- Focus-group interviews as data-collection method
- Brainstorming and open source communities
- On-line survey tools, web 2.0
- Prototype test, Usability evaluations
- Workshops.

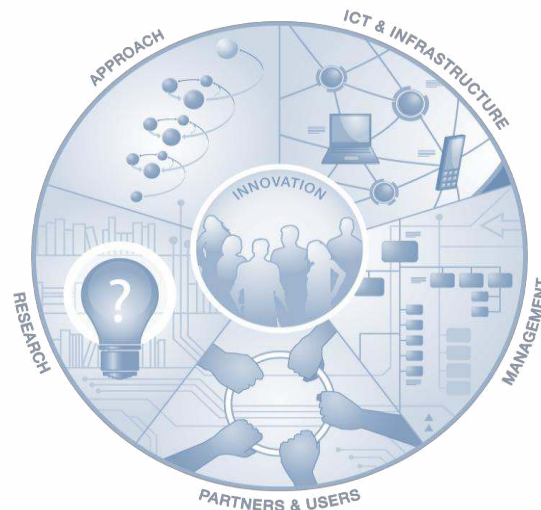
⁵ www.centralab.eu

C • KEY PRINCIPLES OF USER INVOLVEMENT

The key principles that are considered as crucial in Living Lab operations are: Continuity, Openness, Realism, Empowerment of Users, and Spontaneity, and these are described as follows:

- **Continuity:** this principle is important since good cross-border collaboration, the so-called PPPP (Public-Private-People Partnership), which strengthens creativity and innovation, builds on trust, which takes time to develop. In particular, if users feel that their opinions and needs are important and considered in the design of the innovative product or service, then the relationship established with the firms, SMEs and research institutes tends to be more trustworthy productive, and long-term oriented. Reflecting on openness also awakens questions about how the process must be designed to cope with all the input an open process might generate: a solution could be deploying an ICT infrastructure with a mobile platform and an online forum, freely accessible and always-on.
- **Openness:** the innovation process should be gathering of many perspectives and bringing enough power to achieve rapid progress is important. The open process also makes it possible to support the process of user-driven innovation, including users wherever and whoever they are. The open process is demonstrated by the continuous interactions among the involved stakeholders, with special attention to the users. This means that multiple stakeholders and perspectives should be one key characteristic of a Living Lab, and can be implemented with project-teams consisting of people from academia, private companies, public organisations, and potential end-user groups.
- **Realism:** to generate results that are valid for real markets, it is necessary to facilitate as realistic use situations and behaviour as possible. This principle also is relevant since focusing on real users, in real-life situations, is what distinguishes Living Labs from other kinds of Open Co-Creation environments.
- **Empowerment of users:** the engagement of users is fundamental in order to bring the innovation process in a desired direction based on human needs and desires. Living Labs efficiency is based on the creative power of user communities; hence, it becomes important to base innovations on people needs and desires, as well as to motivate and empower the users to engage in these processes. Needs and suggestions, priorities and requirements, collected through focus-group interviews, open source communities and prototype tests should be considered seriously and implemented as functions and features in the solution design.
- **Spontaneity:** in order to succeed with new innovations, it is important to inspire usage, meet personal desires, and both fit and contribute to societal and social needs. Here, it becomes important to have the ability to detect, aggregate, and analyse spontaneous users' reactions and ideas over time.

Figure 5: Key components of a Living Lab⁶



D • LIVING LAB METHODOLOGICAL PARADIGM

The Living Lab approach can be defined as a methodological paradigm that guides user driven development and integrates users' needs in the design of a new product, service, or innovative IT-system, by paying attention to the following aspects:

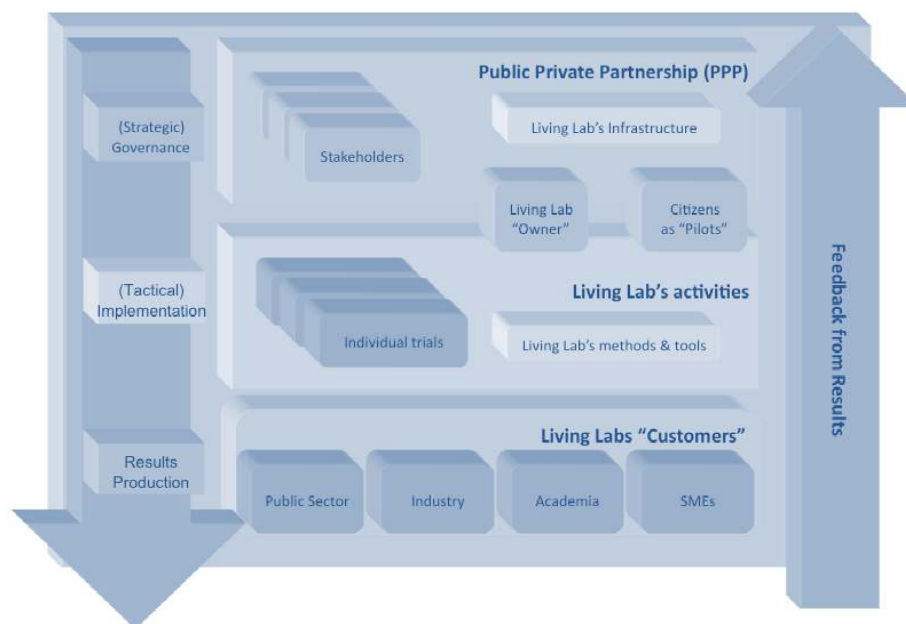
- Early and continuous participation among all project stakeholders (company, end-users, academies, research institutes, public administration, briefly the so-called PPPP);
- Aim for open inclusion of users, an open process and open results;
- Use data collection approaches that facilitate spontaneous reactions, i.e. open and qualitative method;
- Involve real users in real contexts with real systems;
- Involve different competencies to increase creative solutions;
- Design an iterative process;
- Gain insights into user characteristics;
- Focus on identifying strengths, opportunities and values;
- Prioritise needs in interaction with users;
- Translate user expressions into needs and technical requirements;
- Create an authentic use situation in the evaluation of the prototype.

⁶ Open Alps.2014

From a heuristic perspective, a multi-stakeholder platform is a more advanced metaphor than a network. Platforms suggest a form of institutionalization that networks do not have. In a typical network, problem-solving capacity is dispersed; while in a typical platform, it is governed and brought to a more advanced synthesis. Furthermore, an ICT infrastructure can be associated to the platform, providing efficient means to manage, store and analyse the production results. Based on the known evidence that most networks are often characterized by cooperation and coordination problems, which are caused by the lack of a dominant decision centre, network management can be a success if it promotes some minimally joint activities between actors. On the contrary, in multi-stakeholder platforms like Living Labs, the power is – at least ideally – dispersed in such a way that no single actor can dominate, nor is management responsibility or the accountability for results exclusive to any particular stakeholder.

Next figure exhibits the ‘typical’ appearance of a Living Lab’s PPPP environment as a three layered multi- stakeholder platform.

Figure 6: A Living Lab PPPP’s conceptual architecture⁷



On the top of everything lies the PPP (Public-Private Partnership) between local stakeholders, dealing with the strategic governance of user-driven, open innovation policy. One layer below there is the practical (and tactical) implementation of the trials, foreseeing a key role for the Living Lab’s ‘owner’ or ‘representative’ (the real or virtual organization appointed to act on behalf of the PPP) and for the people/citizens as ‘actors’ of the individual pilot (the missing “P” in the PPPP acronym). Finally, the third layer deals with the actual generation of (material and/or immaterial) results from the trials, going to the benefit of the Living Lab’s service ‘customers’ (e.g. SMEs or large enterprises wanting the pre-test the market feasibility of their engineered solutions). Depending on each trial’s

⁷ <http://www.openlivinglabs.eu/>

positioning along the product/service development chain, results can take the form of new or improved prototypes, products, services, and technologies, including (from a public authority's viewpoint) local innovation policies and strategies. An evaluative 'feedback loop' from this third layer to the PPP on the top is key to ensure not only the eventual replication of the trial at the same or another future stage, but also a collective, shared and transparent evaluation of the results obtained. This is another essential feature of the Living Labs approach, well in line with the principles of Open Innovation, but also a guarantee for taxpayer's money expenditure, provided that most stakeholders do belong to the public sector.

E • CO-CREATION ⁸

The modern concept of Co-Creation emerged from the business sector in the 1990's as a new form of engagement with customers. Instead of seeing customers as passive consumers, companies started inviting them to provide feedback, generate new ideas and actively participate in the development of products and solutions. All participants gained a greater sense of meaning and value from this process — customers felt more empowered and connected to products; businesses were better able to refine and test products and tap into new markets. Reaching out to groups that may not have expert knowledge on highly complex issues and including them in decision-making processes regardless is similar to recent approaches to scientific understanding, such as the post-normal science approach of Silvio Funtcovicz and Jerome Ravetz.

Co-Creation is a form of citizen engagement, but fundamentally differs from public consultation in a variety of ways. Rather than asking citizens to simply comment on predetermined initiatives, outcomes or campaigns, Co-Creative techniques view citizens as proactive agents, giving communities and individuals more direct involvement in defining their needs and priorities, collaboratively finding solutions, influencing decisions and achieving better outcomes. This hierarchy-flattening process involves a significant degree of trust and transparency between citizens and government officials.

Advantages of Co-Creation

Most cities are risk-averse; adopting some Co-Creative practices can cultivate and speed up innovation, while reducing risk. Tapping into the creative and intellectual skills of different stakeholder groups generates more ideas quickly and allows for the assessment and validation of ideas from a variety of perspectives. This can make cities far more nimble when it comes to addressing citizen needs in a cost-effective manner. The time invested in implementing Co-Creation processes can improve the quality of the results, reduce negative impacts of a project and prevent future conflicts by sharing responsibility around decisions and outcomes. Co-Creation also has the ability to create more equitable and inclusive decision-making processes, which build a stronger sense of consensus and ownership of outcomes across the community. Diversified engagement can help to balance any inequities that exist between races, classes and other groups. In this way, Co-Creation can help change institutions where some groups have disproportionate influence over decision-making. For communities and citizen organizations, Co-Creation can offer greater opportunities for citizen empowerment, allowing more opportunities for people to be heard, exercise

⁸ <https://leadingcities2014.files.wordpress.com/2014/02/co-creation-formatted-draft-6.pdf>

political rights and influence policy decisions. It may also empower citizens to organize themselves or seek new partnerships to solve everyday problems, breaking cycles of dependence. In this way, citizens can become more aware of and satisfied with the functioning of their local governments.

Characteristics of well-developed citizen engagement

Well-crafted and well-implemented citizen engagement processes share a number of common characteristics that have been documented in research over the past several decades:

- Public participation is based on the belief that those who are affected by a decision have a right to be involved in the decision-making process and that they may provide the best solutions.
- Public participation includes the promise that the public's contribution will influence the decision.
- Public participation promotes sustainable decisions by recognizing and communicating the needs and interests of all participants, including decision-makers.
- Public participation seeks out and facilitates the involvement of those potentially affected by or interested in a decision.
- Public participation seeks input from participants in designing how they participate.
- Public participation provides participants with the information they need to participate in a meaningful way.
- Public participation communicates to participants how their input affected the decision.

Co-Creative processes lead to increased social capital and collaboration between various stakeholders, allowing communities to foster consensus based on local knowledge and capacity. Fostering interdependence between community stakeholders improves the quality of social institutions and helps communities function more effectively. Digital Co-Creation tools can potentially lead to more robust data collection and analysis, quantitatively improving city government's ability to facilitate real-time data collection and analysis, categorization, and redistribution of information. Co-Created digital and non-digital tools already allow cities to tap into previously under-utilized resources such as citizens themselves moving about the streets with smart phones.



Challenges of Implementing Effective Co-Creation

Co-creation poses significant challenges in terms of the increased time and costs required to effectively engage stakeholder groups and integrate expert and informal knowledge. Time and Cost Co-Creation takes more time than typical citizen engagement processes, which can be challenging in the 'age of impatience'. A considerable amount of time and resources must be invested in designing a process that effectively engages multiple players and communicates consistently with them throughout the process. Each meeting or online engagement also requires people to make the time to participate in their busy lives; successful Co-Creation is highly dependent on the willingness of institutions and citizens to invest the time to be involved. It is sometimes a challenge to build engagement processes that involve a diverse group of people (academics, business people, non-profits, public servants, citizens) with different expectations regarding pace and style of work and timelines. A dialogue to set common expectations needs to occur at the beginning and some of the participants will have to adjust. For example, different industry cycles can affect the process i.e. a university might predominantly be involved during the typical school-year cycle while non-profits may be involved only when funding/operational budgets allow. Not all stakeholders or participants will come with built-in Co-Creation literacy. Time often needs to be invested in developing process literacy, a shared language and a co-designed process. Projects may also have various degrees of success in finding people who are skilled at collaborating, comfort with ambiguity and willingness to take risks. Lastly, Co-Creative processes are often more iterative in nature — this means that projects may start out with one set of goals but may have to pivot or shift as new information or circumstances occur. It might also mean starting with a core team and then adding participants as gaps are identified. These aspects can potentially add more time and cost to projects if not managed for and planned in advance.



METHODOLOGICAL TYPES OF CO-CREATIVE WORKSHOPS

The Co-Creation process must be implemented in the inclusive and participative environment. The best option to create this type of environment is face-to-face meetings and workshops. Below are presented 7 types of workshops that can be used in the co-creation process. The list is not definite, since there exists hundreds of different types of co-creation workshops, therefore the list is presenting just the most common types.

A • UNCONFERENCE (OBLIGATORY TO USE WITHIN THE PROJECT)⁹

The unconference creates space for peer-to-peer learning, collaboration and creativity. At the start, the whole group will gather together and be guided through creating an agenda using open space technology. The exact process is not important to understand in advance – the process will become clear as it happens. The important part is that all those gathered will have the opportunity to put conference sessions on the agenda. The premise behind the unconference idea is that, “the sum of the expertise of the people in the audience is greater than the sum of the expertise of the people on stage.” Unconferences are about empowering attendees to share their expertise. The reality of innovation is that we co-create it by feeding off and enabling each other.

The sessions convened will range from the formal to the informal:

- From the well thought out pre-prepared talk reflecting years of research and practice to the spur of the moment ‘new idea’ that would be fun to talk about.
- From the demonstration of a working tool to the whiteboarding of something completely new.

There are only two rules at an unconference, Kauffman says:

- **Nobody is giving a presentation** – unconferences are all about **conversations**;
- If a session doesn’t inspire attendees and they are not contributing, they should get up and find a different one. (It’s called the **Law of Two Feet**.)

There are several key points about an unconference:

- You do not need to do preparation in order to convene a session. If you get an idea the day of the event, call a session.
- There is no ‘right way’ to lead a session. However there is a bias towards interaction and discussion.
- Choose a format for your session will help you achieve your vision.

⁹ <http://unconference.net/unconferencing-how-to-prepare-to-attend-an-unconference/>

Following are a few ideas about different session types to get you thinking about possibilities.

Types of sessions...

- The longer formal presentation (this is tricky, because it's difficult to make a formal presentation interactive. But if you have a big, well-developed idea you can pull it off.)
- A short presentation to get things started (5-15 minutes of prepared material/comments by the session leader followed by an interactive discussion)
- Group discussion (Someone identifies a topic they are interested in, others come to join the conversation and an interesting discussion happens)
- My Big (or Little) Question (You have a question you want to know the answer to, and you think others in the group could help you answer it. This format could also just be the seed of a conversation).
- Show and tell (You have a cool project, a demo, or just something to show and let people play with that is the springboard for all the conversation in the session. Alternatively, you can invite others to bring their own items to show and tell, and everyone takes a turn sharing.)
- Learn how to do X (If you're inclined to teach, this can be simple and effective. Bring the equipment that you need, and have a plan that will let you teach five, ten, or 15 people how to do something all at the same time.)

Do take photos of different elements of your program so you can share them with others either at sessions you lead or in other sessions.

Advice about leading a session...

- If you convene a session, it is your responsibility to "hold the space" for your session. You hold the space by leading a discussion, by posting a "first question," or by sharing information about your program. Be the shepherd – stay visible, be as involved as necessary, be a beacon of sanity that guides the group.
- Ask for help holding the space if you need it. You might, for example, put a session on the board and know that you are so passionate about the topic that it would be better if someone else, someone more objective, facilitates the discussion. Choose someone from your team, or another participant who is interested in the topic.
- Do not assume people in the room know more, or less, than you do. You never know who is going to be interested in your session. You might want to start by asking people to hold up their hands if they have been involved with the topic for more than five years, for one to five years, or for one year or less.
- Do not be upset if only two people show up to your session. Those two people are the ones who share your interest.
- Do not feel that you have to "fill" up an hour of time. If what you have to say only takes 15 minutes and the group has finished interacting—then the session can end.
- Do not feel pressure to have everything take "only" an hour. If you start with a short presentation, and then a group conversation gets going, and your discussion needs to continue past an hour – find a way to make this happen. You might be able to keep talking for a while in



the room you are in, or move to another part of the conference area, or post “Part 2” on the agenda. At the start of the conference, we will discuss guidelines for how this can happen.

- Be Brave! Others are interested in making your session work!
- Do think about the ideas that you want to cover in your session, and how you want to cover them. But do not feel as though you need to prepare a great deal. (If you are over-prepared, your session might lose energy.)
- Experiment with the kind of sessions you lead. There is no such thing as “failure” in an unconference.

B • CODING DOJO¹⁰ (OBLIGATORY TO USE WITHIN THE PROJECT)

A Coding Dojo is a meeting organized around a programming challenge where people are encouraged to participate and share their coding skills with the audience while solving the problem. The main principles of the Coding Dojo are to create a **Safe Environment which is collaborative, inclusive, and non-competitive where people can be Continuously Learning**.

Some of the principles:

- Failure - it is OK to fail when learning something new;
- Redundancy – one can always gain new insights when tackling the same problem with different strategies;
- Baby Steps – each step towards the solution should be small enough so that everybody can comprehend and replicate it later.

There are some general rules that allow the Coding Dojo session to be productive and to flow. The meeting is held in a room with enough space for all the participants and usually requires only a projector and a computer or laptop. Having whiteboard space for sketching and design discussions is also valuable. The participants are encouraged to develop the solution using Test-Driven Development (TDD) and are free to choose whichever programming language they prefer.

Coding dojos are typically organised by a **dojo master**, whose task is to facilitate the space and time, while the participants engage in solving a problem. Often at least part of the participants acts as an audience, whose task is to monitor the working process of other participants and give feedback and improvement suggestions. The problem that the participants engage in is usually not too complex and can even be previously unknown to the participants. This way the participants are able to focus more on honing their programming process, and not spend too much time on planning a solution. Another motivation for not giving out too challenging problems is that each group typically contains both novices and experts. However, if the main focus of the session is to practice problem-solving, more challenging problems may be appropriate. Various types of coding dojo exist. One of the variants is the randori kata dojo, in which the participants solve a problem using pair programming and possibly TDD. In randori kata, one of the participants acts as the driver, and one as the navigator. The rest of the participants act as a silent audience, who observe how the driver

¹⁰ Learning Agile Software Engineering Practices using Coding Dojo, enny Heinonen, Kasper Hirvikoski, Matti Luukkainen, Arto Vihavainen University of Helsinki

and the navigator work together towards a solution. After a specific time-interval or via some other mechanism, the driver moves to the audience, the navigator starts to work as the driver, and a member of the audience moves in to act as the navigator. The driver and the navigator work towards the solution by communicating with each other, making sure they both know what to do next. Although the observers start forming opinions and suggestions about the progress, they must remain quiet. A possible exception is a situation where the driver and the navigator are completely stuck, and indicate that they need help. Naturally, during the switch of navigator and driver, the new navigator can discuss with the previous navigator, who assumes the position of the driver. In a version where TDD is practiced, the audience can also voice out their thoughts when all tests pass, or if a timeout is deliberately called. During a timeout, the participants revisit their approach and discuss possible alternative strategies.

Another variant of the coding dojo is the prepared kata dojo, where one or more of the participants have solved a problem previously, and solve it again in the dojo. The rest of the participants review the working process and the solution, and ask questions whenever they have one or do not understand why something was done. The goal is that the audience understands the solution so that they could later attempt to perform it by themselves. In a coding dojo, the participants are engaged in learning in several ways; the participants can observe and analyze as others work towards a solution, and ask questions or give suggestions. As a participant works towards a solution either as a driver or a navigator, she receives valuable feedback from her pair as well as others, which helps her to reflect on and improve her own working practices.

Implementation phases:

- **Problem Choosing** (5 to 10 minutes): Before the meeting, the participants receive an e-mail with 3 to 5 options of problems to be solved. The problems are chosen from several sources (such as Ruby Quiz¹, Programming Challenges², UVa³, and SPOJ⁴). Each option is briefly presented and the participants vote on which problem will be solved.
- **Problem Discussion** (10 to 20 minutes): Once the problem is chosen, the group discusses the different approaches to solving it, usually ending up with an agreed approach and a list of TO-DO items, as proposed by Kent Beck [1], to guide the pairs during the implementation.
- **Coding Session** (1 to 2 hours): With an agreed approach to solve the problem, the participants start the coding session in one of the two formats – a Prepared Kata or a Randori. They should practice Pair Programming and Test-Driven Development as a general rule.
- **Retrospective** (10 to 20 minutes): At the end of the session, the participants stop coding (even if the problem was not completely solved) to reflect on the experience and share the learned lessons with the group.



C • OPEN SPACE TECHNOLOGY WORKSHOP¹¹

The goal of an Open Space Technology meeting is to create time and space for people to engage deeply and creatively around issues of concern to them. The agenda is set by people with the power and desire to see it through. Open Space Technology workshop (OST) offers a method to run meetings of groups of any size. It allows diverse people to **address complex or possibly controversial issues**. Participants are asked to define a possible common working agenda and a series of topics of work around a specific issue to be discussed such as for instance “What initiatives should we jointly design to foster cooperation with EU in ICT R&D?”. OST works best in *situations involving conflict, complexity, diversity of thought or people and short decision-times*. The rules envisage that participants can present specific proposals and projects and that just like in a marketplace they may move to the topics and groups that they may like most. Each person who makes the proposal has to guarantee the possibility of writing an instant report with the outcomes and main issues discussed by the group. The role of the facilitator in the Open Space is very important as it has to create the right atmosphere to engage all participants into the common working space and make sure that all the principles and rules of OST are respected. The OST workshop normally lasts for one and a half to two days with very intense interaction among participants. The logistics of the workshop require one large room where chairs can all be placed in a circle or a series of concentric circles and a series of breakout rooms to allow the creation of working groups. The room size and number of breakout rooms depends on the number of participants. There has to be a desk with drinks, coffee, fruit and food where people may serve themselves as they keep working. This method works on the principles of freedom and responsibility and counts on the inbuilt self-organising energy of people when facing specific challenges. It may be used with very large numbers of people but requires a careful preparation and definition of objectives, logistics (food, venue, etc.) and follow-up actions.

The Open Space Technology (OST) has four main principles that apply to all participants during the workshop:

- **Whoever comes are the right people:** this alerts the participants that attendees of a session class as "right" simply because they care to attend.
- **Whatever happens is the only thing that could have:** this tells the attendees to pay attention to events of the moment, instead of worrying about what could possibly happen.
- **Whenever it starts is the right time:** clarifies the lack of any given schedule or structure and emphasizes creativity and innovation.
- **When it's over, it's over:** encourage the participants not to waste time, but to move on to something else when the fruitful discussion ends.

And also there is one "law", the "*Law of Two Feet*" (or "The Law of Mobility"), which reads as follows: If at any time during our time together you find yourself in any situation where you are neither learning nor contributing, use your two feet. Go to some other place where you may learn and contribute. This law, together with the principles stimulates self-organisation and is a very strong way to foster empowerment, engagement, responsibility and motivation for all participants.

¹¹ <http://www.chriscorrigan.com/openspace/whatisos.html>

Roles in Open Space:

- Host – announce and host a workshop
- Participant – participate in a workshop
- Bumble bee – person walking between workshops
- Butterfly – take time out to reflect general flow of an open space meeting
- The group convenes in a circle and is welcomed by the sponsor.
- The facilitator provides an overview of the process and explains how it works. The facilitator invites people with issues of concern to come into the circle, write the issue on a piece of paper and announces it to the group.

Implementation:

- Each group places their paper on the wall and chooses a time and a place to meet. This process continues until there are no more agenda items.
- The group then breaks up and heads to the agenda wall, by now covered with a variety of sessions. Participants take note of the time and place for sessions they want to be involved in.
- Dialogue sessions convene for the rest of the meeting. Recorders (determined by each group) capture the important points and post the reports on the news wall. All of these reports will be harvested in some way and returned to the larger group.
- Following a closing or a break, the group might move into “convergence“, a process that takes the issues that have been discussed and attaches action plans to them to "get them out of the room."
- The group then finishes the meeting with a closing circle where people are invited to share comments, insights and commitments arising from the process.

Material Needed:

- Circle of chairs for participants or Letters or numbers around the room to indicate meeting locations
- A blank wall that will become the agenda
- A news wall for recording and posting the results of the dialogue sessions o Breakout spaces for meetings
- Paper on which to write session topics/questions
- Markers/Pencils/Pens or Posters of the Principles, Law of Two Feet, and Roles (optional)
- Materials for harvest.



D • THE EUROPEAN AWARENESS SCENARIO WORKSHOP (EASW)¹²

It consists of a series of **participatory techniques that create an environment favourable to change, innovation and creativity**, so facilitating – through the interaction of the various stakeholders and competencies - the decision process by a group.

The EASW methodology consists in the following phases:

- Scenario development;
- Mapping and involvement of stakeholders and local organisation;
- Workshop – Formulation of visions and elaboration of ideas.

The method may be used with groups of up to 40 people divided into four parallel working groups. In the vision making session there are four stakeholder groups (e.g. **policy makers, entrepreneurs, experts, citizens/users**). In the idea generation phase the groups are mixed to work on four specific core issues (e.g. entrepreneurship, sustainability, learning, networking). The workshop generally requires two full days to identify future visions and define specific action plans. The logistics of the method require a core facilitator and the support of four group facilitators to coach the parallel groups. The space for the workshop requires a plenary room for the initial, intermediate and final meetings where all participants are present at the same time. For the working groups there is the need of four rooms with visualisation tools (flip chart, etc). The method is robust and has a good track record of successful experiences. It requires a strong team to manage all the different processes.

The European Awareness Scenario Workshop Method allows the direct participation of four social groups from civil society (policy makers, entrepreneurs, experts, citizens/users). The setting of a EASW Workshop offers the participants a direct opportunity for exchanging and discussing their points of view, doubts, suggestions and wishes regarding a particular topic or problem with experts and decision-makers. Furthermore it is a tool for promoting dialogue, furthering involvement and for managing a constructive discussion between various actor groups.

To summarize the main aims of the Scenario Workshop:

- It helps raising awareness of future problems in the community.
- It helps developing a common definition of a desirable development.
- It allows discussions with different social groups about obstacles on the way towards a future worth living.
- It allows to identify and discuss the differences and similarities of problems and solutions as perceived by the different groups of participants.

¹²<http://cordis.europa.eu/docs/projects/cnect/4/246644/080/deliverables/001D32Conceptandmethodologyofinteractiveworkshops.pdf>
http://wilawien.ac.at/interacts/interacts_toolkit.pdf

On the one hand a Scenario Workshop helps to develop and generate utopian ideas. On the other hand it allows to plan first steps that can be realized in the near future or even to develop an action plan for the implementation of solution trails.

- It supports attempts to work out solutions together. An optimal result would be the agreement of all participants on a desirable development with respect to the workshop topic.

The central element in the **Scenario Workshop** approach is dialogue aiming at moderating the participants to develop their own visions related to a specific focus question and their specific area of interest, and through discussions enabling the participants to identify and develop suggestions on options to achieve their vision.

Development of scenarios: within an EASW the role groups develop a **best-case** (positive) and a **worst-case** (negative) **scenario**. Experience shows that people more easily develop a worst-case scenario compared to a best-case scenario. It supports developing the best-case scenario.

Introductory Session: in plenary the Scenario Workshop starts with an introductory session in plenary, welcoming the participants and explaining them about the programme of the day. Presentations of the organiser: are explaining the wider settings and the aims of the workshop. There is also room for a short presentation of the organiser organisation and for any material the organiser considers as helpful in the frame of the workshop.

Group Session 1: *Development of the Future Scenario* within the four Interest Groups (Role Groups). The participants develop and discuss within their role group a positive scenario related to the scenario workshop focus question (the prospective question) reflecting their interests and future expectations. To support this process it is helpful to provide the groups with handouts to help develop the scenario, pointing out the main questions to ask and what steps to take. Each role group develops one common future scenario reflecting their interests and future expectations. A minimum participation of four persons per role group is recommended. The maximum participation per role group should be limited to eight persons to give the individual participants a chance to discuss and bring forwards ones view. It is recommended to have around one and a half hour of discussion time.

Presentation of the Results of each Interest Group (Role Group). The individual scenarios are presented by one spokesperson each and are compared with each other. Thus one can learn to understand the ideas, fears and wishes of the participating role groups and identify common ground and conflicting issues. The discussion stimulates mutual understanding. Individual motives, backgrounds, intentions become visible and decisions are made transparent and comprehensible.

Plenary Session 1: Identification of common Themes derived from the four Scenarios. In a first step a list of common topics and themes derived from the four scenarios is drawn up by the participants. In a second step this list gets whittled down to four themes to continue working in the thematic groups.

Group Session 2: Division of the Participants into four Thematic Groups. Here the participants are divided into four thematic groups, and the aim is to discuss and develop means of actions towards the chosen theme for further discussions. Each thematic group consists of participants of all role groups. Thus the scenarios from the individual groups are present in each thematic group. Each thematic group gets supplied with a handout focusing on the suggested questions and including a coordinate axes schema supporting a structured presentation of the findings. A minimum participation of four persons per thematic group is recommended (one representative of each role group). The maximum participation per thematic group should be limited to eight persons to give the individual participants a chance to discuss and bring forwards ones view. It is recommended to have around one and a half hour of discussion time.

Plenary Session 2: Presentation of the Results of each Thematic Group 2. Plenary Discussions of what to do next - drawing up an Action Plan (a Master Plan). This part of the participatory workshop brings us back to reality. Based on the results of the thematic groups a plan is developed for the implementation of the results, i.e. what each participant or participating group can contribute to the realisation of the scenarios. This last step opens up perspectives for concerted action, shows practicable ways for implementation and can go as far as developing a strategic action plan. In some cases an actual action plan is developed pointing out responsibilities of the different actors, and in other cases, the scenario workshop ends with several suggestions to change a given situation, but without pointing out responsibilities.

E • BASIC SWOT WORKSHOPS¹³

Basis SWOT Workshops are standardized workshops with a predefined length (2.5 to 3 hours), following a specific agenda, with specific materials (presentations, context information, templates, etc.), questions to be discussed and documentation formats.

The objective of the Basis SWOT Workshops is to integrate the knowledge and perspectives of multiple stakeholders of a regional innovation system into a highly complex strategy development process. The objective behind the high involvement of all stakeholders in the strategy development process is to build a broad commitment for the future strategy among stakeholder groups very early on.

The design of the Basis SWOT Workshops allows collecting, documenting and discussion perspectives of different stakeholder groups on perceived strength, weaknesses, opportunities and threats of the innovation system.

These perspectives serve as a basis for the further elaboration of:

- strategic goals and activities based on the internal Strengths & Weaknesses of the actors of a larger system, and

¹³ Hands On Knowledge CoCreation and Sharing: Practical Methods & Techniques, Patricia Wolf, Christoph Hauser & Simone Schweikert

- scenario building on external Opportunities & Threats relevant for potential futures of the respective context.

Due to the specific design, a concrete result of the Basis SWOT Workshops is a collection of strengths, weaknesses, opportunities and threats of the 'researched' region. In addition, participants define objectives and impacts that should be reached by the future strategy and describe concrete single actions each participant is willing and able to contribute to the achievement of these objectives or impacts.

Preparation:

- The Moderator has to find out beforehand what kind of people are going to participate in the workshop. Therefore, the moderator should use available background information i.e. provided at the website of the group as well as talk to other people who already have been in contact with these groups.
- The Moderator should study the slides some days before the workshop. Ideally, new moderators should participate beforehand in at least one workshop that is moderated by an experienced moderator.
- The back office has to contact workshop host organisations, agree a date that is convenient to both the group and the moderator and reserve the necessary facilities (appropriate group rooms, projector and flipchart). Then, the back office should send out invitations to the workshop participants.
- The Back office has to prepare the necessary workshop material.

Facilities and general material:

For each group, a group room for up to 12 people is required. Tables and chairs should form a 'U', so that participants face each other. The room needs to be equipped with pin walls (or walls suitable for sticky tape), projector, laptop and a flipchart. It is crucial that pin walls are large enough, possibly one square meter per person.

Further general material needed for conducting the workshop are pens/markers (one per participant, same colour for everybody), pins (or sticky tape) and board marker for the moderator. The moderator should bring a digital camera with him.

Print outs and templates:

The following print outs are needed by the moderator for her/his own information: a printout of the presentation including instructions on slide content to be told, overhead projector slides as back up and the list of participants (name, organisation, professional background).

For the workshop, the moderator and the participants need the following material:



- Colour print out of the slide showing the different roles concerning knowledge transfer in the innovation system, one per participant
- Templates for writing down strengths (yellow), weaknesses (blue), opportunities (green) and threats (red), 10 per participant and SWOT element
- sticky points, 12 per participants
- SWOT Poster (A1Format)
- Templates for writing down three objectives for the regional innovation strategy, one per participant
- Template for writing down personal actions, one per participant.

F • FUTURE WORKSHOPS (THE UNTHINKABLE AND HOW TO MAKE IT HAPPEN)¹⁴

Future Workshops are a method to develop a vision of the future shared by the participants. These workshops primarily aim to encourage socially or otherwise excluded people to take an interest in their future and to pursue their dreams. The method is fundamentally driven by their creative energy, and it emphasizes the equal status of participants regardless their social, political, etc. background and role. Future Workshops are best used in a context where there is scope for action and where collective efforts are required to change a restrictive environment to better suit the needs of its users.

Future Workshops combine analytical (rational) and creative (intuitive) phases to:

- Analyse a given, current situation,
- Develop visions of the future and
- Agree on an action plan how to reach these desired results.

Participants of a Future Workshop thus embark on a cathartic journey, starting by naming the curse of today and the fears of the future, continuing by being allowed to dream and so to overcome the constraints of everyday life and the normative power of the factual, eventually ending up developing and initiating concrete actions towards a desirable and better future.

While carried out under a strict time management regime, Future Workshops are extremely open to any content addressed by participants. 'Everything said is important', 'everyone gets the opportunity to speak' and 'everything is recorded' are the underlying principles for true and equal participation. This is supported by a variety of facilitation techniques.

¹⁴ Hands On Knowledge CoCreation and Sharing: Practical Methods & Techniques, Peter Troxler & Beate Kuhnt

Future Workshops are best suited for solving problems in organisations such as factories, coops and unions, schools and youth centres, pressure groups and voluntary organisations, neighbourhoods and communities.

Future Workshops are a method to develop a vision of the future shared by the participants. These workshops primarily aim to encourage socially or otherwise excluded people to take an interest in their future, to develop a belief in being powerful by themselves, and to give them the prospect to achieve their dreams. The Future Workshop is fundamentally fuelled by the creative energy and equal status of the participants.

Appraisal phase

The analysis of a given situation is the critical **appraisal phase**. Its aim is not to produce a rational, well-balanced, consensus view of the current situation. Quite the opposite should happen in this phase. Participants are asked to name all the negative aspects of the current situation, and all the fears of the future they have. The critical appraisal will inevitably draw a dark picture of the present and a bleak outlook into the future. This is essential for the whole Future Workshop since it is believed that only if participants can express their negative feelings they are able, in the next phase of the process, to leave them behind and invent a new, positive future.

Example of critical appraisal phase:

Step	Duration	Activity
Introduction	10 min	Facilitators explain the aims of the critical appraisal phase
Critique	20 min	Small group activity: Participants formulate their frustration and critique and jot down keywords on A3 oder A4 sheets of paper
Cluster	30 min	Plenary: critiques are clustered into groups according to similarity
Select	15 min	Plenary: Participants select those critiques groups they deem most important (e.g. by marking them with their initials)
Expand	45 min	Plenary: Participants are asked to tell their own stories relating to those critiques that have been selected; facilitators take notes on a flipchart so they are visible (and legible) for everybody.

Utopian fantasy phase

To develop visions of the future is the aim of the **utopian fantasy phase** (or simply fantasy phase). As radical as the critique had to be in during critical appraisal, as radical the utopias should become in this phase. Particularly the constraints of money, power and politics can safely be ignored. Participants are allowed and actively encouraged to dream. The normative forces of the factual no longer should dominate the discourse. Yet participants will not just generate endless wish lists. They will have to develop coherent descriptions of Utopias, defined as 'place(s) of ideal perfection especially in laws, government, and social conditions'.



Example of utopian Fantasy phase:

Step	Duration	Activity
Get positive	15 min	Work in pairs: For each critique participants describe in one sentence a positive situation where the particular critique would be absent or invalidated.
Introduction	10 min	Facilitators explain the aims of the utopian fantasy phase
Visualize	20 min	Small group activity, according to interest in single aspects of the positive sentences: Participants create a visual representation of their wishes by painting a picture.
Associate	20 min	Plenary / individual work: Participants freely associate ideas, stories, etc. that relate to the imagery created in the step above.
Develop utopias	50 min	Small group activity: Every participant selects one idea from the visualisation and related associations (ideas, stories). The group assembles these into a fairy tale, a play or similar to describe an utopian society or setting.
Evaluate	60 min	Plenary: Small groups present their utopias. The other participants try to identify what novelties and inventions these utopias contain.

Implementation phase

Realisation— i.e. to transform Utopia into a picture of a desirable future, and to initiate first steps towards that future— is the aim of the implementation phase. This is difficult to achieve; and it is best done in several iterations, approaching the desirable from the far end, e.g. by identifying those characteristics of the Utopias that relate most closely to existing realities. Finding analogies and examples of 'what is possible there could also be possible here' is essential to avoid getting trapped by accepting constraints as given instead of challenging them. Once a description of a desirable future has been found, the last stage in the process is to start to make it happen. A Future Workshop ends with an action plan that brings a first step towards a better future within reach of the participants.



Example of implementation phase:

Step	Duration	Activity
Review ideas	20 min	Participants form pairs and review all the ideas generated in the utopian fantasy phase and have to agree on one single idea they like most.
Introduction	10 min	Facilitators explain the aims of the implementation phase
Cluster	10 min	Plenary: Every pair reports the idea they have selected, the plenary attempts to cluster the ideas.
Examples	30 min	Plenary: Participants try to think of examples and analogies where an idea has already been realised in a different context.
Demands	20 min	Small group activity: Small groups form according to interest in ideas. Their task is to formulate what is required for the idea to become reality as concrete demands. Ideally, these demands cover short-, medium- and long-term aspects of the idea.
Vote	30 min	Small group activity: The groups rotate and vote on the demands established by the other groups. At the end, each group selects one of their demands to develop into a project in the following steps.
Develop projects	30 min	Small group activity: Participants formulate a project by answering the questions: What do we want to do? Why do we want to do it? How are we going to do it? Who is going to do it? Who do we need to inform, to consult, to get support from? When and where do we start?
Present and commit	45 min	Plenary: Each group presents their project; the other groups critically assess the proposal, ask questions and critically evaluate the commitment of the group's members to actually take action.

The Future Workshop **ends** with one or **several concrete projects** and action plans. Participants have committed themselves to take action. A better future now seems realisable. However, it is important to be aware that sometimes 'reality kicks in', that everyday routine quickly can consume the enthusiasm an energy that was set free in the Future Workshop.



G • WORLD-CAFÉ¹⁵

The world café is a workshop method, suitable for group sizes from 12 up to 2,000 participants. It is a structured conversational process intended to facilitate open and intimate discussion, and link ideas within a larger group to access the "collective intelligence" or collective wisdom of the participants. In a World Café, the focus is on exploring and innovating on themes rather than on problem-solving. The format is principally designed as a forum for creative or open thinking and is not suited to scenarios where there is a predetermined answer or solution. The World Café process provides an open forum for discussion that aims to equalise the power relationships between participants in order to understand and learn from multiple points of view.

A World-Café enables its participants to become acquainted with different perceptions and different approaches to a topic, to discover patterns and to identify goals and correlations, to become cooperative, listen closely, to question, not to discuss and thus to work on common problems. Each person interprets the world differently, based on his/her perception. Sharing the viewpoints of others is essential for understanding alternatives and adapting strategies. By using appropriate questions, a World Café tries to bring people in a constructive dialogue with each other – on topics that are relevant to the participants. The point is to let preferably all persons concerned a chance to speak, to find common goals and strategies and thereby awake their engagement / willingness to contribute to the change processes.

Implementation of a World Café

The implementation is the most important step in the World Café process. A World-Café takes about 45 minutes to four hours.

Many World Cafés charge a professional moderator (as the café host) with the overall moderation of the event. The moderator opens the World Café with a warm welcome and an introduction to the World Café process, setting the context, sharing the World Cafe Etiquette, and putting participants at ease.

Example for World Café etiquette, the moderator has to communicate to the participants:

- Focus on what matters.
- Contribute your thinking.
- Speak your mind and heart.
- Listen to understand.
- Link and connect ideas.
- Listen together for insights and deeper questions.
- Play, doodle, draw – writing on the tablecloths is encouraged.

¹⁵ <http://www.theworldcafe.com>

The moderator asks for volunteers among the participants for the role of table hosts and explains their tasks (other possibility: the organizing team provides the table hosts). The table hosts have a special meaning in the World Café. They have to make sure that an open, clear and friendly atmosphere arises. The table hosts remain in the standard version for all discourse rounds at their table and take leave of their guests when they change the table, welcome the newcomers and summarize the main ideas and key findings of the previous round. During the conversation at their table, they ensure that all can participate and that important thoughts, ideas and connections of all will be written and drawn on the tablecloths. At the end of the process, they have to roughly summarize the key finding of their table.

Afterwards, the moderator initially divides (random) the participants in several groups according to the number of tables and assigns each group to a table. The moderator poses the questions or topics for discourse rounds and makes sure that the questions is visible to everyone on a flip chart or on cards at each table. The moderator moves among the tables and encourages everyone to participate and during the discourse makes sure key insights are recorded visually or are gathered and posted if possible. The moderator keeps track of the time slots of the discourse rounds and signalizes if the participants have to change to another table or if there will be a short coffee break. Hot and cold beverages as well as cookies or something similar should be available to the participants over the whole event.

The participants sit distributed in the room at tables with four to eight people. The tables are covered with white, writable paper tablecloths (and/or paper cards) and pencils or markers. Each table covers a specific topic or question. Each discourse round is prefaced with this question designed for the specific context and desired purpose of the World Café. The same questions can be used for more than one round, or they can be built upon each other to focus the conversation or guide its direction. Alternatively, there can be one global topic with subtopics distributed to the different tables. During a discourse round, this topic or question has to be handled by each group for 15 to 30 minutes.

The process starts with the first of three or more discourse rounds for the small group seated around a table. At the end of each discourse round, each member of the group moves to a different new table. Only the table hosts stay at their table for the whole time. They welcome new guests, summarize briefly the previous conversation and motivate the further discourse.

In some versions a "talking stick" may be used to make sure that all participants get a chance to speak. As well as speaking and listening, individuals are encouraged to write or draw on the paper tablecloth or paper cards so that when people change tables they can see what previous members have expressed in their own words and images. Participants have multiple discourse rounds in response to predefined questions, taking the ideas from one group and adding to them, developing insights through multiple conversations with a diverse number of people, and expanding the collective knowledge of the group. In this way, the results are reflected visually in a variety of ways.

Depending on the planned number of discourse rounds, the moderator may start after several discourse rounds one conversation round for the whole participants' group in order to talk about the intermediate result of the World Café.

The World Café is completed by a reflection phase. After the predefined numbers of discourse rounds are finished, the table hosts get 10 minutes to roughly summarize the findings from their tables. After this, the moderator asks the participants if they want to clarify or amend anything. Then the moderator explains to the participants what will happen with the results of the World Café, e.g. a clustering of ideas and insights and deeper analysis concerning the development of solutions. The moderator asks the participants if somebody is interested in the analysis results and their further usage and collects the email addresses of interested participants. Then the moderator thanks the participants for their engagement and closes officially the World Café. Following, a buffet will be offered to the participants (depending on the money available) where they can further discuss their insights.

Wrap-up of a World Café

After the implementation of the World Café, the results have to be used according to the purpose and the goal(s) of the event. This may comprise a further clustering of ideas and insights collected during the event, a removal of duplicates, a filtering of unrealistic ideas by discussions with experts, a feasibility study of the filtered set of ideas (can be seen as a requirements analysis for further steps) etc. Some World Cafés create a kind of storybook to bring the results to larger audiences after the event. A visual recorder can create a picture book along with text as documentation. Interested World Café participants should be informed about the further use of the results.



PART 3: METHODOLOGICAL FRAMEWORK PLEASS

METHODOLOGICAL FRAMEWORK FOR SETTING AND IMPLEMENTATION OF CO-CREATION LAB - PLEASS APPROACH

For the implementation of Co-Creation labs within THE4BEES project, the following 6-step methodological approach is suggested:

- #1- Prepare an action plan
- #2- Localise and identify your target groups and stakeholders
- #3- Establish a Co-Creation PPPPP (Public-Private-People Project Partnership)
- #4- Assess the relevance of "transnational" issues
- #5- Start animating the Co-Creation labs, establish and connect the sensor boxes and IT tools
- #6- Summarise and evaluate the results.

1 Prepare an Action plan

Action plans will be the initial action prepared in order to give local Co-Creation labs a roadmap guidance for implementation.

Within THE4BEES project, 7 Co-creation labs will be established:

- Piedmont, Alpine Huts and Lodges in Susa/Chisone Valleys, Managers/Tourists/Students
- Lombardy, Social Houses in Sondrio, Tenants/Building Managers
- Rhone-Alpes, High Schools, Teachers/Students
- Salzburg, High Schools, Teachers/Students
- Savinjska, Saleska and Koroska, High School in Velenje, Teachers/Students
- Fribourg, BlueFactory Co-working space, startupper/researchers
- Baden-Wuerttemberg, Factories in BWCON cluster, Managers/Employees.

Each Co-Creation lab will be operating in different socio/cultural environment and will be targeting different focus groups that have different needs. Using exactly the same methods for all would make the pilots too rigid and out of their reality scope. Therefore each Co-Creation lab will create its own **Action plan**, as envisaged in the Application form: CCLabs plans. CCLabs Action plans will use the PLEASS approach as a general framework, but partners are free to develop their own activities according to the users reality and needs. The Action plan should not be seen as a fixed document, but rather as a roadmap, with possibilities for the journey to change along the road. The Action plan should be an operative document, not too long, preferably having up to 15 pages. The Action plan should be a “living” document, this mean, you should update it, when the change will come. If you will see in the middle of co-creation process additional target groups or additional workshops will be implemented, please update the action plan accordingly.

CCLabs action plans should include:

1. Brief description of the territory wherein the Co-Creation lab is focusing on, including a map;
2. Reality of energy efficiency state of the art within the region, state of awareness among the target group, outline of energy-efficient behavior of the target group.
3. Short description of the target group, prediction of their needs and socio/economic reality including some photos (schools, co-working space, huts...);
4. List of possible participants of the Co-Creation lab with representatives from different sectors: **public** (regional/local level decision makers, academia,...) **private** (SMEs), **person** (students or individuals) and representatives of the **project**.
5. Assessing the relevance of transnational issues
6. Methods used within CCLabs - PLEASS approach. Each lab can select their own Co-Creation methods. They can use suggested ones from this methodological framework or other methods based on partners experiences or literature. The only fixed requirement is to implement one unconference and two coding dojos.
7. A Communication plan to support the local Co-Creation process
8. Summary and evaluation

#2 Localise and identify your target groups and stakeholders

The localization and identification of your target groups will be the second task, after the preparation of the Action plan. There is a distinction between target groups and project stakeholders group, in the level of involvement. The project stakeholders group will be more deeply involved in the Co-Creation process with actual active participation in the process, while the target groups can be included in the other less active ways: communication and dissemination support to lobbying and decision making process, raising awareness and indirect change of behaviour.

The following **target groups** are to be identified at local level:

TARGET GROUP	SPECIFICATION	TARGET VALUE (FOR EACH PILOT)
General public	It includes potentially the whole citizenship (everyone is an energy user) as target for dissemination.	750
Local public authority	Include Provinces, Municipalities, Unions of Municipalities where they are either involved in the policy-making process (on relevant policies) or in charge of the execution or implementation of such policies.	30
Regional public authority	Regions are one of the main target groups and stakeholders. In all the Countries involved in the project, one or more Regions are either Partner or Observer. Different departments/ Sectors are relevant: Energy and Environment, Social Housing, Education,...	2
Interest groups, including NGOs	They are often an important trait-d'union between regional/local authorities and civil society and citizenship. They are also represented in the partnership and relevant groups will be further targeted during the project.	1
Education centre/school	Since the learning process is at the basis of our awareness raising approach, education institutions will be targeted. Moreover schools (teachers, students, managers) will be involved in many regions as active part in the Co-Creation activity (IT,FR,AT,SI).	2-3
SMEs	ICT SMEs (incl. start-ups) are involved in the CCLabs. Innovative SMEs (as energy users) are involved as target groups in the German and Swiss local pilots. Their involvement will not produce economic advantage nor will they get transfer of resources.	2
National public authority	Especially in the cases where relevant policy-	1

	making is a national competence (Regions do not have a political power), relevant Ministries and Departments of national public authorities are involved as target for policy improvements and dissemination.	
Other	Other specific groups are in the Alpine tourism sector: managers of accommodation facilities (huts, lodges) and hikers/tourists. As far as the Piedmont local pilot is concerned, publicly owned buildings are directly involved in the local pilot.	15
Project stakeholders group*	Project stakeholders group will be the most important group, since representatives will be actively included in the Co-Creation process.	15-30

***Project stakeholders** group will consist from the representatives of target groups:

REGION	TARGET GROUP
Piedmont	Alpine Huts and Lodges in Susa/Chisone Valleys, Managers/Tourists/Students
Lombardy	Social Houses in Sondrio, Tenants/Building Managers
Rhone-Alpes	High Schools, Teachers/Students
Salzburg	High Schools, Teachers/Students
Savinjska, Saleska and Koroska,	High School in Velenje, Teachers/Students
Fribourg	BlueFactory Co-working space, start-uppers/researchers
Baden-Wuerttemberg	Factories in BWCON cluster, Managers/Employees



#3- Establish a Co-Creation PPPPP (Public-Private-People Project Partnership)

When stakeholders are identified and localized, a local partnership should be created in order to run the Co-Creation process.

It is envisaged that you create two types of groups:

- Local Steering Committee group
- Local Co-Creation group.

Local steering committee group

The local Steering Committee group will be responsible for strategic guiding and practical coordination of the Co-Creation process in your community. The Steering Committee group should consist of all 4 type of stakeholders (4P):

- Projects staff (project officers of one or more partners, if several partners are included in the same pilot area)
- Public stakeholders (can be decision makers or responsible persons of your operation area: school principals, mayors, public servants, etc...)
- Private stakeholders (local SMEs with interest in energy savings or ICT)
- People (residents, teachers, students, etc...).

The Steering Committee should be flexible and ideally count 5-10 persons.

Steering Committees tasks:

- Discussing and contributing to the energy efficiency assumptions, behavioural assumptions, needs assumptions and setting the final goals of co-creation process;
- Monitoring of the Action plan and adopting it according to the co-creation process flexibility;
- Organization and support of the Co-Creation process with the co-creation group;
- Promotion of the project and Co-Creation process;
- Policy and decision makers' support;
- Assessing the results of the Co-Creation process, including behavioural change.

Local co-creation group

Local Co-Creation group will be the group actually implementing Co-Creation process. The group will consist mainly with the representatives from core interest groups (schools, huts, social housing co-working space and factories). Additionally representatives from public and private sector will join the process; however, they are not obliged to participate in every event. Within the whole process, representatives of all 4 groups (public, private, person and project) should participate in the Co-

Creation process. The local Co-Creation group will be operative at least from the establishment until the end of the project.

Tasks of the Co-Creation group:

- Active participation in the Co-Creation process including working with Arduino platform, led by project partners.
- Promotion and dissemination of results and process to their friends/other people they are in touch with, using personal communication and ICT tools/apps.
- Proposing sustainability of the process after the project end.

Suggestions:

- be as open and inclusive as possible at this stage (there will be time to handle the withdrawals);
- you can change certain number of the participants of the groups, but try not to change more than 50% of the group;
- consider the following items
 - > the thematic domain(s) targeted in the pilots;
 - > the regional policy priorities, which can lead e.g. to specify the thematic sub-domains or lines of intervention, or to differentiate the ways of financing the local pilots;
 - > the Co-Creation methods selected that has some impact on the design and implementation of the overall approach;
 - > the aims of the whole initiative (project obligations, your interest and target groups interest in doing all this).

There is an obvious need for communication and publicity at this stage. All project partners should adopt communication tactics for supporting awareness raising and dissemination.

4 Assess the relevance of "transnational" issues

The project was submitted under the priority of Establishment of *transnationally* integrated low carbon policies. Its full name is "*Transnational* Holistic Ecosystem 4 Better Energy Efficiency through Social Innovation". ICT applications should have transnational value and cooperation. The Co-Creation labs should have a transnational orientation, especially those who are involving similar target groups (schools). Additional effort should be put to assess transnational issues in the field of behavioural change. Tools developed within the project will be transnationally shared.

Transnationality in the Co-Creation labs should be considered in the following domains:

- technical/semantic interoperability of software on the transnational level (D4.3.1);
- transnational user requirements (D.3.3.1)

- transnational concept for IT applications based on user requirements (Output - D3.2)
- joint guidance and realization of transnational energy monitoring applications;
- mutual learning (transnational labs, joint tests...);
- transnational value of the results;
- mutual inclusion of specific partners to specific Co-Creation lab.

#5- Start animating co-creation labs, establish and connect sensor boxes and IT tools

The Co-Creation labs, consisting of local steering group and local Co-Creation group would start working as soon as the groups will be constituted. It is advised first to run a local steering group meeting, followed by first Co-Creation session.

Local steering committee's group meetings

Steering committee group meetings should be organized at least 3 times during the Co-Creation process. The suggested methodological form is the *European awareness scenario workshop*, but you can use also different types of workshop. Mandatory is inclusion of all users in the Co-Creation process.

- **Initial meeting**, where the following aspects should be discussed:
 - › Organized in the beginning before Co-Creation groups start to work;
 - › Presentation of the project, its implementation and results;
 - › Discussion about the energy efficiency needs in line with the project goals,
 - › Discussing energy efficiency assumptions, behavioural assumptions, and setting the final goals of Co-Creation process;
 - › Setting up operational structure of local Co-Creation group, selecting participants;
 - › operational planning of the Co-Creation process and selection of Co-Creation workshops;
 - › Promotion goals and contributions of local steering committee members to promotion and communication;
 - › Conclusions.
- **Interim meeting**, where the following aspects should be discussed:
 - › Organized in the middle of Co-Creation process;
 - › Assessment of the Co-Creation process, interim results, target groups behaviour;
 - › Discussion about behavioural change;
 - › Pointing out weak and strong points of Co-Creation process, preparing recommendations for continuation of the Co-Creation process;



- › Discussion about communication and promotion of the project (what has been done, what will be done in the future);
 - › Discussion about how to influence decision makers and policy makers, who can do what;
 - › Conclusions.
- **Final meeting** where the following aspects should be discussed:
 - › Organized at the end of Co-Creation process;
 - › Assessment of Co-Creation process, final results, behavioural change;
 - › Lessons learned;
 - › Final dissemination and communication (who does what);
 - › Continuation plan for sustainability of Co-Creation after project end (operational sustainability, policy sustainability);
 - › Conclusions.
 - › Please measure satisfaction level of participants with the process. Please use 4 step evaluation grid: completely unsatisfied, unsatisfied, satisfied, completely satisfied.

Local Co-Creation groups

Co-Creation process will be implemented in the local Co-Creation groups with the stakeholders already identified in the step #3. In order to implement high quality and inclusive co-creation process and at the same time fulfil requirements of the THE4BEES project the following **mandatory minimum requirements** are set:

- **Implementation of minimum 5 Co-Creation events** (upper limit is not set);
- Implementation of at least **1 unconference** (included in these 5 events);
- Implementation of at least **2 coding-dojos** events (included in 5 events).

The following thematic and organizational frame is suggested, but it is not mandatory. You can adopt Co-Creation process according to the user-content reality of specific pilot.

1st Co-Creation workshop: suggested workshop method: SWOT workshop or world café.

Suggested topics to be discussed:

- Introduction and presentation of the project; (*awareness event D2.3.1*)
- Presentation of the Co-Creation process;
- Energy efficient behavior in the target area (schools, huts, homes, etc...) – ideas for energy efficient behavior and measures how to stimulate the behaviour;
- Needs and obstacles to increase energy efficiency (SWOT analysis or needs analysis);
- User requirements;



- Conclusion.

2nd Co-Creation workshop: suggested workshop method: unconference (also inputs for WPT1, O2.1, D2.4.1. – Unconferences)

Suggested topics to be discussed:

- Collection of ideas, opinions and suggestions on the use of ICT for low carbon economy. Participants and partners will learn from each other (D2.4.1);
- Collecting inputs for Output 2.1 – Comprehensive Study on Efficient Behaviour (additional questions should be provided by WPT1 coordinator);
- Discussion about available ICT tools, apps and Arduino platforms;
- Planning ICT programming event (coding dojos) what is needed and timeline.

3rd Co-Creation workshop: suggested workshop method: coding dojos (also input for WPT1, D2.4.2, D3.4.2. and OI2.1.3)

- Collectively programming challenge session: basic introduction or Arduino, programming and goals. Start of development of sensor boxes, included sensors and communication technology. (inputs for D.2.4.2, D3.4.1., OI2.1.3). Further details on programming and process should be provided by coordinator of WPT3 and WPT4. Participants should be encouraged to use social media for the dissemination of the event.

4th Co-Creation workshop: suggested workshop method: coding dojos (also input for WPT1, D2.4.2, D3.4.2. and OI2.1.3)

- Collectively programming challenge session: building and finalization of sensor boxes (at least 6 sensor boxes per pilot), using common smart data platform, sensor installation and calibration, specifications of sensing networks. (inputs for D.3.4.1, D4.1.2, D4.2.1. D4.3.1.). Further details on programming and process should be provided by coordinator of WPT3 and WPT4. If two workshops are not enough for building, calibration and proper integration of 6 sensors, additional coding dojos workshops should be implemented. Participants should be encouraged to use social media for the dissemination of the event.

5th Co-Creation workshop: suggested workshop method: future workshop

- The workshop is based on monitoring the results from sensor boxes. Discussion about behavioural change implemented within the timeframe and as a consequence of coding dojos of the Co-Creation process. Imagining future scenario of how Co-Creation can influence behavioural change, how this model can be transferred to broader areas, how to continue with the process after the project end. Inputs for geo-temporal aware storytelling platform and testing the storytelling apps. Please measure satisfaction level of participants with the process. Please use 4 step evaluation grid: completely unsatisfied, unsatisfied, satisfied, completely satisfied.



#6 Summarise and evaluate the results

Summary of the Co-Creation process will be prepared focusing especially on the impacts and behavioural change. Summary should include findings from Local Steering Committee meetings and Local Co-Creation groups.

Assessment should answer to the following questions:

- What were the results and impacts of Co-Creation process on change of energy behaviour (local/regional/national level)?
- How open innovation – Co-Creation process was implemented? What methods have been used? Were they appropriate?
- What was the effect on policy (decision makers) level?
- What was satisfaction level of participants (summary from the evaluation grids, please see step #5)?
- What is potential for larger uptake (reuse/transferability) of similar actions and approaches in other Alpine Space territories – describe possibilities for capitalization of the Co-Creation process?
- How the transnational added value was implemented within the Co-Creation process?
- What lessons have been learned within the process?



LOCAL ACTION PLAN TEMPLATE

Responsible partner, region, country:						
Place, date and version:						
1.) Brief description of the territory the Co-Creation lab is focusing on including the map;						
2.) Reality of energy efficiency state of the art within the region, state of awareness among the target group, outline of energy-efficient behavior of the target group;						
<p>3.) Short description of the target groups, prediction of their needs and socio/economic reality including some photos (schools, co-working space, huts...); (Please follow the step #2 “Localise and identify your target groups and stakeholders” From PLEASS approach)</p> <table border="1" style="width: 100%; border-collapse: collapse; margin-top: 10px;"> <thead> <tr> <th style="padding: 5px;">Target group</th> <th style="padding: 5px;">Specification</th> <th style="padding: 5px;">Target value</th> </tr> </thead> <tbody> <tr> <td style="height: 20px;"></td> <td></td> <td></td> </tr> </tbody> </table>	Target group	Specification	Target value			
Target group	Specification	Target value				
<p>4.) List of possible participants of co-creation lab with representatives from different sectors: public (regional/local level decision makers, academia,...) private (SMEs), person (students or individuals) and representatives of the project.</p> <p>How will you create co-creation PPPPP ?</p> <p>Please follow the step #3 Establish a Co-Creation PPPPP (Public-Private-People Project Partnership)</p> <ul style="list-style-type: none"> - Proposed names of local steering committee group members - Proposed names of local Co-Creation group members 						
<p>5.) Assessing the relevance of "transnational" issues</p> <p>Please follow the step #4 Assessing the relevance of transnational issues</p> <p>Please consider the following aspects:</p> <ul style="list-style-type: none"> - technical/semantic interoperability of software on the transnational level - transnational user requirements 						

- transnational concept for IT applications based on user requirements
- joint guidance and realization of transnational energy monitoring applications;
- mutual learning (transnational labs, joint tests...);
- transnational value of the results;
- mutual inclusion of specific partners to specific co-creation lab.

6.) **Methods used within CCLabs.**

Each lab can select their own Co-Creation methods. They can use suggested ones from this methodological framework or other methods based on partners experiences or literature. The only fixed requirement is to implement one unconference and two coding dojos.

Please follow the step #5- Start animating Co-Creation labs, establish and connect sensor boxes and IT tools

Local Steering committee

	Objectives and issues to be discussed	Material needed	Provisional timetable
Initial meeting			
Interim meeting			
Final meeting			
(additional meetings if needed...)			

Local Co-Creation groups

	Objectives and issues to be discussed	Material needed	Provisional timetable
1 st meeting (workshop method)			
2 nd meeting (workshop method)			
3 rd			

meeting (workshop method)			
4 th meeting (workshop method)			
5 th meeting (workshop method)			
(additional meetings if needed...)			

7.) Communication plan to support local co-creation process

Which will be target groups? What will be local communication objectives? What means will you use to promote Co-Creation process on local level? Who will do what, what channels will be used, how will you include local steering group and local Co-Creation group.

8.) Summary and evaluation

Please follow the step #6 - Summarise and evaluate the results

- What were the results and impacts of Co-Creation process on change of energy behaviour (local/regional/national level)?
- How open innovation – Co-Creation process was implemented? What methods have been used? Were they appropriate?
- What was the effect on policy (decision makers) level?
- What was satisfaction level of participants (summary from the evaluation grids, please see step #5)?
- What is potential for larger uptake (reuse/transferability) of similar actions and approaches in other Alpine Space territories – describe possibilities for capitalization of the Co-Creation process?
- How the transnational added value was implemented within the co-creation process?
- What lessons have been learned within the process?



CO-CREATION EVENT TEMPLATE

Responsible partner, region, country:
Type of the event: Local steering committee group or Local co-creation group
Co-Creation method of the event: (unconference, coding dojos, etc...)
Place and date:
Objective of the event:
Agenda of the event:
List of participants:
Minutes of the event:
Describe Co-Creation process (how different groups have been involved in joint implementation of the event?):
<p>Self-evaluation and lessons learned</p> <p>Please describe the situation at the beginning of the event: What is the status quo?</p> <p>Please describe the situation at the end of the event: Where is the difference? What has been reached?</p> <p>What have the participants learned?</p>

Which questions were asked?

Which questions could not be answered?

To which extent the participants were satisfied with the event? Why? Why not? What was good? What was not that good?

What would you recommend to the THE4BEES team regarding further events?

Communication activities within the event and target groups reached

Photos from the event

