

Designing the Co-Creation Workshops: Deliverable D4.1 'Workshop Design and Implementation Plan'

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Designing the Co-Creation Workshops

Deliverable D4.1 'Workshop Design and Implementation Plan'

Lead beneficiary: DIALOGIK

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Introduction

The Project LIV_IN seeks to explore the potential of Responsible Research and Innovation (RRI) in creating innovative solutions in the emerging fields of smart home and smart health technologies and services. Following a participatory approach, LIV_IN aims at providing spaces where leading technology developers from industry can meet up with citizens and users to commonly discuss and shape ideas, applications, or products. Altogether six of these 'co-creation labs' will be conducted in order to both arrive at deployable innovations adapted to user needs and scientific and methodological insights contributing to deepening the understanding of RRI. Connecting RRI with user integration, LIV_IN taps into new ground which requires setting up landmarks LIV_IN partners can rely upon when designing co-creation events. This document strives to provide such guidance in terms of conceptual, practical, and methodological aspects to take into account to successfully engage users in innovation processes. These aspects consist of the issues we present in this implementation plan.

1. Responsible Research and Innovation: Definition, Challenges, Good Practices

In modern economies with rapid technological change as well as rapidly changing markets it is decisive for industrial companies to know about the expectations and needs of their customers and users of their products in order to be economically successful. Users are individuals who have specific knowledge about a context or the application of a product. They are experts of their own lives and thus experts in applying technologies that fit with their needs and daily routines. It has been an obvious conclusion from this insight that engaging societal actors in research and innovation activities might be beneficial to researchers and the general public.

A key approach in addressing the involvement of users in innovation processes is related to the term and concept of **RESPONSIBLE RESEARCH AND INNOVATION (RRI)** that had been emerging in the early 2000s. The principle idea behind this concept is to leave the ivory tower not only to follow a broader communication strategy but especially to build up a common research and innovation strategy with the society. RRI follows the principle to integrate the perspectives of the natural environment and a society's viewpoint in innovation and research processes.

"RESPONSIBLE RESEARCH AND INNOVATION IS A DYNAMIC, ITERATIVE PROCESS IN WHICH ALL STAKEHOLDERS IN RESEARCH AND INNOVATION BECOME MUTUALLY RESPONSIVE AND SHARE RESPONSIBILITY FOR BOTH THE PROCESS AND THE OUTCOME" (RRI tools n.y., p. 8).

RRI is able to show fields of new perspectives and possibilities, ranging from the development of new products to sustainable concepts. Research, innovations and technology resulting from these open up new possibilities for the economy, society, and further every individual citizen, and are considered essential for improving modern life. For example, companies can obtain societal input for innovation strategies and thereby increase its societal relevance. Furthermore, engagement can make policy decisions more transparent, comprehensible, and legitimate as well as it can improve the implementation and effectiveness of innovation policy.

1.1 What does Responsible Research and Innovation mean?

RESPONSIBLE RESEARCH AND INNOVATION (RRI) is a key element of the new European Research Policy, which seeks to foster uptake of RRI by stakeholders and institutions and to implement it as crosscutting theme in Horizon 2020. RRI is based on the following principles:

- **INCLUSIVE** - Involve diverse stakeholders (users, non-governmental organizations [NGOs], etc.) in research and innovation (R&I) processes.
- **ANTICIPATORY** - Researchers and innovators are asked to include new perspectives in R&I and agendas for risk assessment and management.
- **REFLEXIVE** - Researchers and innovators are asked to think about their own ethical assumptions and their role and responsibilities in public dialogue.
- **RESPONSIVE** - Flexibility and capacity to change R&I processes according to public values.

Public engagement is at the heart of all RRI principles aiming at embedding RRI across all areas of science and technology by mapping existing societal engagement with a focus on how and why citizens, stakeholders, civil society organizations (CSOs) and other actors can be engaged in research processes and highlighting how practices could be improved in the future. RRI also seeks to increase engagement practice by inspiring researchers, policy makers and other interested parties to connect science and society (cf. engage2020.eu/).

RRI definitions

RESPONSIBLE RESEARCH AND INNOVATION „SEEKS TO BETTER ALIGN THE PROCESS OF RESEARCH AND INNOVATION AND ITS OUTCOMES WITH THE VALUES, NEEDS, AND EXPECTATIONS OF EUROPEAN SOCIETY. THIS REQUIRES DIFFERENT ACTORS INCLUDING CITIZENS AND THIRD SECTOR ACTORS TO WORK TOGETHER TO COLLECTIVELY REFLECT ON AND DISCUSS THE QUESTION OF: WHAT DO WE WANT RESEARCH AND INNOVATION TO ACHIEVE? WHAT ARE PROMISING PATHS TO ACHIEVE THESE PURPOSES?“ (European Commission's notion of RRI in Horizon2020; cf. PROSO 2018b).

RESPONSIBLE RESEARCH AND INNOVATION „IS A WAY OF THINKING AND DOING THAT GUIDES RESEARCH AND DEVELOPMENT IN ETHICALLY APPROPRIATE WAYS. IT ENSURES THAT SOCIAL AS WELL AS COMMERCIAL BENEFITS ARE HARNESSSED; AND THAT ANY HARM TO THE SOCIAL AND PHYSICAL ENVIRONMENT IS OBIATED OR MINIMISED“ (Wilford et al. 2016, p. 2).

RESPONSIBLE RESEARCH AND INNOVATION is „ A TRANSPARENT, INTERACTIVE PROCESS BY WHICH SOCIETAL ACTORS AND INNOVATORS BECOME MUTUALLY RESPONSIVE TO EACH OTHER WITH A VIEW TO THE (ETHICAL) ACCEPTABILITY, SUSTAINABILITY AND SOCIETAL DESIRABILITY OF THE INNOVATION PROCESS AND ITS MARKETABLE PRODUCTS“ (von Schomberg 2013, p. 63).

Although these definitions slightly differ in the focal objective of RRI, they unanimously stress that RRI includes responsible innovation for and **WITH** society and that engaging societal actors is an indispensable part of responsible research and innovation. Involvement can be pursued for both **DEMOCRATIC REASONS** (citizens having a say on needs, products and innovation agendas) and **INSTRUMENTAL REASONS** (more appropriate results by including societal knowledge, ideas and capacities; higher awareness of science and technology by citizens).

1. 2 Co-Creation

In order to unfold its potential in contributing to achieving more societal sound innovations, RRI needs to be built upon a strong practical component. The approach of **USER CO-CREATION** provides such a framework that helps in applying RRI in business contexts. Co-creation means that companies and users work together and that users have an active role in innovation processes. This requires a participatory understanding of creating innovations that differs clearly from the common industrial practice of designing for users in which users are only seen as customers and future buyers of a product. In principle, co-creation can be defined both on an overall or a business level:

BROAD APPROACH OF CO-CREATION: „(A)ny act of collective creativity, i.e. creativity that is shared by two or more people“, with co-design being „collective creativity as it is applied across the whole span of a design process (...). Thus, co-design is a specific instance of co-creation“ (Sanders/Stappers 2008, p. 6).

BUSINESS FOCUS OF CO-CREATION: „Co-creation is about *joint* creation of value by the company and the customer. It is not the firm trying to please the customer.“ It is about „(a)llowing the customer to co-construct the service experience to suit her context“ and „(j)oint problem definition and solving“ (Prahalad/Ramaswamy 2004, p. 8).

1.3 Design Thinking

Key for any RRI-inspired co-creational innovation process is the availability of methods for creative problem-solving enabling the understanding of people's needs and matching those needs with possible new services or technologies. An outstanding approach for participatory practical and creative problem-solving is the **DESIGN THINKING METHOD**. Design Thinking can be defined as „a discipline that uses the designer's sensibility and methods to match people's needs with what is technologically feasible and what available business strategy can convert into customer value and market opportunity" (Brown 2008, p. 86). It is characterized by the facts that it „engages a person in opportunities to experiment, create and prototype models, gather feedback, and redesign" (Razzouk/Shute 2012, p. 330), and that this „creative process uses visual and tactile impressions more than other methods do (...). One strength of Design Thinking is that it helps to identify the needs that the user isn't even conscious of and is not able to articulate" (Innovations Report 2015).

On the very practical level, there are a broad range of tools that incorporate design thinking elements and can be used in co-creation processes to facilitate a participatory engagement of both product and service developers and users. These tools serve the purposes of finding solutions, structuring information, collecting ideas, assessing impacts, fostering empathy, or learning about needs. In **CHAPTER 4** of this guideline we have gathered a comprehensive repository of tools (**CO-CREATION TOOLBOX**) to be used in co-creation events.

1.4 Challenges for RRI

Given the contents depicted above, RRI entails a couple of challenges at least consisting of the items listed below (cf. for the following PROSO 2018a):

- **CREATE RELEVANCE:** Citizens and users will perceive an engagement process as relevant if the questions and topics to be solved are connected to their own interests, concerns, goals and personal environment.
- **CREATE IMPACT:** Citizens and users will accept an invitation for engagement processes and be a constructive part of the process when they expect the process to have impact.
- **CREATE TRUST AND MUTUAL UNDERSTANDING:** Citizens and users will take an active role in the process when they trust the agendas and organizers of the engagement process and have positive views of other participants.
- **CREATE KNOWLEDGE AND SKILLS:** Citizens and users may refrain from engagement when they fear they lack the necessary knowledge and skills to engage in research or in research and innovation policy.
- **BUILD LEGITIMACY:** Citizens and users may refrain from engagement when they have doubts about the legitimacy of the engagement process or their own involvement.
- **PROVIDE AND SAVE RESOURCES:** Every engagement process needs a necessary amount of time and financial resources.

Engagement in RRI should...

...MAKE A DIFFERENCE.

- ...be tailored to the circumstances and objectives. Involve the right number and relevant people.
- ...be effectively embedded in the relevant policy or decision-making process.
- ...be reviewed and evaluated to improve practice.
- ...be transparent.
- ...be well communicated.
- ...keep those involved informed (feedback to participants).
- ...treat participants with respect.
- ...give priority to participants' discussions, needs and ideas while ensuring that interests do not dominate in RRI processes.
- ...build trusting working relationships.
- ...have integrity (ensuring real commitment, data and privacy protection).

1.5 RRI good practices

Innovation has often been a closed field with only limited role for the users, mostly surveyed in market research. Over the last years, however, the engagement of users in the creation of new innovative products and processes has significantly increased, as demonstrated by the growing numbers of, for example, hackathons and crowdsourcing across Europe. Although these approaches are often carried out piecemeal, there are a lot of good practices in this growing field, like the following shown for inspiration:

- **AMBIACT (GERMANY):** Development of the ambiact (Frenken 2015), a smart meter for social alarm systems. The device is placed between the power outlet and any appliance and generates an emergency call if a connected appliance is not used for a specific amount of time. Provides safety because help is called in situations where people would be incapable to call for themselves. Substitutes care phones and reduces the number of false alarms triggered by old people forgetting regular handling of their care phones. Ended up in the development of a patented product currently sold by oldntec. Johanniter considered cooperation with technical partners as fruitful and formed a business development partnership. Whole process in accordance with RRI principles: Continuous societal engagement/user inclusion by field trials and interviews conducted over a long term. High transparency of field trial results. Gender equality and inclusion of disabled people were taken into account. All actions involving private persons were approved by a local ethics committee.
- **MY BRAIN BOOK (UK):** Development of a web-based system called My Brain Book, in which care plans for dementia patients are collaboratively created with professionals, carers and the patients themselves (Savitch 2015). System is designed in a simple and intuitive way so it can be handled by the patients. Broad range of engagement activities, including a dedicated engagement session for people with dementia, background focus groups, design workshops and prototype testing with potential users. Inclusion of a usually marginalized group in society, thus an example of how research and innovation within industry can foster equality in the wider society. The voices of people with dementia and their carers are seen

as vital in the next phase of product development, in an area which is often dominated by professional views only.

- **T-CITY FRIEDRICHSHAFEN (GERMANY):** Development of more than 30 project ideas in total to advance the information and communications technology (ICT) profile of Friedrichshafen in different sectors¹ with the vision to transform Friedrichshafen into a smart city (Bolz 2015). The two projects presented in the case study are a home-telemonitoring system of blood pressure ["PressureTel project"] and a home-based touchscreen device for the use of a range of services concerning the daily routine ["Self-determined living project"]. Strong commitment to societal engagement: Whole initiative was tailored towards citizen input, the two projects presented closer in the case study serve as good examples of involvement of end users in the design of new systems. T-City Friedrichshafen is considered as one of the largest corporate-citizenship cooperations worldwide. The citizens of Friedrichshafen in general, as well as local institutions in particular like businesses, kindergartens, schools, hospitals etc., were involved.
- **HAO2'S 3D VIRTUAL LEARNING PLATFORM (UK BASED):** HAO2 is a social business in the informatics sector that develops 3D virtual environments (Kupper et al. 2015). The company set up the 3DNovations Hub, a virtual learning platform on which people with autism can receive training to prepare for employment, improve their communication skills and their confidence. The insights into the design of the platform come from people with autism themselves. Through a process of user-led design, they participate as researchers and citizen researchers rather than just as a focus group. The company won several prizes and became extremely successful, growing from a small start-up to a company with contracts worldwide. The programs have 100 % completion rate and over 50 % of participants move into employment or volunteering afterwards. The case demonstrates several RRI principles like diversity, inclusion, engagement, responsiveness and outcomes that meet the needs of society. It shows that RRI can contribute to the development of innovative products and that commercial viability and socially desirable outcomes do not necessarily have to contradict each other.
- **SMEDPACK (SWEDEN):** Collaborative project with the aim to prevent counterfeit medicines from entering the legal distribution chain by developing concepts for secure pharmaceutical packaging (Kupper et al. 2015). A large number of new packaging designs has been tested by users in different environments. Stakeholders have developed new marketing channels and business partnerships as well as logistical solutions. Meeting high standards of diversity and inclusion: Designs were developed so the ill and elderly can easily handle it. Consumer focus groups were asked on their views on packaging, researchers from different disciplines were consulted. The consortium has brought together all stakeholders in the value chain and served as a forum, which has helped everyone understanding each other's concerns and perspectives. Expressed concretely, those who are more constrained by current practices and legislative restrictions were balanced by those who feel freer to be visionaries.
- **THE BLUEPRINT FOR CHANGE PROGRAMME (DENMARK):** Core of the programme is the belief that a healthy economy, environment and society are vital for the company's success ("Triple Bottom Line" business principle) (Kupper et al. 2015). The programme facilitated eight case studies on diabetes-related challenges, focusing on how creating shared value has improved diabetes prevention and care. For example, the company established a number of initiatives in Indonesia increasing diabetes knowledge among hospitals and local doctors. The case studies are good examples for how RRI standards in business practice can promote sustainable, profitable business as well as benefits for society. Furthermore, the lesson can be easily used by other businesses. RRI principles are met in form of diversity and inclusivity (considering the needs of patients and care providers),

¹ Learning and Research; Mobility and Transport; Tourism and Culture; Citizens; the City and State; Business and Work; Health and Support.

transparency (communicating their business principle on various ways) and responsiveness (adapting its strategies according to local needs and cultures).

- **REHAB ANGEL (UK):** The output of the collaboration is the development (and sale) of the "Rehab Angel", a flexible angle device used mostly for knee rehabilitation purposes (Richards n.y.). The case study illustrates some RRI action points: The company cooperated with a range of societal actors to bring the product to the market, namely end users (patients), clinicians and university researchers, thus stands for societal engagement. The knowledge transfer from university researchers to the company represented informal science education as well as broadening access to scientific results. Furthermore, the development phase at the university was governed by research ethic procedures.
- **INDUSTRY STUDY FOR PERSONAL HEALTH MONITORING (UK):** Identifying stakeholder (patient groups, healthcare professionals) needs for formulating nine concrete recommendations on how to address their ethical concerns when it comes to developing Personal Health Monitoring (PHM) services and devices (Mittelstadt 2015). Interviews were conducted that focused around the use of current, existing PHM devices in the UK. As a whole, this case is a good example of ethics foresight through public engagement. Through the study itself, awareness of ethical issues has been raised among potential users of the devices. Dissemination presentations and case study reports are thought to influence developers and service providers in the UK when it comes to improve existing or future systems' acceptability to users.

2. Successful User Engagement in RRI: Conceptual and Practical Key Factors

2.1 Conceptual key factors for designing successful RRI processes

In the following, we present a broad range of conceptual factors that need to be addressed in order to ensure the success of RRI processes in terms of meeting user as well as company needs and expectations. In setting up this list of factors, we rely upon insights derived from participatory product development as well as citizen involvement procedures (Hoffmann 2012; Hoffmann et al. 2017).

Early involvement

The right time to get users involved depends on the goal of the innovation process. Ideally, it starts at a very early stage, when developers can gain insights of the users' needs and preferences. That way both parties can learn from each other and are able to create mutual trust.

Sustainable involvement

Sustainable involvement means that users are involved throughout the entire innovation process. That can happen either by single or accompanying involvement. It is important for both ways that all participants are informed about new developments and the outcome of the process.

User roles

Analytically it is possible to separate innovation processes into different phases. As the following four-phase example points out, for each of these steps user involvement may pursue specific objectives:

- **Strategy development:** In this phase, users provide values and attitudes from which the company can gain insights into societal trends or changing values.
- **Idea generation:** In this phase, users might be a source of ideas resulting from their needs, problem perceptions or utilisation experiences.
- **Selection and specification of ideas:** This phase strives to further detail ideas as a precondition for their realisation. Users' needs, ideas and utilisation as well as technical knowledge may contribute to the specification of ideas.
- **Realisation:** In this phase, the product, service or system development will be finalized and ends with market launch. On the one hand, users' utilisation and technical knowledge are relevant innovation resources. On the other hand, users can test prototypes or assess products.

Who is a lead user?

LEAD USERS „are users whose present strong needs will become general in a marketplace months or years in the future. Since lead users are familiar with conditions which lie in the future for most others, they can serve as a need-forecasting laboratory for marketing research. Moreover, since lead users often attempt to fill the need they experience, they can provide new product concept and design data as well” (von Hippel 1986, p. 791).

Role of the company

Of vital importance for the success of user integration is the willingness and motivation of the company to run an innovation process that is open for external contributions. Fundamental caveats against ideas raised by external actors, such as users or citizens, in many cases prevent their adoption and hamper the company's innovativeness. In co-creation workshops, the company representatives should engage in eye-level discussions with users and consider them as relevant partners being able to provide significant contribution. In order to enable a broad diffusion of user inputs into the company's innovation processes, all relevant departments of the company should be involved (e.g. corporate strategy, research and development, sales, marketing). But one always should be aware of possible communication barriers since company representatives and users will probably argue from a different knowledge basis.

Clear mandate

Because it is not up to the users or citizens to take the final decision for an innovation, they have to be given a clear mandate. In most innovation processes, the task will be to provide specific recommendations about ideas or products. Whoever decides about whether these recommendations will be accepted or denied, must be willing to deal with them and consider them in the decision-making process.

Process Criteria

NECESSARY RESOURCES - It is crucial that the sponsors of the process show commitment and provide the necessary resources (e.g. information; human, financial and time resources).

TASK DEFINITION - It is important to manage expectations and clarify from the start the scope of the participatory process.

STRUCTURED DECISION-MAKING - Examining the reasons behind a decision and documenting the process of reaching it and its outcome is likely to increase transparency and perceived credibility of the process, as well as its efficiency.

COST-EFFECTIVENESS - The scale of the participatory method should be proportionate to the scope of the decision. A large citizens' assembly might be inappropriate to a minor decision.

Seriousness

That may sound trivial, but this is one of the most crucial success factors. All participants must take the process serious. That means, for example, that the decision makers communicate when they are going to decide, how users' contributions will be taken into account and what kind of feedback will be given. It belongs to the key tasks of the facilitators to ensure that all participants are well informed about, and do respect, the seriousness of the co-creation process.

Decision-making scope

What is the decision-making scope? Shall the users just be asked about their opinions or recommendations, or will they be endowed with decision-making competencies? That must be very clear and well communicated before starting the process. Otherwise the risk of misleading or disappointing the users is high. In order to characterize users' decision-making competencies in the RRI process, one basically can differentiate between consultation and co-decision:

- Consultation: Exchange of views between company and users, but decision-making power exclusively lies with the company.
- Co-Decision: Users are actively involved and take part in decision-making processes.

Feasibility and integrability

It must be ensured that the outcomes of the process are feasible and integrable in the innovation process. That is why one should carefully think about which outcomes of the process are suitable for the innovation process.

Fairness

It is important that each participant has the same chance to have her or his say. Therefore, the process must be designed in a way that everybody – irrespective of age, sex, income – can participate. It is the facilitator's task to ensure a proper implementation of this requirement.

Transparency

It must be ensured that all participants are provided with clear and barrier-free information. Only this way it can be guaranteed that everybody can communicate and meet as equals. Beyond addressing immediate participants, RRI conductors may widen the scope of information recipients and give interested people in general the opportunity to inform themselves about the process and the innovation.

Involvement of the affected parties

Successful co-creation processes depend crucially on involving participants that do represent the social groups most likely being affected by the outcomes of the innovation process. That can be more parties than just the users. It is not necessary to have all parties in the same workshop. But in advance one should consider who may have an interest which has to go along with a decision or who could be affected.

Participants' attitude

That is one of the most crucial key factors for success. Only if all parties participate with a curious, constructive, respectful and honest attitude, viable solutions can be found.

About representativity

Representativity can basically be divided into qualitative and quantitative approaches. Quantitative approaches follow the idea of statistical representativity, whereas qualitative representativity aims at the representation of all relevant arguments (cf. Alcántara et al. 2016). Most participation processes follow the latter understanding: It is stated that comprehensive representativity in participation processes is achieved when the participants of a process represent all relevant social groups for a specific issue (cf. Nanz/Fritsche 2012). Thus, before deciding for the way of recruitment, you have to ask yourself who are the relevant actors, i.e. which groups you want to have represented in the workshops – depending by your topic.

Basically, it is agreed upon that representativity is necessary to consider different opinions in participatory processes, give legitimacy to the process and raise the efficiency of decision-making. Nevertheless, the necessity of representativity is strongly dependent by context: Especially concrete/specialized issues, as we cover in the LIV_IN Labs, allow for a more selective choice of participants – in contrast, for example, to issues with national scope (cf. Alcántara et al. 2016). In these cases of selective choice, representativity can be maintained by identifying all relevant target groups and then inviting participants' representative for those groups ("contextual representativity").

2.2 Practical key factors for conducting successful RRI processes

Careful preparation is essential for success. Therefore, the initiators of an RRI process should consider the following questions as a basis for designing the innovation process.

What are the goals of the user involvement?

Involvement can have different objectives, ranging from information to collecting ideas and opinion polling to advise-seeking and co-creation. It should be clear for the process owners what the goal is, because the goal of the process strongly influences the selection of suitable methods, participants, timelines, etc. Also, for the participants it must be clear what their role is and what is being expected of them. A crucial part of this "role clarity" consists of endowing participants throughout the entire workshop with distinctly defined tasks to perform. Preferably, these tasks should have direct links to participants' daily lives.

What is the timeline?

The best idea is to adopt a backcasting approach and plan the innovation process "from the end" and then set up the timeline. Invitations with provided information, for example, need some time to be prepared. Keep in mind that they include a registration dead line. That enables you to adjust the concepts or invite more participants if needed.

Who gets involved?

As described above, one should carefully consider who is going to be affected. Also, people who are known for being very skeptical might be involved to get a broad range of opinions when discussing an innovation. In general, the labs will engage lead users in the co-creation process, rather than aiming for societal engagement that is representative in demographic characteristics.

How is the composition of the groups?

Depending of the purpose of the workshop, one can think about different compositions of participants. In an early stage of co-creation, where the goal is to get better insight of the needs, it can be sufficient to conduct workshops with lead users or citizens, respectively. The deeper you dive into co-creation, the more an involvement of expert knowledge will be helpful. The role of the experts can vary. Being participants providing the expertise required, so the others can pose questions to stay productive or being in a more active role, to develop innovations with the participants. Keep in mind, that users or citizens are also experts on their own! They can provide a broad range of knowledge, from everyday to empirical knowledge. They can make contributions as experts acting in their own cause.

When mixing the two kinds of participants, make sure they all share a common knowledge base by informing or educating the citizens. It is also part of setting up a safe environment for the workshop, where the facilitator makes sure that everybody is heard and feels free to ask questions. Bringing experts and "experts on their own" together can generate a mutual understanding, learning effects and ensure transparency.

Although there might be an interest of some lurkers being in the workshop, make sure that there are not too many of them. A workshop with 10 participants and 6 lurkers is not a safe environment. The participants would feel more under investigation than in a trusting and creative atmosphere.

How can productive working groups be built up?

For a productive atmosphere the group should not consist of more than 15 participants. If there are more, it is possible to build different groups and design the process with a switch between plenary and workgroup sessions. In general, there should not be more than two lurkers at all.

Should I get a professional facilitator?

The benefits of professional facilitation are obvious. A trained facilitator can ask the right questions to provide a constructive and creative working flow and will ensure that everybody has the opportunity to participate. A facilitator can also help designing the workshop and ensures a target-oriented and effective process.

How to invite?

There are three existing types of invitation: open invitation, focused invitation and random sampling. The kind of invitation depends on the goal of the process. There always should be a registration dead line. If you have too many participants, you can draw a lot to choose. This must be communicated in the invitation. Very often trust is built by providing transparent information about "who is involved and how". Please consider that the character of an invitation between experts and lead users can vary. While for the experts the tone should be more formal, users could be deterred by a too sophisticated language. For them the benefits of their engagement should be focused.

Should I provide any incentives?

Yes. Keep in mind that you want something from the participants (knowledge, time, etc.) and that should be rewarded. At least the travel costs should be covered.

Providing money is the easiest way to give incentives. But it should be carefully considered. On the one hand it allows ensuring the participation of people who are not intrinsically motivated, but provide a lot of knowledge you need (e.g. low-income groups). On the other hand, the incentives should not be that much, that the people are just participating with a subjective focus on the money. A rule of thumb can be 50 euros for a 3-hour workshop.

Maybe there are even more incentives, like vouchers, a free breakfast/lunch/dinner, etc. Or if you have a specific target group, like single mothers, you can think about having a child care for the time running.

What is the decision-making scope?

The scope should be defined by the process owners and the decision makers in advance and be communicated with the mandate to the participants for avoiding disappointment. The scope can vary from counsel to decision making.

How can transparency be ensured?

There are three stages of information: before the process, during the process and after the process. The information provided must be clear and barrier-free. During the process visualization can help to keep everybody "on track". That can be done by writing important aspects down on a flipchart, on cards or writing a protocol via screen. In discussions the names of the participants are not given in the protocol. After the process a result protocol is given to the participants. It is also important that other parties can inform themselves.

How to achieve a consensus?

If the scope includes decision-making there are different ways of how to achieve that. If a consensus cannot be achieved there is always the possibility of a "consensus on dissent". Showing the diversity of opinions and suggestions can be a helpful insight for decision-makers. It draws a picture which group of persons was for or against a specific topic. By that, individual issues can be discussed separately from the complex as a whole and individual solutions can be found. A simple vote is also possible and shows the distribution of opinions.

What happens with the results?

It is not very satisfying for the participants if their work is "disappearing in the drawer". Therefore, it must be very clear at the beginning how the results will be taken into account. Even if it is decided that the results are not used right now, the participants should be informed with a proper justification. Also, patent rights must be clarified in advance.

How much are the costs?

The total costs consist of direct cost (facilitation, catering, space rent) and indirect costs (staff involved). The biggest effort is the personal interaction with the participants and it is crucial for mutual trust. And do not forget a good catering.

How is a workshop structured?

There are roughly four phases of a workshop. The first one is the **warm up**, where the participants can tune into the topic, the agenda of the workshop and get to know each other. Its purpose is to foster curiosity and create a good working atmosphere. Elements can be the welcoming words and an introduction of the participants. The second one is the **orientation**, where the topic is presented in depth with all its various aspects. The "real work" begins in the third phase **working**, where the participants dive into the topic and work on it. The last one is the **conclusion**. Here is time to reflect on the workshop and get to know the feedback of the participants.

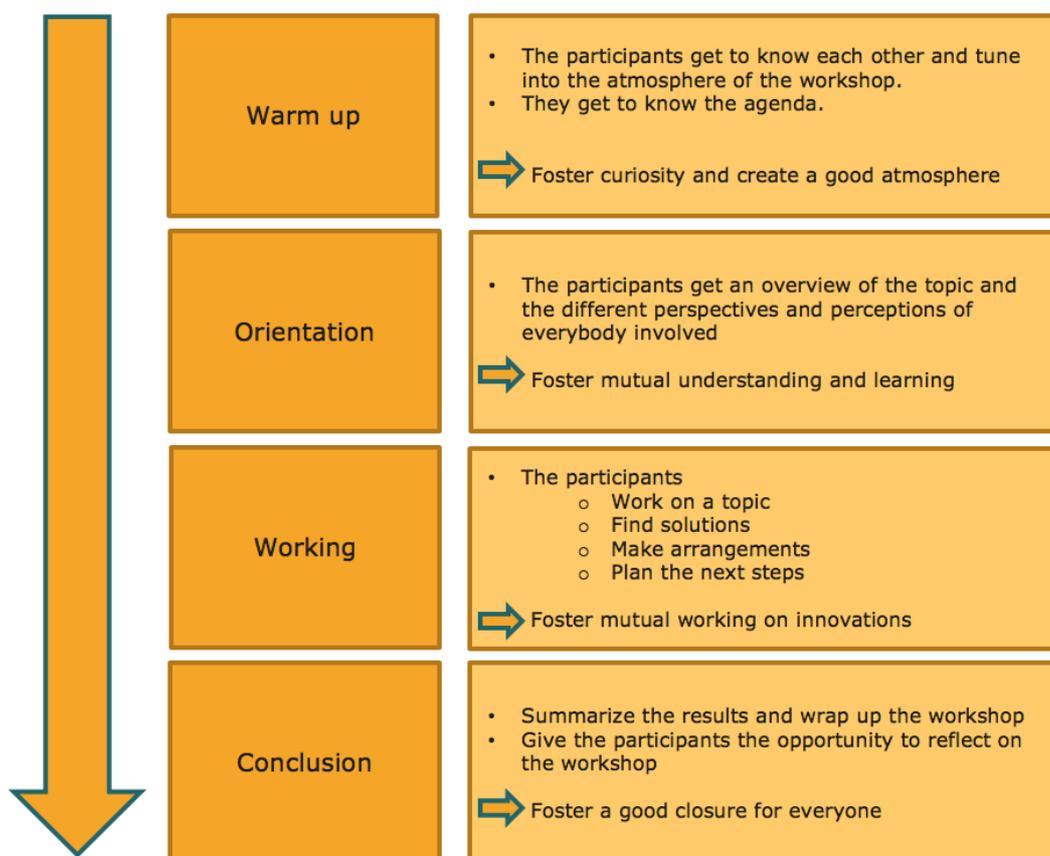


Fig. 1 Structure of a workshop. Illustration based on Straub et al. 2009

2.3 Co-creation and accessibility

Co-creation workshops must be accessible for users with disabilities. Particularly when co-creation takes place in an ICT environment, there are a lot of requirements to be taken into account to make sure that disabled people have equal opportunities to participate. This chapter does not promise to provide an exhaustive guideline how to enable a non-discriminatory access for those with disabilities. Rather, the following should raise awareness among workshop organisers for this issue by pointing out to some key topics.

Accessibility of ICT/Web content

There exist principles of accessibility that have to be met when creating ICT/web content for disabled people in order to avoid that users with disabilities will not be able to use the Web (cf. for the following WCAG 2018). Contents have to be

- **PERCEIVABLE:** Users must be able to perceive the information being presented (it cannot be invisible to all of their senses)
- **OPERABLE:** Users must be able to operate the interface (the interface cannot require interaction that a user cannot perform)
- **UNDERSTANDABLE:** Users must be able to understand the information as well as the operation of the user interface (the content or operation cannot be beyond their understanding)

Subordinate to those principles are so-called success criteria within each principle, which can always be answered in a simple yes/no scheme. Checking/answering those success criteria allows workshop planners to make a judgement about up to what extent ICT accessibility in its different dimensions (perceptibility, operability, understandability) is realized. The most important success criteria within the accessibility principles are presented below.

Perceptibility

- **TEXT ALTERNATIVES:** Provide text alternatives for any non-text content. Through this, it can be further changed ("translated") into other forms disabled people may need (like large print, braille, speech, symbols or simpler language).
- **ALTERNATIVES FOR TIME-BASED MEDIA:** This refers to media that is dependent on technology and has a durational dimension (like videos, films, slideshows etc.). For prerecorded audio-onlys, a text alternative should be presented, for pre-recorded video-onlys, there should be a text alternative or a sound track with equivalent information. For recorded synchronised media (video + sound), captions and audio description should be provided. Also live synchronised media content should be tried to be "translated" via captions or sign language and audio description, if possible.
- **ADAPTABLE CONTENT:** When creating content, try to do it in a way so that it can be presented in a different (possibly simpler) way without losing its information or structure. For example, information, structure and relationships conveyed through a presentation should be possible to be programmatically determined to be available in text.
- **DISTINGUISHABLE CONTENT:** It should be made easy for users to separate content. Talking about visual content, the main point is in general to make it easy to separate foreground from background. An important point is that color should never be the only visual means of conveying information. For automatically played audios longer than 3 seconds, there must be a mechanism to stop/pause the audio or regulate its volume. For visual presentations, there exist further detailed instructions in accessibility guidelines referring to contrast (contrast ratio of at least 4.5:1), resize (possible up to 200 % without loss of content or functionality) etc. If anyhow possible, text should be used to convey information rather than images of text (with logotypes being an important exception).

Operability

- **KEYBOARD ACCESSIBILITY** for all content. There shall be no time restrictions for keystrokes and display navigation must be possible with the keyboard.
- **ENOUGH TIME:** It should be made possible for participants to either turn off or adjust (by ten times the length of the default setting) or extend (20 seconds before the end for at least 10 times) time limits that are set by contents.
- **PAUSE, STOP, HIDE** must be possible for all moving, blinking or scrolling information. Same is valid for auto-updating information.

- **EPILEPTIC SEIZURES:** All content must be designed in a way that epileptic seizures cannot be triggered. No content with flashes more than three times in a second, or the flash is below the general flash and red flash threshold.
- **NAVIGABLE CONTENT:** When navigating through a web page (or using ICT instruments in a workshop similar to a webpage), pages should always have titles for topic or purpose. Mechanisms should be available to bypass blocks of content that are repeated on multiple pages. The purpose of a link should be clear from the link text alone.

Understandability

- **READABLE/UNDERSTANDABLE CONTENT:** The language of pages and of parts should be able to be programmatically determined, with solutions for unusual words or abbreviations. Furthermore, texts should be written in the clearest and simplest way that is appropriate. Generally spoken, this means texts should not require reading abilities more advanced than the lower secondary education level.
- **INPUT ASSISTANCE:** Help users avoid and correct mistakes. When an input error is identified, the item that is in error should be identified and the error described to the user in text.

Physical accessibility of co-creation workshops

Workshop organisers should pay attention to provide a clear floor or ground space. When changes in floor level are unavoidable, they should be ramped with a slope (no steeper than 1:48). In an ICT operating area (cf. for the following ETSI 2018), enough space should be given to the participants (minimum dimension of 1.22 m by 0.76 m recommended). When information is provided on a display screen in this area, it should be legible from a point located 1.015 m above the floor (so it can be read by people in a wheelchair). At least one full side of this space should be unobstructed. Consider aspects of knee and toe clearance. Essential controls should not be located higher than 1.22 m and no lower than 0.38 m above the floor.

Where a control requires grasping, pinching, or twisting of the wrist, an alternative for this operation shall be provided. Same is valid for controls that require force greater than 22.2 Newton.

When keys, tickets, fare cards etc. are needed for the use of ICT, a "tactilely discernible" alternative shall be provided (this could be Braille instructions, for example).

3. Evaluation

The success of co-creation workshops is not only depending on a careful preparation or a suitable selection of participants, rather it also hinges on a comprehensive evaluation of the engagement process that provides insights on its strengths and weaknesses and improvement potential. In the following, we outline an overview of the **GENERAL CRITERIA OF A PROCESS-ACCOMPANYING EVALUATION OF ENGAGEMENT PROCESSES.**

Fair and well-balanced selection of participants

Beside the reconsideration of how the participants were selected (self-recruitment, by direct communication etc.), a second key factor is if interested potential participants had the opportunity to be part of the process following principles of fairness.

Competence-building and new learning options in the engagement process

Does the process provide participants with information material and important background information? Do participants have the opportunity to revise preliminary results and spontaneous ideas during the process? Do the participants have a chance to build up knowledge and competences while the process? Which methods and rules are the bases for acquiring information?

Quality of the process

The process needs a well-defined relationship between organisers and participants as well as clear rules ensuring the quality of deliberative formats and methods.

Quality of facilitation

Facilitators should ensure that everybody could be part of the process as much as she or he wants to be part of the process and could be part of the process. Further, every participant should be treated fairly and equally, regardless of their function or status.

Transparency of results

An engagement process needs indeed a close space in which the participants are able to discuss for example their feelings or expectations, but regarding the results a process has to be transparent. How did the group of participants come to contents and results in this specific format? Results and public information can help to awake the interest of not-involved people and built up appreciation of problems.

Earliness, consistency and flexibility

Potential participants should be involved in the process at an early stage to create and maintain an open space in forming the final workshop design. An engagement process needs further a continuous and flexible setup in which the workshops could react to the needs of their participants. Existing financial resources and time management should be considered over the process, too.

Time frame

It takes time to achieve quality of a process and in results. A constructive culture of engagement needs to grow a while before it is enriched by an appreciative attitude and communication between all involved actors. To reflect experience and results of each different part of the process as a learning tool, the conceived process needs an appropriate time frame in general to discuss consequences for the next steps.

Management of expectations and feedback culture

The whole process needs to be based on clearly formulated objectives and an unambiguous mandate. At the beginning of the process it also needs a transparent communication process which space of influence participants have on the engagement process. Both the freedom of design as well as the borders of the framework need to be mediated.

Contentedness with being part of the process and the results

How content are the participants with the results of the process? How do they assess their own contribution on the common results? How do the results indicate the ratio to the effort done in the process?

4. Co-Creation Toolbox

Co-creating innovations with users that meet the challenges of RRI needs methods enabling companies to facilitate eye-level interactions between company representatives and users. The following toolbox entails a broad range of methods appropriate to support co-creation processes. They are assorted according to their possible purposes of use, i.e. finding solutions, structuring information, collecting ideas, assessing impacts, fostering empathy, and learning about needs. If a tool fits more than one purpose, it will accordingly listed repeatedly. Furthermore, each method will be characterised by a brief description and an assessment regarding its suitability or potential disadvantages. Finally, the sources indicated for each method provides possible users with the opportunity to learn more about a specific tool.

| Name | Description | Suitability | Non-suitability or potential disadvantages |
|--|---|--|--|
| FINDING SOLUTIONS | | | |
| Nagging | Group is motivated to complain about existing products and solutions, then to present solutions for the criticised characteristics in a next step. | Suitable for learning about the most urging weaknesses of the product from users' perspective. | |
| <i>Source:</i> http://www.lead-innovation.com/blog/ablauf-lead-user-methode | | | |
| Flower of Thoughts | Similar to mind-mapping, however the "flower of thoughts" is usually created in group work. Each association becomes a "petal" of the flower. Some of the more extraordinary petals are chosen and participants shall make an effort to show how the petal/word can be fit with a solution to the question. | Structuring information & knowledge, giving an overview, generating a common knowledge base + generating first ideas about possible solution ways. | |
| <i>Source:</i> DesignThinkersAcademy continuing education material | | | |
| Walt Disney Method | An issue is discussed out of three perspectives consecutively: Single participants/teams of participants take the role of the "dreamer" (1), the "realist" (2) and the "critic" (3). Each participant should have taken one role at least for one time to allow a change of perspectives. | Through the specific order of "speakers", the main purpose of the Walt Disney Method is to generate ideas that are ambitious but viable as well. | |
| <i>Source:</i> https://xn--kreativittstechniken-jzb.info/walt-disney-methode/ | | | |
| Interactive Backcasting | The lead users choose one or several future images for their analysis. In "working backwards" to the present situation, they interactively explore which interventions are needed to realize this future, which opportunities to be taken, obstacles to be overcome etc. | Suitable method to shape the diversity between future and present, but also between the different views and perceptions of lead users. | |
| <i>Source:</i> King Baudouin Foundation: Participatory Methods Toolkit | | | |

| Name | Description | Suitability | Non-suitability or potential disadvantages |
|---|--|---|--|
| LEGO Serious Play | Participants answer questions related to an ongoing project, task or strategy by building symbolic and metaphorical models of their insights in LEGO bricks and present these to each other. | Developed as a sophisticated means for groups to share ideas, assumptions and understandings; to engage in dialogue and to work out solutions to real problems. | |
| <i>Source:</i> Frick, Tardini & Cantoni: White Paper on LEGO®SERIOUS PLAY® | | | |
| Graphic Recording | Live visualization and summary of group or plenary discussion results via a professional drawer. | Promoting discussions by making results more communicable at the workshop itself and for documentations afterwards. | |
| <i>Source:</i> http://www.lead-innovation.com/blog/ablauf-lead-user-methode | | | |
| Conceptual Landscape | Participants are asked to diagram, sketch or map the aspects of abstract social/behavioral constructs. | Suitable for giving insight into peoples' perception of the issues (e.g. morally, ethically) evolving around the product design. | |
| <i>Source:</i> IDEO Method Cards, http://www.gillianhayes.com/Inf231F12/wp-content/uploads/2012/10/IDEOMethodCards.pdf | | | |
| Rough Prototyping | Quick method to build prototypes using all the objects and material available in that specific moment and location. Elements are used to simulate the product's service components. | This tool supports the visualization of ideas and aims to assure that all workshop members are talking about the same thing. Furthermore it contributes to make the design process more interactive and concrete. | |
| <i>Source:</i> Service Design Tools, http://www.servicedesigntools.org/tools/42 | | | |
| Collage | Participants are asked to build a collage from a provided collection of images. They shall also explain their chosen arrangement and the significance of the images. | Useful method to illustrate participants' understanding and perception of issues; furthermore helpful for verbalizing complex themes. | |
| <i>Source:</i> IDEO Method Cards, http://www.gillianhayes.com/Inf231F12/wp-content/uploads/2012/10/IDEOMethodCards.pdf | | | |

| Name | Description | Suitability | Non-suitability or potential disadvantages |
|--|--|---|---|
| Pocket Charts | "Pockets" made of cloth, paper or cardboard are attached to a poster-sized piece of paper or cloth. Workshop participants arrange rows and columns of the pockets into a matrix; drawings serve as captions for the columns. Using the chart as an aid, participants draw attention to specific elements through a 'voting' process. | In general a tool with investigative/explorative aims. The combination of activities in pocket chart exercises has proven to be successful for generating participation and consensus in workshop settings. | |
| <i>Source:</i> King Baudouin Foundation: Participatory Methods Toolkit | | | |
| STRUCTURING INFORMATION | | | |
| Mind-Mapping | Collecting key concepts and its relations to a previously defined topic by a drawn "tree" or "map" with the core issue in the centre. | Structuring information & knowledge, giving an overview and possibly generating a common knowledge base over a complex topic. | High level of complexity reduction. Mind maps capture individual/subjective impressions that can differ much. |
| <i>Source:</i> King Baudouin Foundation: Participatory Methods Toolkit | | | |
| Flower of Thoughts | Similar to mind-mapping, however the "flower of thoughts" is usually created in group work. Each association becomes a "petal" of the flower. Some of the more extraordinary petals are chosen and participants shall make an effort to show how the petal/word can be fit with a solution to the question. | Structuring information & knowledge, giving an overview, generating a common knowledge base + generating first ideas about possible solution ways. | |
| <i>Source:</i> DesignThinkersAcademy continuing education material | | | |
| COLLECTING IDEAS | | | |
| Flower of Thoughts | Similar to mind-mapping, however the "flower of thoughts" is usually created in group work. Each association becomes a "petal" of the flower. Some of the more extraordinary petals are chosen and participants shall make an effort to show how the petal/word can be fit with a solution to the question. | Structuring information & knowledge, giving an overview, generating a common knowledge base + generating first ideas about possible solution ways. | |
| <i>Source:</i> DesignThinkersAcademy continuing education material | | | |

| Name | Description | Suitability | Non-suitability or potential disadvantages |
|--|---|--|--|
| (Structured) Brainstorming | Collecting a quantity of (diverse) ideas, following a structured, turn-based framework. | Especially suitable for the beginning of a creative problem solving process because of the vast amount of ideas collected. Prior to further possible steps like scenario analyses, problem solving, decision-making or planning. | Less suitable for highly specific topics, when no specialized knowledge is available. Ideas mentioned in the beginning may influence the ongoing process and hamper creativity. A minimum level of mutual trust between the participants is required for an open exchange. |
| <i>Source:</i> https://xn--kreativittstechniken-jzb.info/brainstorming/ ; King Baudouin Foundation: Participatory Methods Toolkit | | | |
| Brain Writing | Similar to the (structured) brainstorming, but the collection of ideas happens in written form & individually. Papers are then switched and new ideas added. Varieties of brain writing are the "collective notebook" or "6-3-5-method", for example. | Advantage towards the (oral) brainstorming may be that participants are not influenced by each other. Also, the thinking process is not disturbed because of the silent work. | Like all brainstorming tools, less suitable for highly specific topics when no specialized knowledge is available. |
| <i>Source:</i> DesignThinkersAcademy continuing education material | | | |
| Futures Wheel | Actually a way of structured brainstorming: Name of a trend/event is written in the middle of a paper and small spokes are drawn from the centre. Primary impacts are written at the end of each spoke. Secondary impacts of each primary impact form a second ring of the wheel. | Suitable for collecting and visualizing the range of possible impacts following a future development. | Like all brainstorming tools, less suitable for highly specific topics when no specialized knowledge is available. |
| <i>Source:</i> King Baudouin Foundation: Participatory Methods Toolkit | | | |
| Walt Disney Method | An issue is discussed out of three perspectives consecutively: Single participants/teams of participants take the role of the "dreamer" (1), the "realist" (2) and the "critic" (3). Each participant should have taken one role at least for one time to allow a change of perspectives. | Through the specific order of "speakers", the main purpose of the Walt Disney Method is to generate ideas that are ambitious but viable as well. | |
| <i>Source:</i> https://xn--kreativittstechniken-jzb.info/walt-disney-methode/ | | | |

| Name | Description | Suitability | Non-suitability or potential disadvantages |
|---|---|--|---|
| Six Thinking Hats | In a group of 6 discussants, each tries to argue via a specific way of thinking, symbolized by a coloured hat he/she wears. The basic directions are: 1) facts 2) emotions 3) judgment/caution 4) logic 5) creativity and 6) control. Each role should have been taken by each participant at least once. | The method makes it possible to judge or improve ideas from different perspectives. Controversial ideas can be expressed without the danger of personal insults because of the role game character. Also, the characters' speaking can be ordered or excluded strategically to aim at a specific goal. | |
| <i>Source:</i> https://xn--kreativittstechniken-jzb.info/die-6-denkhute-von-de-bono/ | | | |
| Super Hero | Participants make an inventory of famous super heroes and deliberately choose one. They explore his skills and special talents, then empathize with him with the underlying question: "How would I, as super hero xy, solve this problem?" | Method to gather probably extremely unconventional approaches. These can initiate creative thinking processes into new directions. | |
| <i>Source:</i> DesignThinkersAcademy continuing education material | | | |
| Scale Modeling | Use of scaled architectural model components to design spaces with the lead users. | New, before unknown issues may arise and underlying needs of lead users may come to light. | Seems more reasonable in topics that have a spatial aspect. |
| <i>Source:</i> DesignThinkersAcademy continuing education material | | | |
| Card Sort | Lead users name possible features, functions or design attributes on separate cards and are asked to organize them spatially in a way that makes sense to them. | The lead users' "mental models" of the device/system are revealed, along with expectations and priorities about the intended functions. | |
| <i>Source:</i> IDEO Method Cards, http://www.gillianhayes.com/Inf231F12/wp-content/uploads/2012/10/IDEOMethodCards.pdf | | | |

| Name | Description | Suitability | Non-suitability or potential disadvantages |
|--|---|--|--|
| Morphological Analysis | Includes several steps like problem formulation/definition, identification of all elements required for a solution, evaluation of the outcome, in-depth analysis of best possibilities. The core of the method is a multidimensional matrix, the 'morphological box'. | Used to obtain an overall perspective of possible solutions. Facilitates a systematic analysis of a topic as well as thinking laterally about alternative, creative ways of meeting a challenge. | High complexity. Quite profound method which covers many aspects at once. |
| <i>Source:</i> King Baudouin Foundation: Participatory Methods Toolkit | | | |
| ASSESSING IMPACTS | | | |
| Futures Wheel | Actually a way of structured brainstorming: Name of a trend/event is written in the middle of a paper and small spokes are drawn from the centre. Primary impacts are written at the end of each spoke. Secondary impacts of each primary impact form a second ring of the wheel. | Suitable for collecting and visualizing the range of possible impacts following a future development. | Like all brainstorming tools, less suitable for highly specific topics when no specialized knowledge is available. |
| <i>Source:</i> King Baudouin Foundation: Participatory Methods Toolkit | | | |
| Long-Range Forecasts | Participants are asked to develop scenarios that describe how social/technological trends might influence people's behavior and the use of a specific product, service or environment. | Predictions and reflections about future changes in behavior, industry or technology can help participants to understand the implication of design decisions during the development process. | |
| FOSTERING EMPATHY | | | |
| Walt Disney Method | An issue is discussed out of three perspectives consecutively: Single participants/teams of participants take the role of the "dreamer" (1), the "realist" (2) and the "critic" (3). Each participant should have taken one role at least for one time to allow a change of perspectives. | Through the specific order of "speakers", the main purpose of the Walt Disney Method is to generate ideas that are ambitious but viable as well. | |
| <i>Source:</i> https://xn--kreativittstechniken-jzb.info/walt-disney-methode/ | | | |

| Name | Description | Suitability | Non-suitability or potential disadvantages |
|--|--|--|--|
| LEGO Serious Play | Participants answer questions related to an ongoing project, task or strategy by building symbolic and metaphorical models of their insights in LEGO bricks and present these to each other. | Developed as a sophisticated means for groups to share ideas, assumptions and understandings; to engage in dialogue and to work out solutions to real problems. | |
| <i>Source:</i> Frick, Tardini & Cantoni: White Paper on LEGO®SERIOUS PLAY® | | | |
| Six Thinking Hats | In a group of 6 discussants, each tries to argue via a specific way of thinking, symbolized by a coloured hat he/she wears. The basic directions are: 1) facts 2) emotions 3) judgement/caution 4) logic 5) creativity and 6) control. Each role should have been taken by each participant at least once. | The method makes it possible to judge or improve ideas from different perspectives. Controversial ideas can be expressed without the danger of personal insults because of the role game character. Also, the characters' speaking can be ordered or excluded strategically to aim at a specific goal. | |
| <i>Source:</i> https://xn--kreativittstechniken-jzb.info/die-6-denkhute-von-de-bono/ | | | |
| Role Playing | Workshop participants perform a hypothetical service experience in a role play. The implied condition is thinking that the service really exists and then building a journey through some of its functionalities. | Especially when acting the same scene several times, using different character profiles ("personas"), the method helps to understand how different users would possibly act in the same situation and which functionalities of the product are needed/missing. | |
| <i>Source:</i> Service Design Tools, http://www.servicedesigntools.org/tools/42 | | | |

| Name | Description | Suitability | Non-suitability or potential disadvantages |
|--|---|---|--|
| LEARNING ABOUT NEEDS | | | |
| Character Profiles | Participants create several character profiles ("personas") of different types of users who are addressed by the specific product. The creation includes textual description as well as images. | Tool for the creation of a shared knowledge about the service users inside the workshop group. The profiles offer a clear and visible picture of the different kind of users that are the centre of development activities. Furthermore, the profiles can be used for other workshop methods like role plays. | |
| <i>Source:</i> Service Design Tools, http://www.servicedesigntools.org/tools/6 | | | |
| Role Playing | Workshop participants perform a hypothetical service experience in a role play. The implied condition is thinking that the service really exists and then building a journey through some of its functionalities. | Especially when acting the same scene several times, using different character profiles ("personas"), the method helps to understand how different users would possibly act in the same situation and which functionalities of the product are needed/missing. | |
| <i>Source:</i> Service Design Tools, http://www.servicedesigntools.org/tools/42 | | | |
| Rough Prototyping | Quick method to build prototypes using all the objects and material available in that specific moment and location. Elements are used to simulate the product's service components. | This tool supports the visualization of ideas and aims to assure that all workshop members are talking about the same thing. Furthermore it contributes to make the design process more interactive and concrete. | |
| <i>Source:</i> Service Design Tools, http://www.servicedesigntools.org/tools/30 | | | |

| LEARNING ABOUT NEEDS | LEARNING ABOUT NEEDS | LEARNING ABOUT NEEDS | LEARNING ABOUT NEEDS |
|---|--|---|---|
| Collage | Participants are asked to build a collage from a provided collection of images. They shall also explain their chosen arrangement and the significance of the images. | Useful method to illustrate participants' understanding and perception of issues; furthermore helpful for verbalizing complex themes. | |
| <i>Source:</i> IDEO Method Cards, http://www.gillianhayes.com/Inf231F12/wp-content/uploads/2012/10/IDEOMethodCards.pdf | | | |
| Pocket Charts | "Pockets" made of cloth, paper or cardboard are attached to a poster-sized piece of paper or cloth. Workshop participants arrange rows and columns of the pockets into a matrix, drawings serve as captions for the columns. Using the chart as an aid, participants draw attention to specific elements through a 'voting' process. | In general a tool with investigative/explorative aims. The combination of activities in pocket chart exercises has proven to be successful for generating participation and consensus in workshop settings. | |
| <i>Source:</i> King Baudouin Foundation: Participatory Methods Toolkit | | | |
| Scale Modeling | Use of scaled architectural model components to design spaces with the lead users. | New, before unknown issues may arise and underlying needs of lead users may come to light. | Seems more reasonable in topics that have a spatial aspect. |
| <i>Source:</i> IDEO Method Cards, http://www.gillianhayes.com/Inf231F12/wp-content/uploads/2012/10/IDEOMethodCards.pdf | | | |
| Card Sort | Lead users name possible features, functions or design attributes on separate cards and are asked to organize them spatially in a way that makes sense to them. | The lead users' "mental models" of the device/system are revealed, along with expectations and priorities about the intended functions. | |
| <i>Source:</i> IDEO Method Cards, http://www.gillianhayes.com/Inf231F12/wp-content/uploads/2012/10/IDEOMethodCards.pdf | | | |
| Narration | When executing a specific task related to a product, participants are asked to describe aloud what they are thinking. | This method generates useful insights into lead users' motivations, concerns, perceptions and reasoning. | |
| <i>Source:</i> IDEO Method Cards, http://www.gillianhayes.com/Inf231F12/wp-content/uploads/2012/10/IDEOMethodCards.pdf | | | |

| LEARNING ABOUT NEEDS | LEARNING ABOUT NEEDS | LEARNING ABOUT NEEDS | LEARNING ABOUT NEEDS |
|---|---|---|----------------------|
| Five Whys | Moderator ask participants five "Why?" questions in response to five consecutive answers. | This small exercise forces people to reflect and express the underlying reasons for their behavior and attitudes. | |
| <i>Source:</i> IDEO Method Cards, http://www.gillianhayes.com/Inf231F12/wp-content/uploads/2012/10/IDEOMethodCards.pdf | | | |
| Needs Assessment Exercise | Visual tool that draws out information about peoples' needs. | Raise of participants' awareness of related issues, providing a framework for prioritizing needs. Simple and low-threshold method, thus also suitable for contexts in which not all participants are literate in the issue. | |
| <i>Source:</i> King Baudouin Foundation: Participatory Methods Toolkit | | | |

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Appendix 1 – Workshop Checklist

Before the workshop

Setting up the Workshop

- The purpose of the workshop is clear
- We have an exact timeline
- We know who we want to involve in the workshop
- Our invitation strategy is clear
- A reward for the participants is set up
- A participant information sheet is written
- The decision-making scope is defined
- The expected results are clear and we know what to do with them afterwards
- The workshop plan is developed, taking into consideration:
 1. Audience
 2. Workshop objectives
 3. Constraints and strategy for overcoming constraints
 4. Materials needed
 5. Consent procedures

At least two months before the workshop

- Invitations of participants with all information they require are sent
- Facilitator is found
- The venue and catering are booked

Two weeks before the workshop

- Dates, times, travel information, etc. with the participants are confirmed
- Dates with the venue are confirmed
- The materials for the workshop are assorted
- The workshop is communicated with the facilitator

{ „THE MORE YOU PREPARE IN ADVANCE, THE MORE LIKELY IS A SUCCESSFUL WORKSHOP” }