THE CO-CREATE HANDBOOK

FOR CREATIVE PROFESSIONALS

*"Over the past 30 years, almost every aspect of doing design has changed. We still seem to be in the middle of a transition to greater entanglement and complexity, but with greater involvement of people and, hopefully, more value contributed by the design capabilities of many. We can anticipate these uncertainties with hope or fear. But if we can use design thinking, making, and enacting to visualize and explore the future together, then we will be able to harness our collective creativity to serve our collective dreams." **

*Co-creation and the landscapes of design,
Elizabeth B.-N. Sanders & Pieter Jan Stappers
www.tandfonline.com/doi/abs/10.1080/15710880701875068

CO-CREATE

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DISCLAIMER

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PART I:
TRAINING UNITS FOR CO-DESIGN

1.1/ Introduction

This document is a handbook for training yourself and others in collaborative design. In particular, it presents a methodology for developing train-the-trainer workshops on co-design. It can be used for accompanying co-design courses while it also features examples and practical information. This handbook has been created for both students and organizations interested in implementing co-design training activities.

This document has been elaborated from the insights and research developed during the CO-CREATE project. The goal of the CO-CREATE consortium was the elaboration and distribution of a brand new curriculum on co-design: a set of valuable design skills that has gained increased relevance in recent years and can no longer be ignored. We are sure both this handbook and the curriculum supporting it, are relevant steps in making co-design training more popular among educational organization.

While the curriculum presents a methodology for disseminating co-design at professional environments, this handbook introduces newcomers to co-design theory as well as to the practical issues of co-creation in the context of creative industries.

After testing and iterating versions of this document, we are sure of the suitability of this handbook in helping organizations across Europe to organize hands-on sessions in co-design. Together with the curriculum, the learning materials and the best practices report that can be found at our website[1], we are offering an up-to-date set of educational resources for both organizations and students interested in co-design.

Finally, it is important to mention that CO-CREATE has been made possible with the aid of European funding, made available through the Erasmus+ framework. It is an initiative of six partners committed to supporting the creative industries sector across Europe: Creative Region (Austria), University of Art and Design Linz (UFG, Austria), Academy of Fine Arts and Design (ALUO, University of Ljubljana, Slovenia), Deusto University (Spain), Creative Industry Kosice (Slovakia) and the European Creative Business Network (the Netherlands).

1.2/ The Goal of this Handbook

This handbook has been elaborated as a guide for the elaboration of Train-the-Trainer workshops in co-design and to specify the minimum contents these workshops may cover.

The **Train-the-Trainer model consists of a double training and learning strategy.** The trainer, a subject-matter expert, trains other employees and simultaneously teaches them how to train others in the use of the subject. It allows the rapid expansion of knowledge and skills in, for example, corporate populations. The method offers distinct advantages over other training models because trainees typically learn faster and retain the information better than in other teaching models.

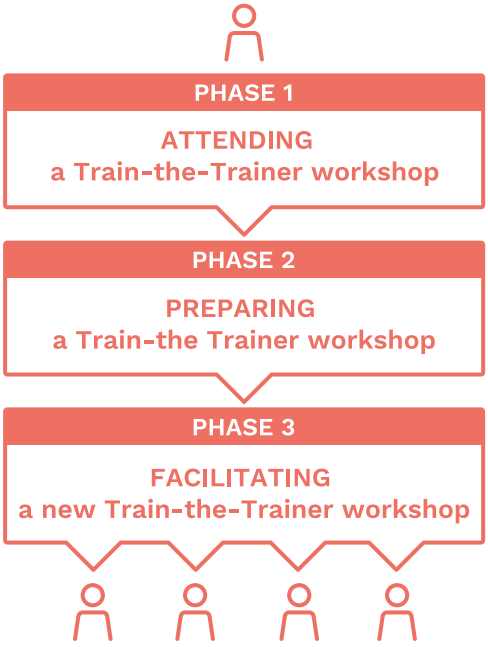
1 http://www.cocreate.training

This handbook inherits the methodology defined by the Co-Design Curriculum. Every student will follow the subsequent 3-steps methodology:

1. **Attending a Train-the-Trainer workshop** for learning and practicing co-design as a student, both from theory and practicing co-design solutions for **meeting a briefed challenge** using collaborative methods. It serves to acquire theoretical and practical knowledge on collaborative design as well as for understanding how to train others on co-creation.

2. **Preparing a Train-the-Trainer workshop** on co-design which the student will lead at his or her own professional environment. In our methodology, this phase serves as an assignment for the personal application of the knowledge and competences acquired on the previous phase.

3. **Facilitating a new Train-the-Trainer workshop** at the professional scenario of the student in question. This phase serves to practice the actual specificities of running a collaborative process at real professional environments. It is also understood as a phase of self- evaluation of the competences that the candidate may have.



These three phases may be seen as the basic methodological mechanism for delivering education. Rather than proposing unique formulas or training methodologies which will be soon outdated, we aim at understanding this methodology as a customizable system for Train-the-Trainer activities in co-design. Therefore, it is a set of co-design and educational principles allowing to create custom and successful educational experiences.

We developed our methodology especially for the implementation in creative industries. **The expected participants of the training activities will be creative professionals who look for acquiring or improving their collaborative design skills.** However, the organizations involved in the implementation of this workshop will have to reconcile particular professional needs of the candidates with the training requirements of the workshop.

As discussed in the curriculum, a minimum period of three days of intensive work is necessary to cover well the first phase of the methodology. These three day-sessions can be extended or even organized into more but shorter sessions. It is, however, not recommendable

to separate them too much temporally. Otherwise common criteria fixed at the workshop or discussions could be forgotten or revisited.

Certainly, the organizer of a collaborative design workshop has to take into account the characteristics of the professional sector and its participants before proposing a particular activity. For example, a hands-on practical workshop can be too adventurous in particular economic sectors or seen as not appropriate in specific cultural environments. But it can be adequate for a group of young graphic designers trying to find a collaborative solution for a creative challenge.

1.3/ How the contents of this handbook are organized

The contents of this handbook have been divided into three main sections:

- **Part I** introduces the objectives of this handbook, the vehicles for training and relevant characteristics of co-design. This part explores a number of key topics of the training design process in detail. For each key topic, it gives a quick overview of the main learning outcomes, the training strategies used, the key content, and some relevant resources. They are targeted at educators who will be directly involved in designing the training as well as the trainers of the trainers. It offers a series of key resource materials with references and sometimes annexes where relevant.
- **Part II** focuses on the main phases involved for creating a training event: a Train-the-Trainer workshop. It explains the philosophy and theory and in turn provides a framework for all the different stages of designing a co-design workshop.
- **The annexes** serve as an extension to additional resources for the trainers.

1.4/ What is Co-Design?

Co-Design is characterized by the involvement of people's actions in shaping decisions. It marks a clear shift from formalized models of work dominated by traditional and hierarchical decision-making which usually transform work into disembodied procedures and make invisible the social nature of everyday work routine.and processes of co-design are implemented. Other key aspects are participant roles, the interaction process, co-design infrastructure, time frame and success factors.

The beginnings of collaborative and participatory design are rooted in the 1960s and 70s, when social agents in many Western societies demanded to participate in collective action around shared interests and values. For example, in Scandinavia and during the 70s, the so called „workplace democracy movement" was aimed at providing workers with better tools for doing their jobs. Giving these workers a voice in decision-making about designing tools, environments and social institutions in the co-design of the artifacts that shaped their lives was found as a positive trend to integrate different interests.

Co-design means developing processes for understanding, developing and supporting mutual learning between multiple participants in collective decision-making and collective design.

People affected by design projects need to have a voice through the overall process. Co-design assumes that citizens will not always have the possibility to speak the language of experts. Therefore, one of the most important tasks at co-design is creating inclusive activities for boosting the participation of any citizen involved. For that, and as we will see later in this handbook, co-create makes use of different methodologies promoting participation and solution development.

As users do not necessarily have to be professionals in the field of discussion and can ignore the feasibility (e.g. with certain technologies), designers of the co-design processes must:

- inform all participants about the possibilities and constraints of proposed solutions
- envision different possibilities which could be applied for users' needs.

Tip: Read our Best Practice Report in Co-Design[2] for great real examples! The i-SIT project developed in Denmark has explored a systematic innovation process in the development of resting furniture by integrating the needs of elderly people. A six steps cross-disciplinary process was used to challenge the perception of the seating and resting furniture. The result is a user-democratic chair for both young and old.

Co-design means mutual learning between users and designers. During a co-design process, all stakeholders increase their knowledge and understandings. Users benefit from potential options they had ignored. And designers, who need knowledge about the users, are provided with experiential knowledge.

1.4.1/ UNDERSTAND: THE CORE OF CO-DESIGN

At the core of co-design, we find participation. From a traditional view of users as informants, participation means that users become legitimate and acknowledged participants in designing artifacts. For example, users seen as sources of data to fill questionnaires, in co-design users would seat on the table, equipped with paper and a pencil to participate, together with designers, in sketching how a process can be improved.

1.4.2/ UNDERSTAND: THE ETHICAL ASPECTS OF CO-CDESIGN

Genuine participation means ethical commitment to include all the voices, including marginalized groups that could be affected by decision-making. This aim is democratic and emancipatory. These communities must be involved as a basic human right: the one of having the opportunity to influence the design of those processes that involve their use. Using adequate methods or tools will not be enough to assure a co-design process succeed. A co-design process will only succeed if an inclusive and democratic solution is achieved.

2 The Best Practice Report can be downloaded from: http://www.cocreate.training/downloads

1.5/ Benefits and Difficulties of Co-Design

The benefits of collaborative design are:

- Some groups and individuals who do not normally have a 'voice' may become included in negotiations and dialogue.
- Different stakeholders can gain greater responsibility for various stages of a project development process; this increases the motivation and commitment of everyone who participates.
- Greater opportunities for discussion and reflection with different stakeholders.
- Being able to form links and networks more easily, which will allow you to share information better than before.
- Being able to establish a dynamic course design process as new linkages and lines ofcommunication are set up, resulting in greater satisfaction with your training programs.

The difficulties of collaborative design are:

- Size complexity: due to the involvement of a large number of stakeholders and design actors
- Usually collaborative designs are tedious to manage: collaboration needs transparency and a lot communication.
- It is socially complex: the personal characteristics of stakeholders and their relation- ships can be quite complex. The social style and the differences of culture and know- ledge can counteract collaboration.
- The skills for managing collaborative design projects are very specific and often actorsdo not have experience in opening themselves to collaboration.

1.6/ How to Approach Co-Design?

When projects become more and more complex (e.g. designing the plans of some type of children infrastructure in the city), collaborative design becomes often the only possibility to create effective solutions. In this type of projects, many issues are beyond the capacity of any individual person to comprehend. Yet, solutions do not come from the simple combination of partial solutions or fragmented individual efforts. Therefore, only by creating teams of designers working collaboratively from different perspectives, it is possible to provide cross-functional solutions.

THE COUNTERPOINT: As many people from different organizations and with different competencies are involved in design, the collaborative design process itself becomes complex. Therefore, managing collaborative design is not an easy task!

Developing a process of collaborative design includes addressing questions like:

- What does 'participation' mean in terms of decision-making power?
- Who needs to take part in the decisions?
- How should participants be supported?· What kind of methodologies and tools are needed for a particular design process?

Along the following sections, some tips and strategies for managing collaborative design processes will be explained: *stakeholder analysis, facilitating design, phases of co-design, methods and toolkits,* etc.

1.7/ THE REAL SCENARIO: An example of Co-Design

To exemplify different aspects of co-design, we present here a real project called „*Beyond the Castle*“ credited by Lancaster University and coordinated by Leon Cruickshank (used here with strict permission of the authors).

The project „*Beyond the Castle*“[3] was developed by the collective PROUD and EU funded through the program INTERREG IV. In words of the authors, the project goal was „re-imagining a large green space in the heart of the city of Lancaster“ in the UK. This co-design project was supported by professional designers but also more than 2500 citizens involved at different steps of the project. Around 700 of these citizens made active co-design contributions. The area beyond the castle can be observed at figure 1.

Figure 1: The area beyond the castle which had to be re-imagined (photo credits Lancaster University)

Although this park has great archaeological interest and it is only at five minutes' walk distance from the shopping area, it became an illegal camping place for homeless and a gathering point for youngsters. The local authorities had to propose a solution but after two years of unfruitful consultation, citizens became tired of communicating with the council.

At that point of time, PROUD was invited to overtake the strategy using a collaborative design process.

3 A publication fully describing the project can be downloaded here: http://eprints.lancs.ac.uk/72063/1/BTC_LC_GC.pdf

PROUD's initial approach to the challenge was:

- **Setting a Strategy:** create scaffoldings for allowing participants (citizens) to inputcreative ideas into the design project. This participation was not only informationalas was the case during past consulting activities driven by the Council.
- **Understanding actual Needs:** flexibility and strong support. The process is open toany citizen. It was necessary to enable disparate contributions. It was also necessaryto create structures to allow participants to respond creatively. Therefore, no blankpages to co-create were offered.
- **Being prepared for Difficulties:** local authorities were not convinced by the idea ofhanding over completely the control of the decision-making process to citizens. Asensibilisationcampaignfortheauthoritieswasneededtomodifytheirstandpoints.

1.8/ Who decides? The Importance of Stakeholders Analysis

An interesting topic stressed by the philosopher Bruno Latour is how:

designers, even since the Bauhaus and other modern design trends, have demonstrated great skills in designing objects, in drawing architectural sketches, mechanical blueprints, scale models, prototypes, etc. But in this design work we usually cannot find the controversies and the positions held by the many contradicting stakeholders that these objects involve[4].

Thus, Latour suggests that designers' skills should be put into play not just to design single objects but rather to draw things together, by opening-up controversial aspects of the design solution in a collaborative way.

One of the main aims in co-design is organizing projects with identifiable stakeholders within communities, collectives, human groups, etc., taking into consideration the power relations which already exist. **It is very important to understand that these power relationships are often a form of hidden and modulate participation.**

A stakeholder is any person, group, or institution that, positively or negatively, affects or is affected by a particular issue or outcome. We identify stakeholders as people, institutions, or social groups that are involved in, or affected by, decision-making regarding particular design issues. While this definition is seemingly straightforward, it is often difficult to answer fundamental questions such as these: Who are the people? What does institution mean? What are the limits to a social group? Yet, these questions must be answered if the right stakeholders are to be identified and mobilized.

Therefore, our task will be to provide resources for marginalized groups or communities in such a way that they can defend their own voice. For example, if there is a community where

4 Quote extracted from the Routledge International Handbook of Participatory Design (p. 56), edited by Jesper Simonsen, Toni Robertson. Their emphasis of Bruno Latour's Keynote Lecture for the Networks of Design meeting of the Design History Society Falmouth, Cornwall, 3rd September 2008

women are not marginalized, but culturally they are responsible of taking care of children, probably they will not be able to attend any meeting happening at the time when children have finished school. Thus, our job is to provide resources to support participation in the project.

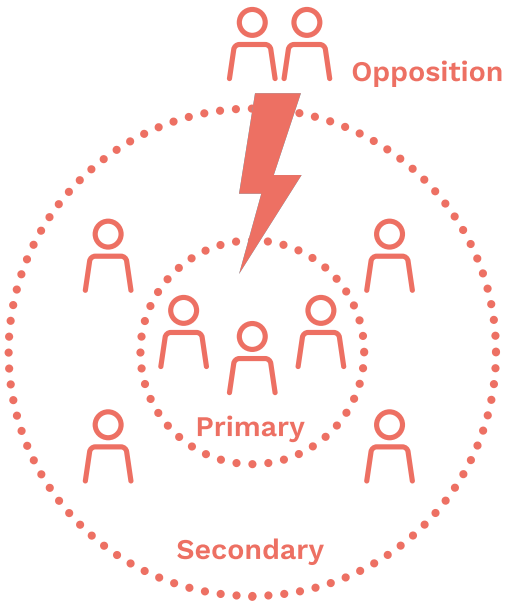
However, design today is rather heterogeneous. Often design processes are still often only partly open and public. However, co-design emerges to engage agents and stakeholders across organizational, cultural and communal borders. Thus, we may evaluate if the necessary stakeholders are well integrated into our project. Who are they?

The different types of stakeholders:

Different interest groups will have differing stakes in the management of resources, based on their use of and historical relationship with resources.

Primary stakeholders include those who, because of power, authority, responsibilities, or claims over the resources, are central to any design initiative. As the outcome of any action will affect them directly, their participation is critical. Primary stakeholders can be of any social, professional or political level, from independent self-organized communities to private sector interests, or from local and national agencies to international institutions.

Secondary stakeholders are those with an indirect interest, not primary, in the result of the design process. For example, they can be a consumer or a client (who can be interested in the future availability of a service), the company employee (who is concerned about the conditions of work), or the transport operator (who wants to know whether a ski destination will still be available). These stakeholders may have to be involved in the collaboration process, but the characteristic of their role, more peripheral to that of primary stakeholders, would also afford involving them only periodically. Therefore, facilitators of collaboration processes will necessarily have to plan when and how to include both primary and secondary stakeholders, as well as to monitor changes in their interests and influence. For instance, during the collaboration process, a secondary stakeholder can become a primary stakeholder if the conditions of the design problem change.



Opposition stakeholders are those identified with the capacity to influence outcomes in a negative way. While they will probably adversely modulate decisions, it is very important inviting them to take part of the open dialogue. Often, designers recognize the importance of engaging their adversaries into design processes although obviously not many have experience in doing so. In this case, the facilitator becomes the key factor in monitoring how opposition stakeholders influence the overall process.

Unfortunately, women, in many cultures, indigenous peoples and other impoverished communities are often marginalized stakeholders. They could be in fact primary, secondary, or opposition stakeholders. They usually lack the possibility to participate in collaboration processes at the same level as others. Therefore, it is critical to identify their existence and allow them to participate.

> **ETHICAL CONSIDERATIONS:** There are design projects where stakeholders are well identified. However, for many projects it is necessary to do some previous research for defining an actual and inclusive stakeholders list. And, for example, many stakeholders wouldrecommend not including a particular community for some cultural reason. Often there are groups which are perceived as too combative and leaving them out of the dialogue solves organizational issues. These objections may or may not be justifiable but it is important to maintain a coherent and ethical control of the project. If not, the project will be at risk.

1.9/ Example: Methods for Identifying Stakeholders

Annex - Useful References of this document contains a repository of methods and exercises for addressing different moments of a collaborative design process. Among them, you will find possible methods for identifying stakeholders.

In this case, we will explain a variation of the *Prince Chart* method developed by Coplin and O'Leary[5] to better predict project outcomes. This exercise is also explained in the on-line repository Gamestorming[6]. Please browse other possible methods among the ones described in *Annex - Useful References.*

The method in question is simply called *Stakeholder Analysis* and it was developed to be used by any number of participants. It may have a duration of 30 minutes. For identifying stakeholders, it is necessary to create a two dimensional graph (figure 2). One axis of this graph will represent effective 'power' of a stakeholder and the other will represent 'interest'. The power of a stakeholder defines how much a stakeholder can influence the final decision taken at the particular project being studied. The 'interest' dimension serves to measure the impact that the final decision will have on the stakeholder. The activity is completed in three steps:

Step 1: Create a list of all possible stakeholders and write each of them on a post-it.

Step 2: Organise the stakeholders on the two-dimensional graph qualifying them with an

5 Political Analysis Through the Price System, Policy Studies Associates, 1983
6 http://gamestorming.com/stakeholder-analysis

amount of power and interest between „low“ or „high“ (see figure 1). Analyse the priority of each stakeholder and identify those who are strategic due to their importance.

Step 3: Define a strategy and discuss it with the others. The strategy may define stakeholders in the process, needs of particular stakeholders, who will engage each stakeholder in the project, as well as any aspect related to the inclusion of individuals or collectives. This activity is only one of many methods which can be used along a co-design process to identify stakeholders. More alternatives are listed in *Annex - Useful Ressources* of this handbook.

> **Exercise:** Would you be able to identify the stakeholders of the Beyond the Castle project with this method?

At a co-design process, when do we elaborate the Stakeholder Analysis?
As it is described in the section 'Sequence of Events in Co-creation' in this handbook, stakeholder analysis must be elaborated when the organization in charge of running the process collects information about the project in question. b Therefore, stakeholder analysis has to be developed before the launch of practical co-creation events.

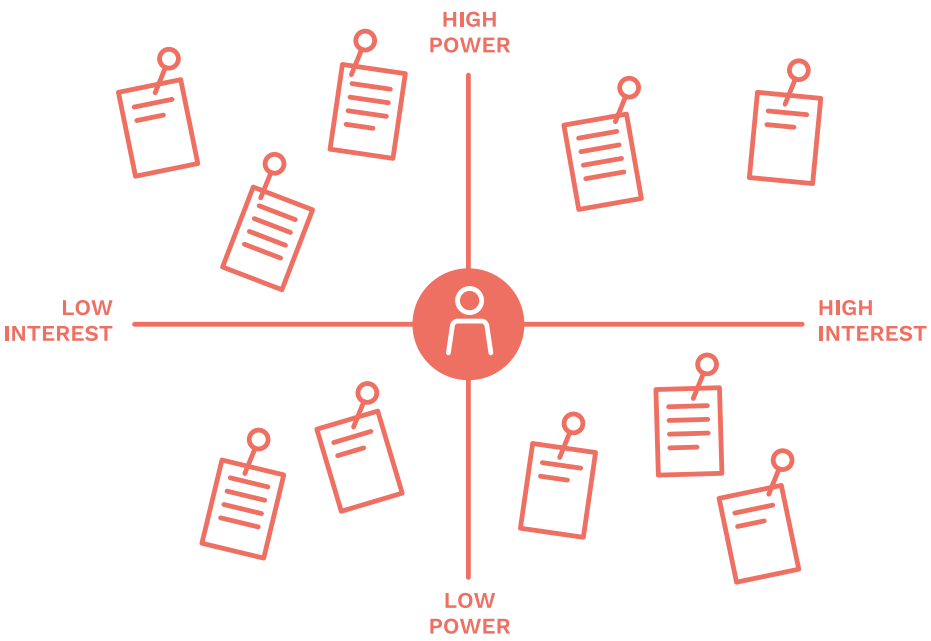


Figure 2: Stakeholder Analysis Mapping

> **In the context of our Train-the-Trainer workshops, *Stakeholder Analysis* is a recommendable practice used to understand better the challenge in question to solve. For trainers, it is also a useful resource to create teams of participants with a different number of approaches. In previous Train-the-Trainer workshops, we noticed how codesign teams tend to develop more creative and unexpected solutions when the group shows various mindsets, mentalities and professional expertise!**

1.10/ Facilitators: To Be or Not To Be

- First published in 1976, the book *How to Make Meetings Work*[7] introduced a role-based process for improving any kind of meeting. For having a successful meeting, someone in the room must assume one of the following roles:
- a group member (most of the folks involved)
- an organizational leader
- the recorder
- the facilitator

The facilitator is a person that shows the adequate mix of knowledge about a design problem and prior experience in driving groups of people towards coming up with a solution for specific issues. The facilitator usually needs to deal with a considerable amount of meeting protocols and documents that he or she needs to remember in order to accompany the natural social behaviours in a group.

The most important characteristic of the facilitator is to play a completely neutral role. **Facilitators must adopt neutrality as unlike evaluation, it creates a frame work of trust.** The facilitator monitors the design process and develops strategies to create new encounters between the defined stakeholders and the problem.

Sam Kaner, author of *The Facilitator's Guide to Participatory Decision Making*[8] argue that for organizations to be effective, they need to involve all members of the organization in the decision-making process. However, as we may have all experienced inside or outside our organizations, the dynamics of large group discussions often make the discussion end with awkward disagreements and dead ends. For Kaner , the facilitator is the person able to present methods to help groups to bypass these situations. A good facilitator gives a supportive voice to every stakeholder, understanding every argument during the meeting.

The facilitator has **four main functions during a collaborative project:**

- Encourage participation
- Build a shared framework or understanding of the problem
- Seek inclusive solutions that work for everyone with a stake in the outcome
- Finally, design solutions based upon shared responsibilities

These functions are mapped to every project's characteristics and situations. For example, the facilitator may:

- Provide clear guidance through a series of steps intended to reach an agreed-upon end result
- Follow a pattern of discussion: divergence of opinions allowance, exploration of those opinions setting actual constraints, and finally make or force these ideas to converge
- Provide a real-time representation of what's going on during the meeting where people can see it.

7 Doyle & Straus, ed. BERKLEY PUB TRADE
8 Sam Kaner, Jossey-Bass publisher; Jossey-bass Business & Management Series 3 edition (April 28, 2014)

- Keep in mind that everyone in the room, no matter what they say, believes that theirrecommended action equates to doing the right thing.

In the specific case of our Train-the-Trainer workshop it is important to know that the facilitation tasks aim at facilitating the co-creation process during the workshop. This means that the facilitator may accomplish the following tasks:

- **Choosing the adequate design methodology for the co-creation process depending on the type of participants and the challenge in question.** For example, the CO-CREATE consortium has often employed the Design Sprint[9] methodology developed originally by Google. The Design Sprint helps at solving problems through designing, prototyping, and testing ideas with users. Participants first get to understand the problem in question and then explore divergent ways to solve it. Finally, a common criterion is found and a solution is chosen, prototyped and tested.
- **Guiding participants along the phases of a chosen co-creation methodology.** In particular, facilitators have to propose methods (exercises) to help participants to structure their ideation processes in an efficient way. A common phenomenon in co-design is that multiple solutions may be formulated and the team has to decide the winning one. The facilitator may help participants to create a common criterion by applying the ranking or 2,4,8 consensus method[10].

Example: The Ranking Method for Prioritisation (proposed by the organization *Seeds of Change*) This method takes 10 to 20 minutes and is suitable for groups from 5 to 20 people. All possible solutions offered are written on a card or post-it note. Each participants' group receives a full set of cards or notes. The facilitator sets a limited time and asks the groups torank the options, or reduces the options to, say, three, taking into account some criteria.

For example: *You've got 15 minutes. We're looking for options that need to be done most urgently in this challenge and yet realistic within our budget. Also we've only got a month to make it happen, so please think about what we can realistically achieve in the time available.*

1.11/ Tips for Workshop Facilitation

Workshops are training activities suitable for collaboration, brainstorming, building networks and interactive learning. Developing a successful workshop for the first time depends highly on the facilitation skills of the workshop leader.

9 More information can be found here: http://www.gv.com/sprint/
10 Methods proposed by the design organization Seeds for Change which can be found here: https://seedsforchange.org.uk/tools.pdf

For acquiring the adequate competences on workshop facilitation, training organizations will need to train candidates on:

1. **Workshop Preparation:** defining an agenda, a workshop plan, defining goals and methodologies.
2. **Design:** structure the workshop dynamics for increasing participation, active involvement, own learning, interest and share of interests. Use participants' experience and knowledge. Make sure that everyone contributes and gets involved in the workshop dynamics. You can plan games, role plays or practice sessions to improve participation.
3. **Facilitation Tools:** different people are interested in learning in different ways, it will therefore be necessary to plan a diversity of exercises and tools in our workshops. These practical sessions have to be planned and organized to allow thinking and concentration but also moving around and exploration. It is often recommended to organize an energizer exercise every 90 minutes or propose some funny physical activity. There are many repositories for facilitation tools like *HyperIsland* [11] or the *Design Kit* [12] with hundreds of possible examples. Please also check more repositories in *Annex - Useful References* of this document.
4. **Practical Exercising:** facilitators-to-be can only practice, practice, practice to incorporate the necessary skills and competences on workshop facilitation. Organizers may include in the training activities enough practical sessions to make students fully understand the difficulties of workshop facilitation and the management of a number of preferred tools.

1.12/ Sequence of Events in Co-Design

We usually describe the sequences of events as threefold:

1.12.1/ INITIATION

This is the phase in which the idea of a particular co-design process takes shape and the first steps toward realization are taken. Even at this early stage actions could improve the chances of success of the process. This phase involves the following aspects (among others):

- Gathering information about the issue in question and spreading this information among potential stakeholders and those who may be interested.
- Clarifying the premises for a collaborative process (e.g. legal regulations, deadlines).
- Thinking about a strategy for the collaborative process.

11 http://toolbox.hyperisland.com
12 http://www.designkit.org/resources

- Defining key structural aspects (e.g. funding, division of responsibilities).

1.12.2/ PREPARATION

At this stage important decisions about content and organization are taken. They have a decisive influence on the quality of a co-design process even though the actual process has not yet begun. At least the following points will have to be taken into account:

- Aims and assignment must be clearly defined, and known to everyone involved.
- Potential stakeholders and those who may be interested must receive sufficient information and must be invited to take part.
- By now everbody`s degree of influence on the course of the process must be defined and who is entitled to decide what.
- The financial framework and timescale, and the sequence of events during the process must be clarified and put on record.
- Process design and management must be adapted to the issue in question, the financial framework and the timescale.
- Organizational aspects such as where to meet, technical equipment, catering etc. must be dealt with at the preparation stage.

1.12.3/ REALIZATION

The essential points of the realization stage largely depend on the methodology employed and on whether a competent facilitator accompanies the process.
All events should focus on the following points:

- All participants' roles and powers must be clear.
- Rules of democratically reached agreements about the sequence of events, rights and duties of the participants, and how people treat one another.
- Special attention should be paid to how the flow of information between those taking part in the process is organized, and how the general public is kept informed during the implementation.
- The way in which the results achieved together are presented and implemented must be laid down clearly and unambiguously.

The Train-the-Trainer workshops developed by the CO-CREATE consortium have followed the previous sequence of events. Workshops are usually initiated by the organization a few months before their realization. The adequate facilitators are found and a methodology for co-design is chosen during the preparation phase. Then, the organizational aspects and the logistics of the workshop are solved. Usually an open call for participation is launched, or an invitation is sent to key stakeholders. Finally, at the phase of realization, the facilitator defines the number of activities to be developed until the end of the process.

1.13/ Defining a Co-Design Methodology

A methodology for co-design, often called co-design framework, describes the sequence of events and how they will be developed during a co-creation process for solving the issue in question. In particular, **it establishes the methods to use and the suitable materials to employ**.

Organizations and facilitators will use a methodology in order to achieve the basic goals of a co-design process:

- Understanding in detail the issue/challenge in question.
- Ideation of solutions.
- Organization of solutions proposed.
- Selection of criteria for finding the solution.
- Prototyping artifacts for communicating the solution.
- Presenting and testing the solution.

At each phase in the realization of the co-design project, the facilitator assists participants in designing activities, often called methods. For instance, depending on the profile of the participants, a facilitator will explain and develop exercises for boosting the ideation of solutions. One method can be designed to boost the appearance of contrasting solutions. Another one could be designed to support creative ideation with certain constraints. Correspondingly, various methods will be used during the basic phases of the realization of the co-design process.

Frameworks also establish a suitable working atmosphere, periods of work and rest, activities for socializing and improving communication, games for gaining awareness about others' perspectives, etc. Depending on the framework, different materials for the development of the activity will be needed.

A number of popular frameworks have been developed during the last decade. Different professional sectors show diverse idiosyncrasies, skills and favorite materials. For instance, a framework dedicated to children in the range from six to nine years old will be radically different than a solution-finding workshop methodology for nuclear plant engineers.

Examples of popular frameworks are:

- The PROUD framework[13], a hub of frameworks, methods and projects.
- The „WACOSS Co-Design Toolkit[14]" contains a range of practical tools for effectively engaging funders, community service organizations and the users of community servicesin the Co-Design of programs and services.
- The „EBCD Experience Based Co-Design Toolkit[15]" for the improvement of medicaltreatments and communication with patients.
- The toolkit „Designing technologies for and with children[16]" by Maarten Van Mechelen, a toolkit to prepare and conduct co-design activities and analyze the outcomes.

A list of frameworks collected by the CO-CREATE consortium can be found in *Annex - Useful References* of this document.

13 http://test.proudeurope.eu/proud
14 http://wacoss.org.au/library/wacoss-co-design-toolkit
15 https://www.pointofcarefoundation.org.uk/resource/experience-based-co-design-ebcd-toolkit
16 https://soc.kuleuven.be/mintlab/blog/project/designing-technology-for-and-with-children

1.14/ Methods for the different Phases of the Co-Design Process

The co-design process usually employs different methods to involve participants in the design flow. None of them guarantees the success of a collaborative process but can contribute significantly to

- conduct participation processes in a structured and efficient way,
- provide variety and interest, and
- track down new solutions away from well-trodden paths.

Remember that co-design is not defined by magic formulas, rules and strict dogmas but mostly by the commitment to core principles of participation in design.

Which methods can you use?
There are many different methods to promote collaboration. The appropriate method at a particular stage in the process depends (among other things) on

- number of participants
- how much time is available for developing the activity
- 'depth of collaboration': whether the process is about information, consultation or joint decision
- particular needs of the specific group of participants
- requirements stated for the solution
- skills of the facilitator

TIP: DO NOT STOP LEARNING NEW METHODS FROM OTHER FACILITATORS
It is difficult to use the same set of methods for every project in the co-design practice. Often organizers and facilitator combine various methods to better fit the needs. As participants usually have less knowledge and experience about methods and their application, the facilitator has the responsibility of choosing them and presenting their use, exemplifying and recommending variations, etc. Learn from other skilled facilitators!

This is a short list of methods which we used at our workshops. We have categorized them in order to define at what point of the process they should be applied. Many other methods and links to their description can be found in the attached toolkits.

- **Introductions and endings:** Pair Introductions, Name Games, People Map, Excitement Sharing, Feeling Sharing, Getting Present, Personal Object Name, Workshop Gifts, Writing a Letter to Yourself, People Bingo.
- **Building trust:** Alternative CV, Skilled Hand Exercise, Picture Yourself, A Journey of Discovery, Trust Circle, Trust Ladder, Mirroring.
- **Participation and discussion:** Parking Space, Keeping a Speakers' List, Talking Sticks, Matchstick discussion, Group agreement, Go-round, Ideastorming,

Small Groups, Paired Listening, Roleplays and Simulations, Plus-minus Interesting, Spectrum Lines,

- **Tackling difficult issues:** Controlled Dialogue, Sharing Withholds, Feelings Meetings, Reverse Role Play.
- **Prioritising and planning:** Show of Hands, First to Five, Thumbs Spectrum, Stickers and Dots, Ranking, 2-4-8 Consensus, Urgent Grid, Six Thinking Hats, Pros & Cons, Plus-minus Implications, Diamond Ranking.
- **Waking up, warming up and winding down:** Rain Making, Green Trousers Game, Knot Game, Animal Game, Wizards-Pixies-Giants, Count to Ten, Body Part Twister, Eye-Catching, Who Am I?,
- **Evaluating:** Summing up Rounds, Questionnaires, Expectations List, Enjoyment Graphs.

1.14.1/ EXAMPLE: Methods used at the project BEYOND THE CASTLE

The managers of Beyond the Castle (Lancaster University & PROUD) proposed a framework consisting of five extensive activities. The first two served to be sure that citizensgain knowledge and awareness about the park. The third activity was organized for the massive ideation of solutions. The fourth was organized to cluster solutions and reduce the number of contributions. Finally, the fifth event developed in fact a whole new co-design cycle resulting ina shared solution. These activities were:

1. **An awareness-raising event**. A corner of the central shopping square in Lancaster was transformed into a representation of the area „beyond the castle“. Passers-by were invited to document both the things they did in the area and how it could be improved on a three meters model of thepark.

2. **Just Imagine All The Stories**. Presentationof eightinterconnected activities in the park. Using co-design through story-telling, these activities helped to bring the past of the park to the present. For example, a narrative of a Roman centurion and a swamp fairy. This was designed to elicit a deeper interaction amongfamilies.

3. **Just Imagine the Shape of the Park.** Participants mapped and modeled possible de-ve-lopmentsin the Beyond the Castle area. Participants ranged in age from 3 to 92 years old took part. Atthis open access event many people stayed for over 30 minutes working on theirmodels.

4. **Visioning**. This is a different type of event, as all the others were completely open to the public without any registration. Here the 15 most active contributors helped to organise the more than 1000 ideas fromprevious events and curatethe next stages of the process.

5. **Interactive Co-Design Exhibition.** It showsa good example of designingan activity with divergent andconvergent thinking Designersdevelopeda co-design exhibition prototyping elements. with a group of participants in the city center, where the participants could construct an interactive „scaffoldings for experiencing“ with areal opportunity to co-design.

(a) Kiosk at Lancaster's shoppingsquare

(b) Same kiosk full of artifacts representing the memoriesof activities of participants in the park

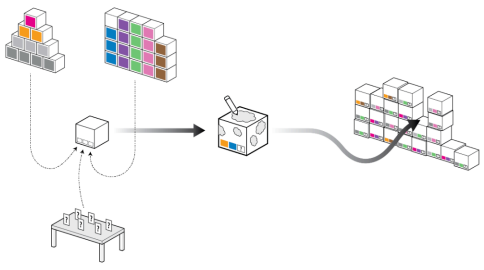
(c) Citizens creating flows of stories through the park

(d) Storytelling was used to attract families to contribute. Here the swamp fairy stands in their way until they come up up with a good idea

(e) Model making interventions

(f) More active citizens analyzing and curating all the ideas suggested so far

(g) The interactive co-design exhibition



(h) The interaction process, taking two sets of ideas from the visioning workshop and using these as the basis of codesign

Figure 4: Activities organized for Beyond the Castle (Lancaster University).
Photos used with permission of the authors (Lancaster University and Leon Cruickshank).

1.15/ Co-Design Materials

A great variety of materials can support the development of co-designprojects. Many co-design workshops use limited office materials for the ideation and decision phase. Others make use of typical artifacts found at particular professional environments. For instance, co-design workshops at architectural or artistic environments tend to extend the basic setup of post-it notes and paper cards (figure 5).

Figure 5: Materials visualizing the relationships between various decisions madefor the rehabilitation of an abandoned site. CO-CREATE consortium, Train-the-Professionals work- shop in Utrecht (2018)

For the prototyping phase, design studios have often used LEGO bricks (figure 6), cardboard models and modeling materials. Engineering offices tend to create digital mockups and hardware or software prototypes. Storyboards are also quite interesting as a material and method to visualize actions sustained during a certain time. Storyboards can be sketches, hand drawings or illustrations. Theycan be also produced with digital tools combining steady photos and short videos.
In order to representconcepts and parameters of a particular co-design idea, a variety of tools and techniques can support collective discussions and actions. Examples of typical tools would be:

- Mock-ups
- Scenarios
- Prototypes
- Designgames
- Top views andmaps
- Pictures of the placesinvolved

- Physicalmaquettes
- Transformation of scenariodiagrams
- Site analysisinterpretations
- Renders (subjectiveviews)
- Immersivesimulations
- Interactivesimulations

These tools enable participants to engage with models andto envision, visualize,simulate and experiment with specific situations prior to the real development and implemen- tation. They are alsonecessary to represent ideas and questions, problems, proposals, reflections and issues regarding various aspects of design and its process.

Figure 6: Prototyping with LEGO bricks at a Train-the-Professional workshop organized by the CO-CREATE Partner ALUO in Slovenia. Photo Credits: Ales Rosa

1.16/ Two Main Cases of Collaborative Challenges

We will focus our attention on two relevant cases or paradigms of collaborative projects:

- Collaborative Decision Making with all stakeholders engaging to frame a particular situation and decide on an action plan.
- Collaborative Product Design with all stakeholder engaging in different events with he aim of designing collaboratively a ‚product' for its manufacturing. Products here are understood as artifacts or services, systems, experiences, etc.

In the following two sections, we will describe their main characteristics and how to manage each of them.

Collaborative Decision Making

Collaborative decision making is a process of engagement in which all relevant stakeholders work together, often using information and communication technologies to understand issues and determine the best course of action. Collaborative decision making outlines a scenario in which the exchange of information results in a stronger partnership between institutions, companies, etc., with different views, often reducing the risk of social conflicts.

The following table (Table 1) presents different decision making models, including oneway communication models (paternalistic and autonomous) and two modern models: shared and collaborative decision making.

Which is the difference between shared and collaborative decision making? Roughly speaking, a conversation about the options available can be considered a shared decision process if there is a willingness to listen and respect each other's views. For example, shared decision making has been emphasized at health systems, were patients are encouraged to take decisions about their own health.

To 'collaborate', on the other hand, requires that all stakeholders work together, especially in a joint effort. In the case of the hospital, doctors obviously can advise about medical diseases and treatments, but patients can also have a certain level of medical knowledge summed to their expectations about their quality of life. While a shared decision making process would emphasize all efforts towards the decision (e.g. the medical treatment), co laborative decision making is understood as a process of engagement between the parts which only ends when both parties have learned from each other. This process is useful because it can produce findings, newer understandings and many other non-expected possibilities to actually make decisions.

Interaction Model	Professional	Consumer	Knowledge Flow	Objective
Paternalistic	Directive	Passive	One-way, from professional to user/consumer	Compliance of user/consumer to professional directive
Autonomous	Receptive	Directive	One-way, from user/consumer to professional	Compliance of professional to user/consumer directive
Shared decision making	Informative	Informative	Two-way exchange	Equity in the decision making process
Collaborative Decision Making	Supportive	Proactive	Knowledge building that goes beyond the issue	Optimal action plan to improve health

Table 1: Decision making models

The collaborative approach tries to define first the highest priority problems which might not be 'the decision as such' but other possible issues surrounding it. It is often said that collaborative decision making focuses on the 'how' and not the 'what'. Yet it is this process of sincere and mutual engagement with the problems that the collaborative mode can be applied on a group.

Fast-track to collaborative decision making:

- All parts and stakeholders provide transparent information about the issue.
- Inform on the 'Why' and 'What', so what to expect from the issue.
- Invite all stakeholders to elaborate on the issues of the possible decisions.
- Re-frame the situation with these particular elaborations.
- Agree on an action plan with all parties which can incorporate the particular and specific needs of all stakeholders.
- Check the progress of a decision towards the goal with all parties, updating the situation if needed.

1.17/ Case Study 1: Collaborative Decision-Making[17]

Let's consider the case of an HIV positive patient who is reluctant to start taking medication for which there is a clear indication. In a shared decision making model, the physician informs the patient of the need to start treatment, describes the rationale, and provides information on what to expect. Together, they weigh the pros and cons of starting treatment. The patient maintains the freedom to choose not to start treatment. Both the patient and provider then agree to revisit the decision in a follow-up appointment.

With the collaborative decision making model, the physician informs the patient of the indication for treatment, the reasons why and what to expect, and invites the patient to elaborate on what is happening in his life, articulating non-medical factors (e.g. denial of the diagnosis or negative feelings about pharmacological interventions in general). At this stage, the physician and patient together reframe the treatment decision, based on the confluence of both medical and non-medical factors. The current situation, as it is re-framed is: „How can I (the patient) come to terms with my feelings about treatment?" At this stage an action plan can be agreed upon by both parties. For example, the patient would agree to seek counseling to address feelings about HIV and treatment. This broader approach allows the physician to re-frame the medical issue within a wider context that will enable him or her to remain engaged in the patient's overall health management process, while clearly defining his limits and responsibilities. A follow-up appointment could be offered with an open date, should the patient choose to reconsider the decision. By focusing on an action plan, the physician and patient could make progress towards the common goal of improved health. This process would build the physician's knowledge of the patient's life experience. It would also allow the physician to clearly articulate the role in the patient's overall health management landscape.

17 This example has been adopted f r om a real case of s tudy which is fully described here: https://participatorymedicine.org/journal/evidence/case-studies/2010/11/08/shifting-from-shared-tocollaborative-decision-making-a-change-in-thinking-and-doing-4

Although distinct, shared and collaborative decision making should not be viewed as mutually exclusive, but as complementary approaches that could contribute to the emergence of well-balanced partnerships between patients and health professionals in the clinical realm.

1.18/ Case Study2: Collaborative Product Design[18]

Let us consider the collaborative design of a breathing apparatus, called the Mask-Aid device. The project began when some nurses and doctors complained about the discomfort of breathing over a prolonged period of using a respiratory face-mask. The research wanted to find out whether it would be possible to design and develop a solution that could make breathing easier for nurses and doctors when using such a face-mask.

A design team comprising a product designer, a mechanical designer, an electrical designer, and a couple of prototype making technicians was formed. They met the nurses and doctors and spent several days observing nurses and doctors using typical respiratory face-masks. They gathered photographs and video material. They wore the respiratory facemask themselves to experience and understand the problems the nurses and doctors faced. Many rounds of focus group surveys and discussions with the nurses and doctors were conducted and useful information was collected and studied. The team also studied other users of respiratory face-masks, e.g. workers in factories and shipyards who need them to protect against airborne fine particles. This was followed by a preliminary study on the desirability-feasibility-viability of the project.

The team proceeded to carry out research on the needs of other stakeholders related to the product, including people involved in manufacturing, marketing and sales, packaging and delivery, servicing and maintenance, retirement and disposal of the product. The research also includes other aspects relevant to the project, including existing products (e.g. powered air purifying respiratory used in chemical industry), technology and materials (e.g. methods of air filtering), performance requirements (e.g. minimum air flow rate and filtering efficiency), costs of materials and manufacturing, etc.

Following several rounds of brainstorming and discussions, applying both creative and critical thinking, the team identified the problem. The discomfort lies in the fact that the amount of carbon dioxide and moisture exhaled from the user accumulated inside the dead space of the respiratory face mask. The discomfort can cause fatigue and lower the quality of the work performance.

The design intent of the project was to provide a design solution that helps users of respiratory face-masks to breathe more comfortably over a prolonged and continuous usage of up to an 8 hour-shift.

The team subsequently proceeded by performing a series of experiments and technical investigations to establish the technical specifications of the new system. This function-formefficiency study for a utopia design led to the first version of the design specifications for the product.

18 A real case of study taken from Tan's article: https://www.designsociety.org/publication/34844/collaborative_product_design_and_development_for_commercialization_of_invention

One important design feature of the product is to provide maximum flexibility for the users when using the product, i.e. design for users' creativity. For example, the design specifications stipulated that the device would allow the users to wear it at the waist, at an arm, hung from the neck or place it in a handbag or carrier. The users would be able to add features such as fragrance to the filtered air, microphone and speaker for communication when used by doctors during surgery. The device would be produced in different colours and surface textures for different preferences of the users.

In the Process phase, the team went on to brainstorm for design ideas and concepts in accordance to the design specifications. A large quantity of divergent ideas was initially generated. These ideas were evaluated using criteria specified in the design specifications, and suitable ideas were developed into design concepts guided by the principles underpinning the desirability-feasibility-viability of the design thinking philosophy. Applying creative and critical thinking, the concepts were evaluated and refined, and several working prototypes were produced for testing and evaluation.

2/

PART II:
PREPARING A WORKSHOP FOR TRAINING TRAINERS ON CO-DESIGN

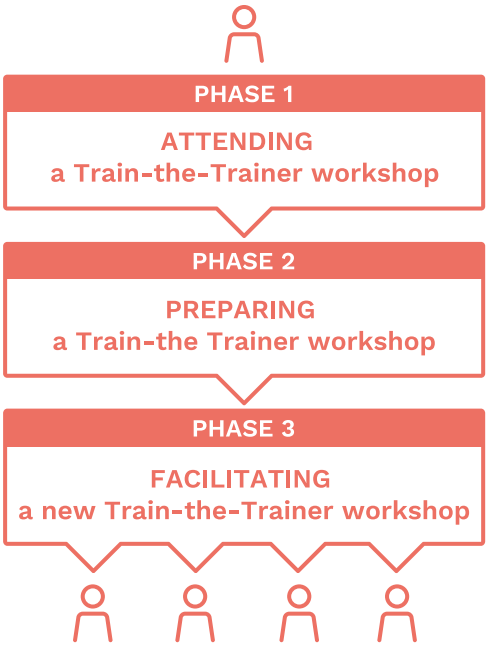
2.1/ Preparing a Co-Design Workshop

The second part of this handbook will help students to structure and prepare a co-design workshop following the CO-CREATE consortium methodology.

This workshop is understood as a non-formal educational activity. A workshop is a brief intensive educational program for a relatively small group of people that focuses especially on techniques and skills in a particular field. In dynamic professional sectors we may not expect participants to take part in regular educational activities, some requiring many weeks or months of regular attendance. The intensive format of a workshop will allow participants to strongly focus during several days on the activity without having to cancel their normal working activity. Therefore, all learning units and methodologies will be oriented to help in the development of a workshop.

As it has been introduced, the Train-the-Trainer workshop model consists of a double training and learning strategy. The trainer, a subject-matter expert, trains other employees and simultaneously teaches them how to train others in the use of the subject. It allows the rapid expansion of knowledge and skills in, for example, corporate populations. The method offers distinct advantages over other training models because trainees typically learn faster and retain the information better than in other teaching models.

As it was stated in the First Part of this handbook, our educational methodology can be described in a 3-steps process:



1. PHASE 1: **Attending a Train-the-Trainer workshop**
2. PHASE 2: **Preparing a Train-the-Trainer workshop**
3. PHASE 3: **Facilitating a new Train-the-Trainer workshop**

In this second part of the handbook, we will offer guidelines for organizing and facilitating a Train-the-Trainer workshop. As it has been already explained, the intention of this workshop is solving a challenge for practicing co-creation. Participants of the workshop will be divided in groups which will have to find a comprehensive solution to the issue in question. The solution will be modelled and prototyped and finally presented and tested. This educational journey is guided and supported by one or several facilitators.

2.2/ Objectives of the Train-the-Trainer Workshop

Depending if a person participates in the workshop as facilitator or student of codesign, the objectives differ:

- The objective of the workshop as student is to understanding the structure of a Train-the-Trainer workshop on co-design while engaging with the practice of cocreation. Participants will embody the difficulties of managing and facilitating a collaborative activity while acquiring experience and the necessary competences and skills in co-design.
- The objective of the workshop as trainer is to test your capacity to transmit your expertise in co-design, as well as your skills for preparing materials and training and facilitating competences through a co-creation process.

2.2.1/ How do we learn during a workshop?

During a workshop we learn from different sources:

1. **Learning from experts:** Introductory lectures about subject-matter of co-design given by trainers and experts. They serve to understand the main characteristics of a codesign-project and include theoretical approaches and analysis of case studies.

2. **Learning from each other:** Practical activities developed collaboratively.
   - Solving a briefed challenge collaboratively
   - Collective discussion events: public discussion and networking conversations

3. **Learning from knowledge:** training events for complementing the workshop (excursions, visits to co-design professionals, ateliers, etc). These events offer realistic information needed to engage specific-case data and information.

4. **Collaborative Evaluation:** sessions trying to find out what has been learned and how it can improved.

2.3/ Guidelines to prepare a Co-Design Workshop

The Train-the-Trainer workshop format we are introducing here offers a structure which can be easily replicated and implemented by any educational or professional organization.

2.3.1/ Know your participants before the workshop

The number of participants can be flexible but will define the number of facilitators you will need for the workshop. Ask your participants to send you a résumé of their expertise

and working field. Participants will work in groups of maximum six persons. Distribute them before the workshop assuring that each group is characterized by a diversity of approaches. Avoid having one group entirely made of participants sharing the same professional profile.

2.3.2/ Decide a Design Field Challenge

Your workshop participants may probably come from the same professional sector. However, every person has different expertise. There are technical engineers, creative directors, managers, administration personal, etc. Thus, decide a design field challenge interesting enough for all your participants.

Choose a challenge topic which can be of the interest of all participants. If not, some participants will automatically loose interest and the general atmosphere of the workshop will be affected. If possible, propose real challenges with the participation of real people involved in the issue in question. Real tangible challenges motivated our participants much more than others which were more abstract.

Examples taken from workshops we have driven include facility design for elderly people, co-design in urban regeneration and real-estate development or collaborative solution finding to increase international interchange among designers.

2.3.3/ Prepare your tools, methods, location and materials in advance

Our suggestion is to be flexible on the workshop you'll lead and facilitate.
Flexibility of tools, time frame, etc., should consider the context, the aim/objectives of the workshop, the knowledge of participants and budget (if applicable).

Prepare in advance a flexible list of specific exercises and methods to guide participants through each of the phases of the workshop. Invest enough time in this preparation: there are a multitude of methods and activities, but they have to fit participants' mentalities and expectations.

The workshop location and its facilities define radically the healthy atmosphere and the amount of participation in the workshop. Participants will get radically more motivated if the environment and atmosphere of the workshop has been chosen with care. For example, make it easy for participants to find a place to eat and relax.

Stock up on the right supplies: whiteboards, office supplies like markers, sticky notes, pens, paper, masking tape, small and large dot stickers. You will also need healthy snacks (apples, bananas, nuts, dark chocolate, coffee, and tea) to keep energy up. And of course, do not forget your timer to control the duration of the activities. You can use online timers if you prefer.

If your workshop includes prototyping, prepare in advance the material to produce them. They can be physical materials or digital means. It is very important to have them in advance in the room as the prototyping phase could start before expected.

2.3.4/ Plan excursions and networking sessions

They serve to engage with others' expertise and professional activity. An important aspect of these workshops is that new networks and relationships will be created in real scenarios. Participants expect that.

2.3.5/ Prepare your participants before the workshop

Send information about co-creation to the participants in advance. Include references to

books, projects and companies developing co-creation. In our workshops, participants who had accessed this information before the event were able to understand better the context of co-creation.

2.3.6/ Define the backbone methodology

Decide the most appropriate design cycle methodology you will use in the workshop. Many methodologies follow the typical cycle of divergent ideation and convergent decision. You may use one you have already experienced or learned. Creating your own methodology is possible, but be sure of having tested it successfully before implementing it at the workshop.

For instance, at the CO-CREATE workshops we organized in 2018, we used a methodology inspired by the *Design Sprint* methodology originally developed by Google. The *Design Sprint* helps to solve problems through designing, prototyping, and testing ideas with users. Participants first get to understand the problem in question and then explore divergent ways to solve it. Finally, a common criterion is found and a solution is chosen, prototyped and tested. Figures 7 and 8 show some moments of these workshops.

We divided the workshop in five slots or phases which may interleave along the workshop, not in a predefined order:

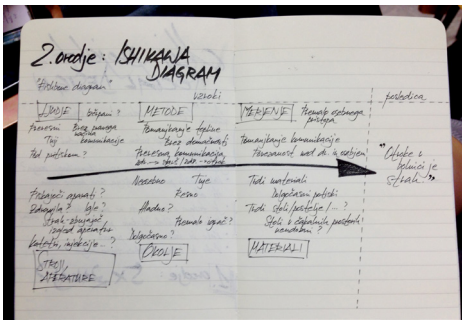
(a) Warming up activities in ALUO helped participants to focus their attention and engage with others.

(b) Drawing portraits of participants was used as ice-breaking activity at Deusto University.

(c) Workshop atmosphere in CIKE. Participants were organized in groups at different tables. We followed a strict no-laptop policy.

(d) After being introduced to the challenge, participants gathered and organized information for the issue in Linz.

(e) Understanding the rehabilitation needs of an urban site in Utrecht and elaborating a commented plan.



(f) Ishikawa diagram in ALUO helped participants to identify causes producing 'social design stigmas' among designers.

(g) The facilitator in Linz guiding the convergence of solutions offered on the issue of improving home care for elderly citizens.

(h) CIKE decided to use the 'Personas' method to simulate diverse users affected by the challenge (experts in Slovakia and abroad)

(i) Solutions are organized in CIKE following a common criteria.

(j) The clustering information method in Deusto allowed many participants to pay attention and stay active.

(k) Visualizing the spatial flow of a storytelling solution in Utrecht

(l) Presenting part of a storyboard for the storytelling project in Utrecht.

(m) Visualizing the storyboard in Linz.

(n) Prototyping with Lego in ALUO.

(o) Prototype presentation with the goal of receiving feedback and triggering discussion in ALUO.

(p) Examples of prototypes produced in ALUO.

Figure 7: Photo Credits: Jürgen Gruenwald (d, g, m) and Ales Rosa (a, f, p)

SLOT1 - Getting to know the basics.

During this slot, trainers may introduce theory about co-creation, methods for develop co-creation processes and examples. For illustrating real co-creation cases in this slot, we presented examples from the 'Best Practice Report'[19] in cocreation that this consortium has elaborated. These projects serve well to describe what a co-design process is and the issues related to its development. Participants also may get to know and understand that when engaging in a cocreation process, there are decisive elements to create an open mind. It is also the moment to explain how important the skills of the facilitators are, the preparation of a healthy environment for co-creation, the effective creation of working teams, the acceptance of diverse values and goals and the need to handle conflicts during co-creation.

SLOT 2 -Introducing the challenge and elaborating its map.

The challenge is the issue that participants will have to solve in this workshop using co-creation methods. In this slot, a challenge is briefed to the participants and later a so-called 'map of the challenge' has to be produced. The 'challenge brief' serves to put forward a specific issue and to improve it. It is a comprehensive description, a detailed picture of the issue in question.

19 The Best Practice Report can be downloaded from: http://www.cocreate.training/downloads

Elaborating a map of the challenge means that the participants may gather as much expert knowledge on the topic as possible. During this phase, facilitators have to make use of various methods to engage participants in becoming experts of their challenge.

Methods and tools you can also use:

- Interview Matrix facilitation method
- On-line Ethnography - gathering insights from on-line communities
- Mood Boards - collecting visual inspirations
- Hero Stories - envisioning ideas through speculative storytelling
- User Profiles - describing your users key attributes Ato Z
- User Journey Mapping - understanding complex user experiences
- Service Blueprints - documenting the visible and the invisible
- Value Proposition Canvas - addressing user pains and gains
- 5 Whys - uncovering root causes behind a problem statement
- Affinity Diagramming - translating research data into user needs

SLOT 3 -Coming up with solutions.

In the previous phase participants have gained enough expertise on the issue. The goal is now to propose as many solutions as possible and choose certain criteria to find the best solutions. The result of this third slot should be anonymous self-explanatory solution sketches. In this slot, facilitators may try to push participants to forge new connections, think differently and consider new perspectives. Often it is needed to support participants' creativity by coordinating activities which may boost the production of disparate solutions. After that, facilitators may also guide the participants through some methods helping them to define the criteria to find the solution. That decision will drive them to a particular set of solutions appearing acceptable. Among these possible solutions, one will be chosen by the participants.

Methods and tools you can also use:

- Bisociation Tool - or how to gain new and innovative solutions
- What, if - a tool to gain an additional perspective when looking for ideas
- Crazy 8's - a well-documented exercise, perfect for generating creative output
- Quickly Sketch Noting - documenting processes through sketching
- KJ Brainstorming - collaboratively connecting and prioritising ideas
- Brainwriting 6-3-5 - building on each other's ideas
- A/B Testing - A is better than B ... or is it?
- Flamethrower Rounds - or how to create a space for speed-critiques

SLOT 4 - Storyboard and prototyping.

The winning solutions are waved into a storyboard: a step-by-step plan for participants' prototypes. Making storyboards can take up a lot of time. In order to elaborate them during the workshop, facilitators may suggest certain constraints (time, extension, detail, etc.) to

assure that participants will not reinvent new ideas or solutions. This step is then followed by turning the storyboard into a realistic prototype. The goal of prototyping will be the production of an artefact supposing that it will not be perfect but just enough to learn from it and suitable to explain long-term solutions to others.

Methods and tools you can also use:

- Scenarios - exploring designs through storytelling.
- Storyboarding - using the power of comics to explain concepts.
- Quick Visualizations - we take the solution we've conceived and depict it visually interms of a hypothetical situation using one (or more) of the imagined users/profiles.
- Video Prototyping - communicating design concepts through video narratives; Wireframing - drafting a structural and functional skeleton.
- Mockups - creating visual models of envisioned products.
- Science Fiction Prototyping - using the future to improve the now.

SLOT 5 - Testing and setting up the next steps

In this phase participants will present the prototype. If possible, they may also have to test and interview possible users or stakeholders who can be affected by the solution obtained through co-design. The goal of this slot is to learn from their reactions and understand what has to be done next. Participants will understand how the entire prototype is reviewed. Facilitators may introduce methods to help participants to present their projects and to hold the interviews in an efficient manner. For example, activities to make users feel comfortable and to capture a real idea of how users react when they are confronted with a solution and its prototypes.

Methods and tools you can also use:

- Random Test (Spot Check) - By asking spontaneous questions, the potentialuser brings up issues that may have seemed self-evident to us, or that we didn't even think about when we were designing the service and for which we still haven't found answers in our blueprint.
- Usability Testing - identifying design flaws by early and frequent testing.
- Think-Aloud Protocol - learning from listening to your user's thoughts. This method is useful for evaluating an existing prototype to gain insights about what is actually happening while users interact with the product.
- Role-Playing - exploring the perspectives of users.

2.3.7/ Define a facilitation strategy.

As a facilitator, you will be responsible for creating a great learning experience for people new to co-creation and co-design and encouraging participants to roll up their sleeves and learn by doing. This requires some comfort and familiarity with guiding teams and thoughtful preparation. Some of your key responsibilities as a facilitator for this workshop are:

- Activate Learners: while working with students with diverse skills, you need to ensure collaboration and cross-pollination of ideas.
- Set the Tone: get teams in the frame of mind to learn and enjoy.

- Navigate Mindfully: use these materials to guide your teams as they explore cocreation approaches. But, nevertheless, you should pay attention to your learners' individual needs and help them by guiding them.

2.3.8/ Establish workshop policies

For instance, we often have decided to follow 'The nodevice Rule'. No laptops or mobile phones on the tables are allowed. Because we can't afford distractions in the room, Sprint authors have a simple rule: no laptops, phones, or iPads allowed. Devices may be used only during the coffee breaks. We suggest you follow the same procedure in your workshop.

2.4/ Documents to prepare for the Co-Design Workshop

Before the workshop

1. Workshop Objectives, Agenda and Context Document: Organize an internal document defining the specific goals for the workshop. That will determine the activities to be developed, their adaptation to a specific context and its final evaluation. The agenda will define the number of activities you can develop and their time plan.

2. Training Materials: These are visual aids, presentations, etc. Might be presented in slides or in hand-outs.

3. Facilitation Tools and Materials: The methods, games, energizing exercises, roleplay activities and prototyping techniques you expect to use during the workshop. Make a list of the materials you need to implement these methods (flip-charts, post-its, LEGO bricks, etc.).

4. Production Needs: A list with production needs to develop the workshop, including catering, special needs for specific people, transport, digital communication infrastructure, etc.

5. Introductory survey for obtaining personal information about the participants of the workshop: Like name, age, cultural level, expertise level in collaborative projects, occupation and all other possible aspects relevant to the development of the workshop.

6. Final Evaluation survey: it serves to evaluate the overall process of the workshop.

For the realization phas

1. Full description of a challenge that participants will have to solve. One for all, or one per team of participants (it is also possible that various teams solve the same project problem). Together with the description of the project, detailed information about matters of the decision-making project is given (e.g. which is the particular problem to solve and the idiosyncratic internal issues modulating the project). Additionally, detailed information is provided about specific stakeholders (e.g. age, mentality, opinion, cultural statements, etc.).

2. Personal Evaluation Survey about the activity. This document must include a questionnaire where participants can document and evaluate their process of training separately.

3. Collaborative Evaluation Survey about the activity. An evaluation questionnaire to be filled in together by all participants of the teams. It may address collective training issues and should condense a collective evaluational idea about the activity.

2.5/ Co-Design Workshop Structure

At least, the following types of activities must be developed:

1. Introduction to the workshop and its format
Inform participants of what they will do along the workshop.
Ask participants about their expectations.

2. Introduction to collaborative practices, its history, benefits and difficulties

3. Examples of real cases of co-design
You can make use of the Best Practice Report of CO-CREATE

4. Introduction to the key elements of collaborative design

(a) Stakeholders
(b) Facilitator: role and competences
(c) Collaboration events and their sequence
(d) Materials supporting collaboration inquiry
(e) Methodologies

5. Practical Co-Design: Solve a Briefed Challenge

(a) Team creation and presentation of the challenge to be solved

i. Participants work in teams. The minimum and maximum number can be variable but, from our experience, it is not recommendable to have less than four and more than ten topics to discuss.
ii. Each team is given an issue to solve which must be solved together. The problem can be invented by instructors, or taken from a real situation. Together with the design project description, detailed information about issues is given (e.g. which is the particular problem to solve and the idiosyncratic internal issues modulating the project). Additionally, detailed information is provided about specific stakeholders (e.g. the age, mentality, opinion, cultural statements, etc.).

(b) Stakeholders Analysis (for each team)

i. Make a list of stakeholders involved in the problem describing their name, their position, and the interest in the problem. Identify the insiders/primary (directly involved in the issue) or outsiders/secondary (other agents who can be affected or can affect the problem-solving), as opposite or marginalized.
ii. Make a visualization of the stakeholders on a piece of paper, visualizing the relationships and dependencies among them.
iii. Identify the possible conflicts among stakeholders.

iv. Evaluate your Analysis: How many different voices are present? Are these voices enough to cover the discussion and problem-solving process?

v. List the competences, skills and particular abilities a facilitator of this problem must have. Give them a priority number, from 0 (minimum) to 10 (maximum).

vi. Choose one person of the team as facilitator.

vii. Choose the most representative or important stakeholders from your list (the ones which must have a 'voice'), and distribute them among the participants of the team. From this moment on every person of the team must assume the responsibility of representing and defending the interests and intentions of every stakeholder.

(c) Start to solve the challenge

i. The facilitator articulates the cycle of co-creation following the backbone methodology (remember the section Guidelines to Prepare the Workshop).

ii. Trigger a first phase where participants must become experts of the challenge in question. Use tools and methods to make them understand the problem in all its extension. Only when participants show expertise in the issue, you can continue with the next phase.

iii. Trigger the ideation phase. Participants may propose as many creative solutions as possible. Use methods to increase the number of divergent solutions.

iv. Start the process of convergent thinking. Make participants revisit the information created. Show them tools for clustering and organizing both the information obtained and the solutions proposed.

v. Use tools to make participants define common criteria for a valid solution Which are the risks of each solution? Participants learn to prioritize aspects of the solution.

vi. Participants choose a winning solution and make a storyboard (or any other visualization) of how to develop it.

vii. Participants model and prototype the solution.

viii. Participants present the solution and receive feedback.

(d) Evaluation

i. Evaluate the overall process, the methodologies taken and the role of the facilitator.

ii. Evaluate why your problem could be solved or not.

iii. Identify the elements which could be improved.

iv. Evaluate if the collaborative methodology has improved the decision-taking in comparison with a traditional/hierarchical one.

v. Evaluate yourself (each of the participants): what have I learned from this activity?

6. Evaluation of the workshop: What can be improved in this workshop to better train ourselves in co-design?

2.6/ Workshop Timing

Certainly, it will be necessary to know in advance the number of hours you will have to organize your educational activities. Probably you will have to reduce or condense them if your time is quite limited. But this workshop can also be extended in units along several months and its proposed simulations can transform into real implementations!

In the scope of our CO-CREATE project, we have developed intensive workshops (8 hours per session) along three days with excellent results. As we have explained, training organizations will have to adequate the agenda to the specificities of the group involved. Within dynamic professional environments we have to face the possibility that trainees will not be able to completely stop their professional activity during three whole days for engaging with our workshop. Probably the activities described in this handbook will have to be divided into shorter sessions of two or three hours. This option may have to be considered in order to manage the schedule of the workshop successfully.

In regard to the structure of the workshop, we recommend the following agenda for a typical three days workshop:

Day 1

- First Half: Introduction, warming up activities, discussion about participants' expertise and expectations, introduction to co-design.
- Second Half: Introduction of the challenge and 'becoming an expert' phase

Day 2

- First Half: Ideation of ideas and their clustering, divergent thinking
- Second Half: Definition of common criteria, convergent thinking, selection of a reduced set of solutions

Day 3

- First Half: Winning solution definition, Storyboard
- Second Half: Prototype of solution and feedback reception, overall discussion about how the workshop went

2.7/ Conclusions

The second part of this handbook is focused on the presentation of a practical structure to develop successful Train-the-Trainer workshops on co-design. Trainers and organizations implementing this workshop can find here further information, which also helps them to manage the workshop content better.

Certainly a workshop is an educational event in which practice and hands-on activities are the core activity. Regardless of the time invested in practicing co-creation, trainers have to interleave theoretical sessions and tools to introduce methodologies and the co-design mentality to the participants.

Organizing a successful co-design workshop is not an easy task. The outcome will be defined by many aspects beyond initial educational intentions, like attendants' motivation and the adequacy of the workshop atmosphere. We recommend learning and following the guidelines explained in this handbook. However, a continuous evaluation of the evolution of the workshop is always needed. Ask participants regularly if the workshop fulfils their expectations, if they gain new knowledge and feel well while attending the workshop. Depending on the feedback, you may reorient the workshop towards a better setup and stage. Flexibility, evaluation and dynamism are the only methods to bring good results out of a workshop.

3/

ANNEX – USEFUL REFERENCES

3.1/ Literature and References on Collaborative Design

3.1.1/ Onlineresources-Designtoolkits, tools and methods

- Hyperisland:http://toolbox.hyperisland.com
- Collective Action Toolkit, Frog Design: https://www.frogdesign.com/work/frog-collective-action-toolkit
- IDEO Kit:https://www.ideo.com/post/design-kit
- Design Kit:http://www.designkit.org/resources
- Design Sprint with Google:https://designsprintkit.withgoogle.com
- Gamestorming:http://gamestorming.com
- Method Kit:https://www.facebook.com/methodkit
- A Design Thinking Toolkit by Domain7: https://domain7.com/designthinking
- The Proud Co- Design Hub:http://test.proudeurope.eu/proud
- Seeds for Change:https://seedsforchange.org.uk/tools.pdf
- Google Ventures Library:https://library.gv.com
- Ethnography: The First Step in Design Thinking: https://medium.com/media- ethnography/ethnographe-first-step-in-design-thinking-d3c533278978
- Design Library: Practical resources to support the process of design:http://library.ac4d.com/
- Service Design Tools for Co Designing: http://www.servicedesigntools.org/taxonomy/term/1
- Guides by Adaptive Path:http://adaptivepath.org/guides
- DIY: Practical Tools to Trigger & Support Social Innovation: http://diytoolkit.org/tools

3.1.2/ Useful Resources

- *Participatory Design Methods for Collaboration and Communication* by Tara-Wood; http://journal.code4lib.org/articles/12127
- *The Workshop Book: From Individual Creativity to Group Action (ICA series)* by Brian Stanfield. New Society Publishers (December 1,2002).
- *This is Service Design Thinking: Basics, Tools, Cases* by Jakob Schneider and Marc Stickdorn, BIS Publishers, 2010
- *Design. Think. Make. Break. Repeat. A Handbook of Methods* by Martin Tomitsch, Cara Wrigley and Madeleine Borthwick et. al., BIS Publisher, 2018
- *"DON'T PANIC - Service and Information Design: Methodology and Tools* by Petra Oven and Barbara Predan, Pekinpah and RRA LUR,2013

- *The Co-Design Workshop: The Facilitator's Pocket Guide* by Kevan Gilbert; https://connection.domain7.co-design-workshop-the-pocket-facilitators- guide-e36a6c9e08d4
- *Methods to support human-centred design* by M. Maguire. In Int. J. Human-Computer Studies, vol 55, 2001. p.587-634
- *Collaboration in Creative Design Methods and Tools.* Markopoulos, P., Martens,J.-B., Malins, J., Coninx, K., Liapis, A. (Eds.). Springer Verlag2016.
- *The Skilled Facilitator: A Comprehensive Resource for Consultants, Facilitators, Coaches, and Trainers* by Roger Schwarz. Jossey-Bass; 3 edition (November 14,2016)
- *Facilitator's Guide to Participatory Decision-Making* (Jossey-bass Business &Manage- ment Series) by Sam Kaner. Jossey-bass Business & ManagementSeries
- *Gamestorming: A Playbook for Innovators, Rulebreakers, and Changemakers* by Dave Gray. O'Reilly Media; 1 edition (August 2,2010).
- *More Than 50 Ways to Build Team Consensus* by Bruce Williams. Corwin; 2nd edition (June 21,2006)
- *The Right Way to Do Collaborative Design*: How to Avoid Designing by Committee by Ryan Thomas Riddle and MarcinTreder
- https://99u.adobe.com/articles/51643/the-right-way-to-do-collaborative-design-how-to- avoid-designing-by-committee
- The Dynamics of Collaborative Design: Insights From Complex Systems andNegotiation Research by Mark Klein etal.
- http://necsi.edu/research/engineering/ceraj-02.pdf

3.1.3/ Theory of participation and collaboration

- *Understanding the collaborative-participatory design* by Cristiele Scariot; https://content.iospress.com/download/work/wor0656?id=work%2Fwor0656
- *What is the difference between co-design and participatorydesign ?* https://www.quora.com/What-is-the-difference-between-co-design-and-participatory-design
- *Bridging the Designer User Gap* by J.Nielsen; http://www.useit.com/alertbox/designer-user-differences.html
- *First Rule of Usability: Don't Listen to Users* by J.Nielsen; http://www.useit.com/alertbox/20010805.html
- *Customer, consumer and user involvement in product development: A framework and a review of selected methods* by M. A. Kaulio. In Total Quality Management, Vol. 9(1), pp.141-149, 1998.
- *User involvement: a review of the benefits and challenges;* S. Kujala, Behaviour and Information Technology, Vol. 22(1), pp.1-16, 2003
- *User-designer collaboration during the early stage of the product developmentprocess.* PhD thesis by J. H. Lee. Queensland University of Technology, 2008
- *Converging Perspectives: Product Development Research for the 1990s* by E. Sanders; In Design Management Journal, Vol. 3(4), pp.49-54,1992

- *From User-Centered to Participatory Design Approaches* by E. Sanders. In SonicRim In Design and the Social Sciences. J.Frascara (Ed.), Taylor & Francis Books Limited, 2002
- *Co-creation and the new landscapes of design* by E. Sanders and P. Stappers. In CoDesign, 4: 1, 5 - 18, 2008
- *Routledge International Handbook of Participatory Design* edited by Jesper Simonsen and Toni Robertson. Routledge (25 Jun.2013)
- *Participatory Design: Principles and Practices* by Douglas Schuler. CRC / Lawrence Erlbaum Associates; 1 edition (March 1, 1993)