



Deliverable D1.13

Guidelines for Citizen Observatories
and Future Recommendations



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Executive Summary

The Ground Truth 2.0 project has delivered the demonstration and validation of 6 scaled-up citizen observatories in real, operational conditions, with 4 European and 2 African demonstration cases. It demonstrated the technological feasibility, the sustained use and the societal and economic benefits of such citizen observatories. The ultimate objective was the global market uptake of the concept and enabling technologies.

The work undertaken in WP1 'Social dimensions: Co-design, validation and impact assessment of citizen observatories' of Ground Truth 2.0 provided the basis for co-designing and co-creating citizen observatories via a range of social interaction mechanisms. It established a sound understanding of the social context to ensure that technological developments delivered by other work packages achieve the desired social innovation impacts in terms of environmental monitoring, cooperative planning and environmental stewardship.

This deliverable presents the lessons learned from the Ground Truth 2.0 approach, the engagement practices and the results of the technical and socio-economic impact assessments in the form of coherent guidelines for future efforts. It presents an overview of the main aspects relevant for the decision whether to initiate a co-design process for a citizen observatory and describes the process of co-designing a citizen observatory with the GT2.0 method.

Guiding principles for the co-design of citizen observatories

The GT2.0 co-design method is based on the following **guiding principles**:

- Living Lab principles
- Involve relevant stakeholders & problem definition
- Open-source tools and existing tools of partners
- Scope of Citizen participation in scientific activities
- Scope of citizen participation in natural resource management

Co-design process via phases and clusters of activities

The GT2.0 co-design method consists of a generic sequence of activities with possible iterations and feedback loops **in five phases of user-centred design activities**:

- 1) The **Process Planning** phase serves to initiate the co-design process, with a rapid context screening to identify who should be involved, formation of the project or facilitator team, and planning of the co-design process.
- 2) The **Social Innovation Design** phase serves to assemble a core group of stakeholders, negotiate a shared vision for the purpose of the Citizen Observatory and collect functional requirements for the platform in the form of 'stories' of how future participants will interact with the platform and data, or via the platform.
- 3) The **Tool Development and Launch** phase serves to translate the function design into a technical design; develop, code and test functional components of the platform and data aggregation tools; and .
- 4) The **Roll-out and Community Mobilization** phase serves to design, customize and test the interface and feedback components of the platforms together with core stakeholders.

- 5) The **Operation, Maturing and Evolution** phase starts the final set of ongoing tasks which will be implemented continuously during long-term operation of the observatory.

At the end of each major phase, progress is reviewed in terms of output quality, fit with project objectives, and resources planned for next phase. The 5 phases consist of 15 generic activity clusters, which are described in detail in Section 4.

Citizen observatory Community building process

The GT2.0 co-design method is based on the realisation that a crucial aspect for a successful co-design is that the process not only designs a technical platform, but first and foremost serves to **build sustainable communities** of relevant stakeholders. The co-design group ultimately serves to seed a stable, self-organizing social movement.

CO Community building consist of four phases (for detailed see GT2.0 D1.3):

1. **Initiation stage:** the first core CO community members are being recruited and with their input and participation in the co-design, the observatories will start to take shape.
2. **Stabilization stage:** (implicit) development of shared group values and norms, which are important for the bonding within any community (Pfefferbaum, 2017).
3. **Enlarging the CO Core Community:** grow the community that is active in the observatory. More stakeholder groups will be invited to join and the interactions in the observatories should multiply.
4. **Maintaining the community'**. In this final stage, less attention is directed to recruitment or gaining the interest of potential new community members. Instead, the citizen observatory focuses on sustaining the community members they have already engaged and on embedding continuity in their interactions.

1 Introduction

1.1 Background

Citizen science, enabled by ICTs, is on the rise. Using their own observations and mobile devices, citizens provide a new data stream that generates localized information about the environmental situation on the ground, complementing existing data systems and surveys. However, many efforts to implement citizen observatories are facing problems in sustaining engagement by citizens, limited scalability and limited impact on governance processes.

The Ground Truth 2.0 project delivered the demonstration and validation of 6 scaled-up citizen observatories in real, operational conditions, with 4 European and 2 African demonstration cases. It demonstrated the technological feasibility, the sustained use and the societal and economic benefits of such citizen observatories. The ultimate objective is the global market uptake of the concept and enabling technologies.

The work undertaken in WP1 'Social dimensions: Co-design, validation and impact assessment of citizen observatories' of Ground Truth 2.0 provided the basis for co-designing and co-creating citizen observatories via a range of social interaction mechanisms. It established a sound understanding of the social context which will ensure that the technological developments in the other work packages achieve the desired social innovation impacts in terms of environmental monitoring, cooperative planning and environmental stewardship. Within WP1, Task T1.8 'Guidelines' is dedicated to producing guidelines for developing citizen observatories for sustainability and recommendations for future efforts.

1.2 Purpose of this report

The purpose of this report is to capture the lessons learned from the Ground Truth 2.0 approach in the six Demonstration Cases, the engagement practices and the results of the technical and socio-economic impact assessments in a coherent set of guidelines for future efforts and to complement these with recommendations for policy makers.

1.3 Structure of this report

Following a short introduction and background in section 1, section 2 presents an overview over main aspects relevant for the decision whether to initiate a co-design process for a citizen observatory. Section 3 describes the process of co-designing a citizen observatory with the GT2.0 method, summarizing the main development phases and activity clusters.

2 Rationale for co-design of citizen observatories

2.1 What is a citizen observatory?

The exponential rise of citizen science initiatives is often welcomed as a solution for data scarcity, ground truthing EO data and calibrating models, as well as new forms of participation in Open Science and environmental management, decision making and policy. Citizen Observatories (COs) are particular examples of Citizen Science, consisting of dedicated communities of citizens, policy-makers and scientists using ICTs to actively collaborate in the collection, exchange and use of information and knowledge for a shared purpose. Citizen observatories are a specific form of community-based environmental monitoring systems and knowledge co-production initiatives that are typically implemented at local scale and with a long term focus on the established relationships.

Data collection by citizens and local communities is increasingly recognized for its potential to improve civil engagement in decision-making, monitoring and enforcement. It enables communities to 'own' local monitoring, and can help to integrate community-based institutions with formal law enforcement processes, but also improve transparency on the responses of environmental authorities to local concerns. Citizen observatories are receiving increasing attention owing to their potential to serve as a vehicle for participatory environmental governance, to facilitate social learning and create shared understanding of a local issue. COs can contribute to evidence-based decision making for environmental and natural resource aspects of sustainable development, and help trigger changes towards more sustainable individual as well as collective behaviour. By fostering interaction between different stakeholders, COs can empower citizens and communities to strengthen science and increase their influence in policy and decision making, thereby enabling them to be part of the solution to local and global environmental challenges.

2.2 Why co-design?

Despite advances in relevant digital innovations, standardisation and increasingly flexible funding mechanisms, many efforts to set up COs face problems with their implementation, with addressing the social and technical challenges of sustainable citizen observatories and with delivering on their notional potential. The actual achievement of envisaged impacts in terms of citizen engagement and empowerment, more participatory decision making and sustainable behaviour, as well as the long term sustainability of COs remain challenging. It requires building of a community agreeing on a shared purpose.

To harness the potential of COs for sustainability and to ensure the sustainability of COs, the Ground Truth 2.0 project argues that a socio-technical approach is required that conceives COs as true social innovations, consisting of a careful combination non-technological and technological elements that serve to meet societal needs which are not met by market mechanisms alone. Citizens (and other stakeholders) need to be involved at every step of the way, to create a shared understanding of the issue, agree on ways to address it, and become the seed of a stable social community. As such, a shift is required from pre-conceived CO concepts and technological solutions to the process of developing and fostering COs that are meaningful to and helpful for (local) stakeholders in achieving their objectives, in the short and in the long term.

Such a co-design process needs bring together relevant actors, guide them towards a shared understanding and purpose of their CO and tailor digital innovations to enable them to actively collaborate in the

collection, exchange and use of information and knowledge. In sum, COs require a co-design process that carefully combines the social, technological and operational dimensions of COs in a coherent process.

Citizen observatories are hybrid structures that include (1) technical features (IT platform and Smartphone applications), (2) services and joint activities (enabling and improving information for decision makers and collaborative planning processes), as well as (3) community building activities required to reach critical mass and enable commercialization. A citizen observatory as a 'product' is highly complex with a strong need for integration and coordination, between groups of stakeholder the envisioned solution is little defined or structured, and requirements are expected to evolve dynamically based in intensive stakeholder engagement, linear 'waterfall'-based methods do not provide a useful approach. A CO depends on the formation of a sustainable group of 'members', supporting its creation requires a design process that hands stakeholders control while preserving elements that make COs tools for positive change.

To be effective, the design process of citizen observatories has to hand control to stakeholders, ensuring that the platform addresses the day-to-day challenges and tasks of community groups, enforcement agencies and local authorities, fit-for-purpose in natural resource management while maintaining integrity of jurisdictions, quality of monitoring data sets and privacy of sensitive data

2.3 What is special about the Ground Truth 2.0 co-design methodology?

The Ground Truth 2.0 methodology for co-designing sustainable citizen observatories is based on a socio-technical approach. It makes explicit the need to fostering a sustainable community of relevant actors in tandem with co-designing enabling technologies. Building new or stronger relationships between the involved actors is a core target in order to achieve collectively agreed sustainability goals in their local environment. The co-design methodology was developed and validated by the Ground Truth 2.0 project in six demonstration cases in distinctly different operational and cultural conditions. It set out to demonstrate a co-design approach that 'starts with the last mile', grounding all resulting research and policy in stakeholder realities and ensuring their buy in. and to develop locally relevant and sustainable citizen-based monitoring schemes that allow local ownership of the resulting processes, changing power relationships and improving decision-making in natural resource management.

The methodology consists of guiding principles and a generic sequence of activities with possible iterations and feedback loops, inspired by the Living Labs FormIT process (Ståhlbröst and Holst, 2012). The methodology approaches co-design as an iterative process consisting of a series of 'interaction moments' with key stakeholders. Starting with a 'blank page' regarding the purpose or scope of the future observatory, a sequence of steps facilitates collective identification of challenges, objectives and requirements, while actively supporting community-building as part of the process. The design and development of the CO tools and platforms are refined in five phases, in a user-centred design approach with requirements framed in terms of user narratives, or "stories", not in terms of technical descriptions. A distinct feature of the GT2.0 co-design method is the facilitation of interactions between citizens, decision-makers and scientists or data aggregators right from the start of the initiative, leading to results more efficiently and with stronger influence on decision making.

The Ground Truth 2.0 co-design methodology is adaptable to different geographical contexts, social settings and to different thematic issues. It was successfully employed in four European and two African countries, producing meaningful results in settings ranging from rural Zambia to urban Belgium. In terms of results, the purpose and shape of several observatories as designed by stakeholders differed significantly from initial expectations formulated by researchers during the proposal stage. Furthermore, the stakeholder designs changed and evolved significantly over the co-design period, as participants realized

that things they originally wanted might not lead to the intended results. The results of the validation consistently show that the value of co-designing citizen observatories starts before delivery of platforms and the application of apps and other tools for joint community-based data collection. It is linked to a process that facilitates active social learning, which can only occur if interactions go beyond one-off consultation.

3 Guidelines for co-designing sustainable citizen observatories

3.1 Guiding principles for the co-design process

The following guiding principles apply to the co-design of citizen observatories via the Ground Truth 2.0 co-design methodology.

i. Living Lab principles

The GT2.0 co-design methodology stipulates that all co-design activities embody the guiding principles of the Living Lab methodology¹, namely that the co-design process of the citizen observatory:

- *Creates **value** for users by understanding their needs and motivations*
- *Give future users **influence** on the decisions*
- *Aim for **sustainability** in economic, environmental and social terms*
- *Involve multiple perspectives and collaborate widely for **openness***
- *Carry out activities in the **real-life context***

ii. Involve relevant stakeholders & problem definition

In order to fully capture the potential of citizen observatories in terms of knowledge co-creation in applied settings, the Ground Truth 2.0 co-design methodology stipulates a diverse range of stakeholders should be involved in the co-design process as early as possible, namely

- *Citizens and civil society organisations*
- *Scientists and expert advisors*
- *Public sector actors - legislative (policy makers)*
- *Public sector actors - executive (local authorities; implementing agencies)*
- *Industry/private sector*

The GT2.0 co-design methodology further postulates that no single stakeholder (pre)defines the challenge that the citizen observatory will address. Nevertheless, the specific roles and authoritative power of the stakeholders involved in the co-design process of the citizen observatory may differ according to cultural contexts and the co-design dynamics can be adjusted accordingly.

iii. Open-source tools and existing tools of partners

The activities use open source tools (e.g., for data collection Epicollect5 [<https://five.epicollect.net/>], Open Data Kit [<https://opendatakit.org/>]) and existing tools of affiliated partners, provided that these serve the citizen observatory requirements identified and agreed upon in the citizen science co-design process. Furthermore, the method adheres to open data standards, in particular the GEOSS standards and Data Management Principles.

iv. Scope of Citizen participation in scientific activities

The method for the production of scientific evidence and knowledge, the 'scientific method' consists of the following steps:

- *Framing of the research question*
- *Research design*

¹ Ståhlbröst, A. and M. Holst (n.d.) The Living Lab Methodology Handbook, University of Technology and Centre for Distance-spanning Technology, Sweden [https://www.ltu.se/cms_fs/1.101555!/file/LivingLabsMethodologyBook_web.pdf].

- *Data collection*
- *Data analysis and interpretation*
- *Understanding results*
- *Publication/management action*
- *Quality control (throughout)*

The GT2.0 co-design methodology stipulates that, in principle, citizens can participate in any stage of knowledge production in line with the scientific method, rather than being limited to the data collection stage (as is often assumed).

v. **Scope of citizen participation in natural resource management**

The Ground Truth 2.0 co-design methodology does not prescribe a focus on the production of data and knowledge as the main focus and form of stakeholder interaction in a citizen observatory. Instead, it stipulates that citizen observatories serve to facilitate stakeholder interactions in terms of three major domains (see Figure 1): Environmental Monitoring mainly focused on implicit and explicit data collection by citizens; Cooperative Planning including interactive activities between citizens and decision-makers such as consultation, feedback and discussion; and Environmental Stewardship with fully realized dialogues and shared responsibility for natural resource management. These differ in their emphasis on the production of data and knowledge, the extent to which knowledge is applied and generated insights are acted upon.

The co-design process facilitated by the application of the Ground Truth 2.0 co-design methodology serves to identify which type(s) of interactions are desired and envisaged by the community of stakeholders, i.e. what ‘flavour’ their citizen observatory will have. The related choices and decisions taken during the co-design process provide direction for the impact pathway of the citizen observatory, i.e. co-designing for impact.

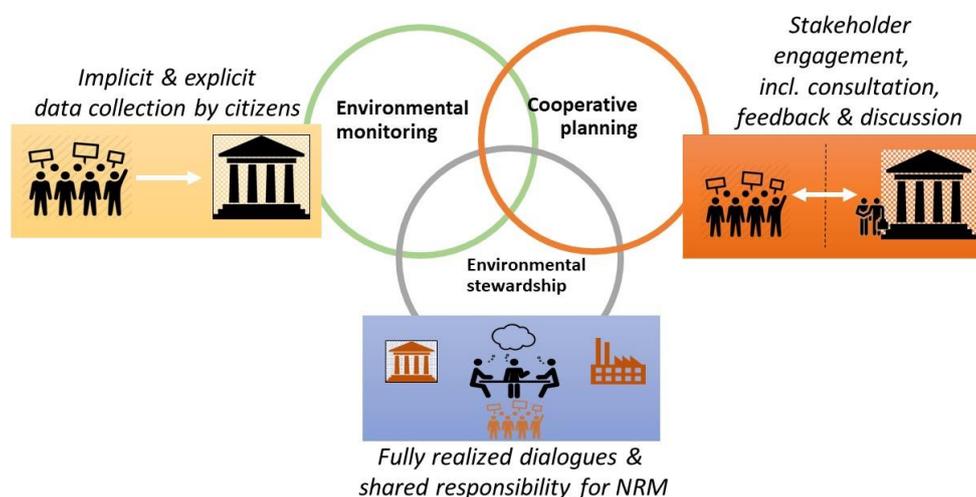


Figure 1 Stakeholder interactions in citizen observatories

3.2 Overview of co-design process

The GT2.0 co-design method consists of a generic sequence of activities with possible iterations and feedback loops **in five phases of user-centred design activities:**

1. The **Process Planning** phase serves to initiate the co-design process, with a rapid context screening to identify who should be involved, formation of the project or facilitator team, and planning of the co-design process.
2. The **Social Innovation Design** phase serves to assemble a core group of stakeholders, negotiate a shared vision for the purpose of the Citizen Observatory and collect functional requirements for the platform in the form of 'stories' of how future participants will interact with the platform and data, or via the platform.
3. The **Tool Development and Launch** phase serves to translate the function design into a technical design; develop, code and test functional components of the platform and data aggregation tools; and .
4. The **Roll-out and Community Mobilization** phase serves to design, customize and test the interface and feedback components of the platforms together with core stakeholders.
5. The **Operation, Maturing and Evolution** phase starts the final set of ongoing tasks which will be implemented continuously during long-term operation of the observatory.

At the end of each major phase, progress is reviewed in terms of output quality, fit with project objectives, and resources planned for next phase. The 5 phases consist of 15 generic activity clusters, which are described in detail in Section 4.

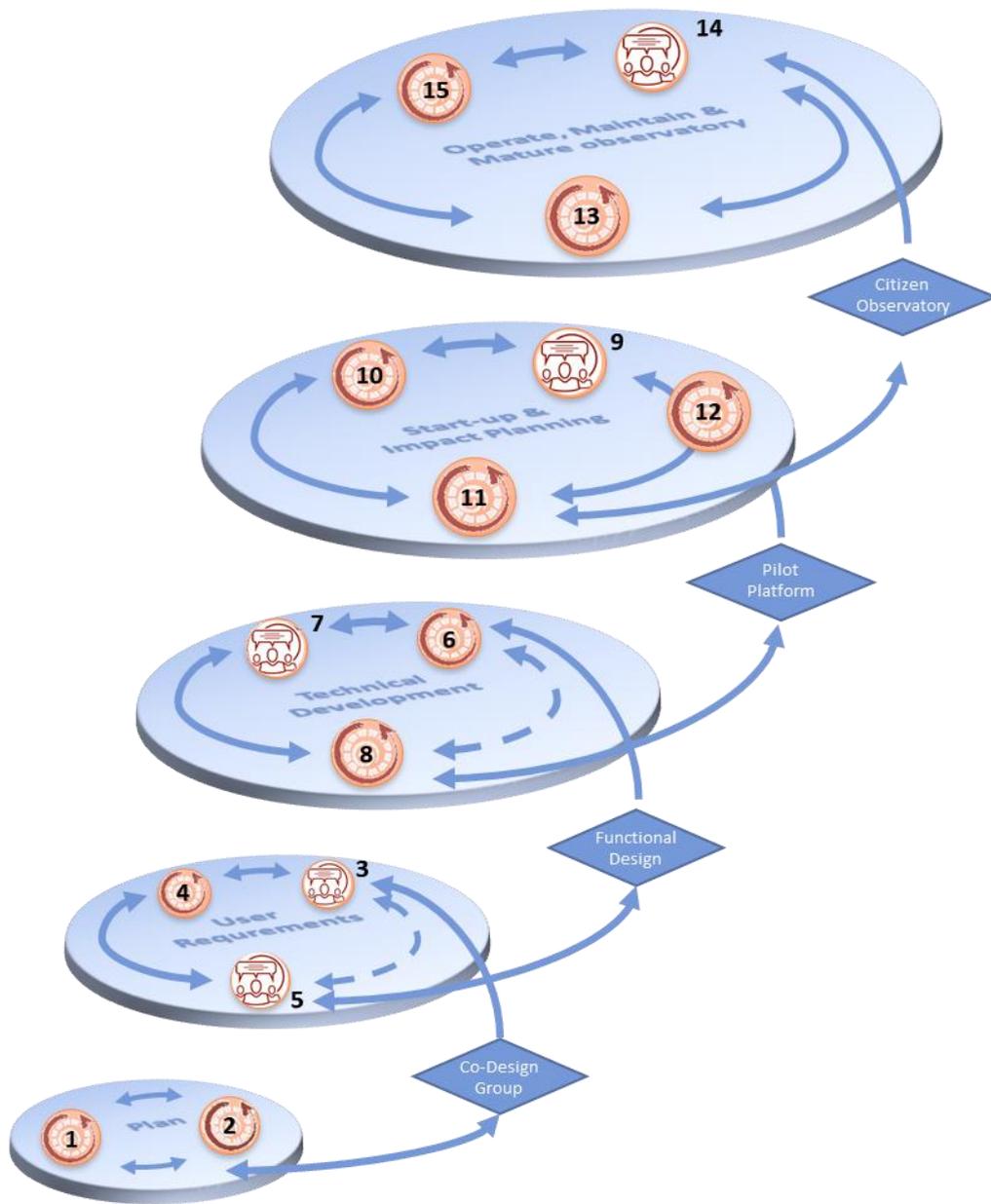


Figure 2 The GT2.0 Co-Design "Spiral"

3.3 Overview of the CO community building process

A crucial aspect for a successful co-design is the understanding that the process not only designs a technical platform, but first and foremost serves to **build sustainable communities** of relevant stakeholders. The co-design group ultimately serves to seed a stable, self-organizing social movement.

Citizen observatories represent a form of collective action, meaning that citizens, data aggregators, scientists, policy- and decision-makers "join" a collective effort. Practically, this effort creates a virtual community, commonly defined as an *"aggregation of individuals or business partners who interact*

around a shared interest, where the interaction is at least partially supported and/or mediated by technology and guided by some protocols or norms.” (Porter, 2006). A community consists of stakeholders who identify or perceive themselves as being a part of it. Community building means to foster social interactions that lead stakeholders to identify with the group outcome, which requires not just intellectual, but also emotional experiences. While the products of the generic co-design steps shape the technical platform, activities and organization of the Citizen Observatory, ensuring the steps are implemented by future users, together and in a collaborative fashion, serves to mobilize a passive target audience, and shape a disconnected assembly of stakeholders into a social group. Visible and symbolic acts, such as signing a consent form, registering an account for an app, posting to an online platform, participating in planning meetings, or in organized data collection campaigns, all serve to create a sense of ‘membership’ and being a part of something bigger.

Community building consist of four phases (for detailed see GT2.0 D1.3):

5. **Initiation stage:** the first core CO community members are being recruited and with their input and participation in the co-design, the observatories will start to take shape.
6. **Stabilization stage:** (implicit) development of shared group values and norms, which are important for the bonding within any community (Pfefferbaum, 2017).
7. **Enlarging the CO Core Community:** grow the community that is active in the observatory. More stakeholder groups will be invited to join and the interactions in the observatories should multiply.
8. **Maintaining the community’.** In this final stage, less attention is directed to recruitment or gaining the interest of potential new community members. Instead, the citizen observatory focuses on sustaining the community members they have already engaged and on embedding continuity in their interactions.

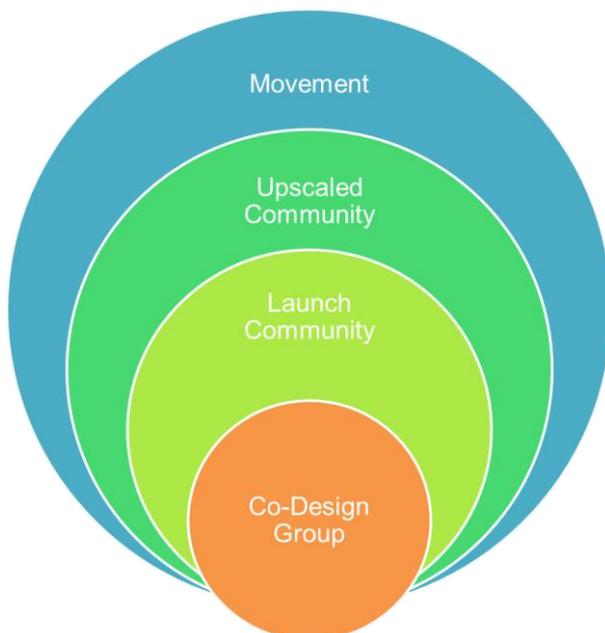


Figure 3 Evolution of a CO community from co-design group to social movement

Important to distinguish between the co-design group and the long-term community. The design process can involve people who will not be part of active CO communities, most notably members of project teams professionally tasked with creating the observatory. At the transition stage from co-design to operation, such actors might leave, and the transition can only be successful if such members of the co-design group are not essential to the identity and function of the community.

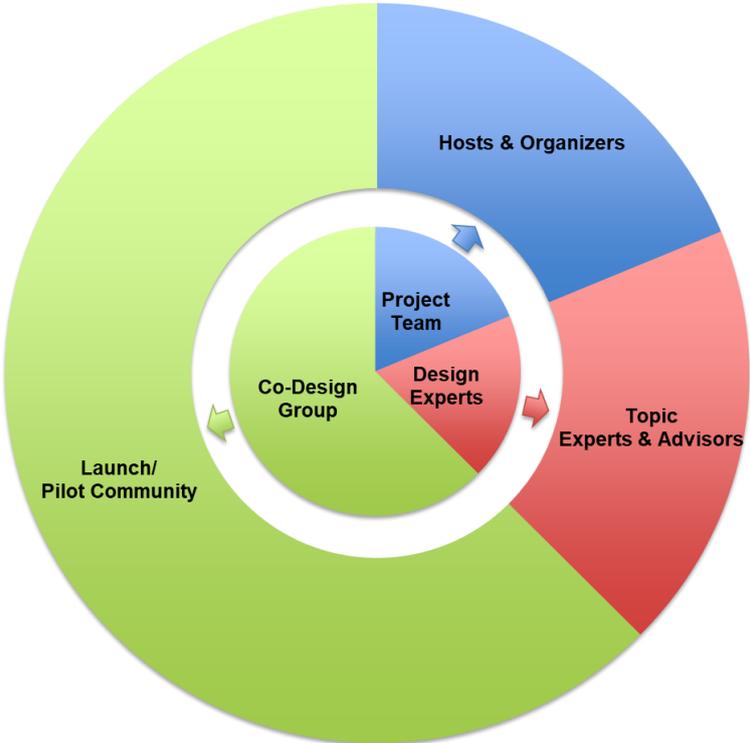


Figure 4 Transition of participating stakeholders from co-design group to CO community

4 The Co-Design Process

4.1 PHASE I: Co-Design Process Planning

A CO depends on the formation of a sustainable group of participating ‘members’ from the community, government agencies, industry, academia, and local institutions (Whitelaw et al., 2003). Creating a motivated, balanced and inclusive community requires a design process that hands stakeholders control while preserving elements that make COs tools for positive change. Accordingly, facilitating a successful co-design process requires preparation and awareness for fundamental dynamics in the target area.

The main objectives of the planning phase are to conduct a rapid screening of the context to discover factors relevant for the co-design process, and based on the results, outline a tailored co-design process. Adapting the process to the situation includes, for example, adjustment of timelines, and the number and pacing of face-to-face-events to local culture. Furthermore, the planning process has to select co-design tools for each specific process, matching both the culture and capacity of local stakeholders, and type of knowledge and level of detail the group has to co-produce for the purpose of the design process.

The phase is completed when the co-design team has a complete and approved roadmap for the co-design process, including an identified group of stakeholders willing to be part of the co-design effort.

4.1.1 Activity Cluster 1: Rapid Context Screening

PURPOSE AND RESULT

Rapid context screening serves to identify essential stakeholders involved with the natural resource issue the observatory initiators wish to address, screen for existing or past initiatives, and get a sense of the state of technology and tools already available for similar purposes.

The result of rapid context screening is a clear understanding of the playing field on which the co-design process will take place, in terms of boundary conditions (e.g. legal limitations, technical feasibility), mandatory players and rules of the game (e.g. rights holders and procedures for participation), as well as potential barriers (e.g. vested interests) and enabling factors (e.g. like-minded initiatives).

WHO DRIVES THE PROCESS

Observatory Initiators and Co-Design Facilitators

COMMUNITY BUILDING PHASE

Preparation – Identify potential community members

CO-DESIGN ACTIVITY DESCRIPTION

1. Screening of context dimensions & main stakeholder categories
2. Screening of reference technologies
3. Screening of existing data sets and structures
4. Screening of existing technical or legal standards

OUTPUTS REQUIRED TO MOVE TO NEXT CLUSTER

- Context Map with core political, legal, technological environmental and social boundaries
- List of key stakeholders linked to the issue
- Inventory of available Datasets
- Basic outline of the platform architecture
- Basic outline of the Data Model

EXAMPLE TOOL/METHOD

- Rapid Screening Interview with observatory Initiators
- Guided Context Mapping Exercise
- Technical 'Best Practice' Search
- Data discovery (e.g. Google data set)
- List of standards that can be useful for Citizen Science
- See also inventory of tools and methods in Annex 1

4.1.2 Activity Cluster 2: Co-Design Roadmapping and Tailoring of Methods

PURPOSE AND RESULTS

The purpose of Co-Design Roadmapping is to develop a specified project/process plan for a co-design process appropriate in the specific context; select and adapt tools for the following steps of the co-design process depending on the issue, context, stakeholders and capacities of the facilitation team; and to identify and engage potential members of the (initial) co-design group.

The result of the Roadmapping activities is a process plan for the co-design process, a clear understanding of capacities, technical and context factors relevant for effective expectation management during the opening of the process, and a group of core stakeholders aware of the process and willing to participate in the co-design process.

WHO DRIVES THE PROCESS

Co-Design Facilitators

COMMUNITY BUILDING PHASE

Initiate – recruit initial community members

CO-DESIGN ACTIVITY DESCRIPTION

1. Identify potential Co-design group members (using prioritization tool)
2. Reach out to potential co-design members (Personal connections, Bilateral meetings)
3. Reach out to enabling environment authorities crucial (using the Stakeholder Engagement matrix)
4. Identify the conditions for holding successful co-design interactive sessions (cultural settings, specific stakeholder relations and hierarchies that should be taken into account)
5. Screening of the incentives and barriers (of the co-design members) to participate in co-design process
6. Select applicable technical standards for initial architecture
7. Identify hard restrictions on technical scope (capacity projections)
8. Select the appropriate co-design tools from the inventory of co-design/living lab tools
9. Create the co-design process plan and playbook (compendium)

OUTPUTS REQUIRED TO MOVE TO NEXT CLUSTER

- List of (15-20) stakeholders that will be invited to co-design process Customized invitation message for each stakeholder
- Defined set of co-design tools
- Manpower estimates/budget scenarios

EXAMPLE TOOL/METHOD

- Stakeholder prioritization exercise (how far from the centre of sunburst)
- Light TPB method
- AMO building blocks (what is in it for them)
- Inventory of co-design/living lab tools
- Warm acquisition: "Have-your-network-invite-their-network" and connect with pre-existing groups with similar objectives;
- Spiral and Process Outline
- Capacity Projections
- List of technical parameters
- See also inventory of tools and methods in Annex 1

4.2 Phase II: Social Innovation Design

The success and impact of a citizen observatory as a social innovation is inherently linked to its overall purpose which transcends beyond the motivations and expectations of individual actors to a collective, societal level. This is the most decisive phase for the co-design process and likely also the longest.

Key activities in this phase therefore consist of the initiation and formation of a co-design group of relevant actors that is guided to arrive at a joint understanding of, and agreement on, the societal challenge to be addressed by the desired CO, and hence the purpose of the CO. A key aspect of the Ground Truth 2.0 methodology is the inclusion of all relevant actors - including authorities, decision makers and policy makers - from the start. The joint problem analysis by all relevant actors ensures that the framing of the CO purpose is consensual and serves to identify leverage points for the CO. The specific thematic issue of the future CO is the 'raison d'être' that ties the co-design group members together. The articulation of the CO's vision, mission and objectives are therefore key activities. The facilitation of the interaction moments in this phase needs to be sensitive to this. The mobilisation of political actors to collaborate in the design of the CO may nevertheless require bilateral briefings and meetings.

The capture of functional CO requirements is based on user-centric design principles to help developers see the planned platform 'through the users' eyes' and consist of eliciting user needs (e.g. by means of user stories) and matching these to high level, generic descriptions of the key actions that users need the system to help them perform. This results in a tailored overview of the features (a story map) of the CO, a case-specific architecture and technical requirements against which to match existing (or to be enhanced) tools. Interaction moments with the co-design group are essential to validate the functional design, ensuring consistency between the CO vision, user stories and practice, raising awareness of the co-design group of the implications of their functional choices and prioritising the implementation of specific functions.

Phase 2 is completed when the co-design group has a documented, approved functional design that has been reviewed as feasible by the technical developers, and reflects the functionality required to effectively support achievement of the vision and objectives agreed by the community.

4.2.1 Activity Cluster 3: Initiate Co-Design Group and Capture User Requirements

PURPOSE AND RESULTS

The purpose of the co-design initiation is the kick-off the co-design process with formation of the co-design group in a first formal Interaction Moment and agreement on the purpose and planned use of the observatory. This includes the development of a shared understanding of the issue the CO community plans to address, a vision what an improved situation would look like, and agreed goals and how the citizen observatory will contribute to the solution. In a final step, the initiation serves to capture stakeholder ideas of specific activities and interactions the technical platform would have to facilitate with and among local stakeholders to achieve the agreed goals.

The result of the initiation is an active co-design group, documented agreements of the purpose of the observatory (challenge, vision, mission and objectives), collectively developed intelligence useful for further co-design, as well as initial user requirements captured as non-technical stories

WHO DRIVES THE PROCESS

Co-Design Facilitators

COMMUNITY BUILDING PHASE

Initiate and Form – shape community with inputs of stakeholders

CO-DESIGN ACTIVITY DESCRIPTION

1. Form and initiate co-design group
2. Interactive capture of user requirements
3. Analysis of stakeholder landscape
4. Identify potential community leaders
5. Baseline analysis for Impact Assessment
6. Analyse user stories and check against the vision, mission and objectives of the CO (consistency)

OUTPUTS REQUIRED TO MOVE TO NEXT CLUSTER

- Co-design group formed
- Problem analysis: identify the central challenge and identifying the CO leverage points
- Vision, mission & CO objectives
- List of user stories describing the required functions of the platform
- Prioritized Stakeholder map
- Baseline for impact assessment

EXAMPLE TOOL/METHOD

- Pyramid light
- User stories/Story Mapping
- CO Domain Selection
- Stakeholder mapping with "search profile"
- Engagement Priority Sunburst
- GT Integrated Stakeholder analysis framework

Tabelle 1 Example CO visions and missions from the GT citizen observatories

CO identity & location	Challenge addressed	Vision of the CO	Mission of the CO	Core stakeholders/owners
<p>Name: Grip op water Altena</p> <p>Location and scale: Island of Altena (covering the municipalities of Werkendam, Aalburg en Werkendam), The Netherlands</p>	<p>Urban flooding ("water nuisance") caused by extreme rainfall and climate change</p>	<p>In Land van Heusden en Altena the municipalities, water authority, citizens and farmers understand each other's interests and ways of working and are together responsible for limiting the damage by pluvial flooding in urban and rural areas.</p>	<p>The citizen observatory is a place (on- and offline) where collected observations, knowledge and warnings are shared, where bottlenecks and measures are constructively discussed along short communication lines and where it is clear which actions are taken by which party.</p>	<p>Water authority, municipalities, nature focussed interest groups and individual citizens</p>
<p>Name: Maasai Mara Citizen Observatory</p> <p>Location and scale: A part of the wider Mara ecosystem (incl. Maasai Mara National Reserve, the Mara Triangle and conservancies around it), Kenya</p>	<p>Balancing biodiversity management and sustainable livelihoods</p>	<p>We envisage a society in which all stakeholders are working together to ensure the balance between sustainable livelihoods and biodiversity management in the Mara ecosystem.</p>	<p>The citizen observatory will constitute a multi-stakeholder platform for generating and sharing of data, information and knowledge to improve policy making and implementation for sustainable livelihoods and biodiversity management in the Mara ecosystem.</p>	<p>National level authorities, county level authorities, individual local Maasai, organised groups of citizens, citizens associations, local universities, museums, community churches and knowledge and data service providers</p>
<p>Name: Meet Mee Mechelen</p> <p>Location and scale: City of Mechelen, Belgium</p>	<p>Air quality and ambient noise in the city</p>	<p>In Mechelen, all stakeholders cooperate in a sustainable and constructive manner to keep on improving the air quality and the soundscape.</p>	<p>The citizen observatory becomes an online and offline meeting place where we gather and build data, information and knowledge about air quality and ambient noise and make all accessible for everyone, to support policy making and initiatives for a better living environment.</p>	<p>National level authorities, city administration, civil society organisations, and research institutes</p>

CO identity & location	Challenge addressed	Vision of the CO	Mission of the CO	Core stakeholders/owners
<p>Name: Niti Luli CBNRM Observatory</p> <p>Location and scale: Jurisdiction of a 'Community Resources Board', an institution under Zambian Wildlife law linked to traditional chiefdoms, Zambia</p>	Community-based Natural Resources Management	Communities, government agencies and donors collaborate respectfully and effectively in implementing natural resource management and conservation efforts that benefit local communities.	The “Niti Luli” platform will provide the virtual space for a “permanent community meeting” of local communities, government agencies, NGOs and donors, improving coordination between government agencies and donors, and giving communities more influence in decisions affecting their lives and livelihoods.	Village Action Groups, CRBs and regional/national CRB Associations; government departments with CBNRM involvement; district administrations; town councils, conservation NGOs
<p>Name: RitmeN-atura.cat</p> <p>Location and scale: The part of Spain that encompasses the autonomous community of Catalonia, Spain</p> <p>Issue addressed:</p>	Creating collective knowledge about the local impact of climate change on nature and its rhythms in Catalonia in order to contribute to better adaptation policies	In the digital world there will be a place that allow citizens, managers and politicians to access and share phenological information. Such a place will allow communication among stakeholders and will be sustainable in time.	The Observatory will be the place where phenological data, in particular that collected by citizens, will be stored and make it accessible in real time, with the aim of influencing decision making.	Meteorological institute, research centre and representatives of regional authorities and of citizen-observer communities.
<p>Name: VattenFokus</p> <p>Location and scale: Mälarendalen region, Sweden</p>	Water quality management in socio-ecological systems in the Mälarendalen region	We envision a society where government, business, citizens, researchers and civil society organisations collaborate to be active stewards of a sustainable environment.	Our mission is a citizen observatory that supports all stakeholders to collaborate in the governance and action of the aquatic ecosystems by collecting data, sharing knowledge, making data accessible that complements established governmental initiatives.	Administrative and political representatives of local authorities, local community members, water authorities, NGOs, the cadastre and the university

4.2.2 Activity Cluster 4: Functional Design of the Citizen Observatory

PURPOSE AND RESULTS

Purpose of the Function Design activity is the translation of user requirements from non-technical stories into a list of technical functionalities linked to tools and modules that can deliver such functionality, based on the generic architecture identified in the roadmapping. In the process, assessment of the availability of tools and estimations of development efforts also establish the feasibility of the platform as envisioned by stakeholders.

The result of the functional design activity is a documented design document, for example in the form of a story map, description of a specified architecture, data model and infrastructure plan, as well as a revised list of user stories adjusted with expert input of the design team and technical developers..

WHO DRIVES THE PROCESS

Technical Developers

COMMUNITY BUILDING PHASE

Form – base design on inputs of stakeholders to support the envisaged community

CO-DESIGN ACTIVITY DESCRIPTION

1. Map stories against the generic CO functionalities (headlines)
2. Cross-check and add mandatory features (quality control, user management, data management) and functionalities (constituting CO)
3. Identification of tools that deliver required functionalities
4. Draft specialized architecture and estimate scale of infrastructure
5. Adjust data model
6. Review standards to match requirements

OUTPUTS REQUIRED TO MOVE TO NEXT CLUSTER

- Revised and completed story map
- List of suitable/recommended tools
- Specialized architecture
- Draft data model
- Infrastructure Plan
- List of recommended functionalities for pilot CO

EXAMPLE TOOL/METHOD

- Generic CO Story Map (GT2.0 D1.5)
- Architecture and Data Modelling (e.g. UML)
- Manpower/budget estimates per feature (e.g. story points) and infrastructure
- User Requirements Tracking Tool (GT2.0 D1.6)

4.2.3 Activity Cluster 5: Stakeholder Validation of the Functional Design

PURPOSE AND RESULTS

The purpose of the Functional Design Validation is ensure that the functional design developed by technical partners (based on interpretations of user stories), faithfully represents the platform as envisioned by the stakeholders. It also serves to provide feedback to stakeholders in the form of suggestions and options, as well as on effort required to deliver the requested platform. This feedback serve to initiate social learning in the co-design group, as the group collectively clarifies what is meant by certain stories and negotiates priorities for the design of the platform.

The result of the functional design validation is a functional design revised and approved by the stakeholders, and the formations of a group identify, turning the co-design group into a community

WHO DRIVES THE PROCESS

Co-Design Facilitators

COMMUNITY BUILDING PHASE

Initiate and form – this stage initiates transition from co-design group (CO designers) to CO community (CO members and users)

CO-DESIGN ACTIVITY DESCRIPTION

1. Interactive validation of final user requirements and functional design prioritisation
2. Start community building
3. Initiate handover of responsibilities to community leaders
4. Initiate outreach to target audiences

OUTPUTS REQUIRED TO MOVE TO NEXT CLUSTER

- Validated, prioritised functional design (Tailored CO user story map)
- A critical mass of people willing to do 'leg work'
- Practical orientation of the CO that community members identify with/feel passionate about

EXAMPLE TOOL/METHOD

- Fight for attention: Informal personal attention and local action
- Self-assessment of community members (SWOT)

4.3 Phase III: Tool Development and Launch of Observatory

The core objective of Phase 3 is to translate the functional design delivered by the stakeholders into a functioning technical platform that fulfils stakeholder expectations. This phase is a critical stage in the co-design process, as the introduction of gadgets and technical tools can easily distract from the vision the community developed. Legacy effects of existing technology used by stakeholders involved, or attempts to appropriate attractive technologies are both potential factors influencing the process. Therefore, the co-design facilitation has to ensure that technical developers remain accountable to the group and, during the interface design, interact meaningfully with the group to appreciate the intentions behind the feedback they receive. Furthermore, community building activities have to continue to preserve momentum in the group. Planning that public launch event, involving important discussions and decisions, such as regarding target audiences and the types of engagements of ‘outsiders’ during a launch event, provide opportunities to develop rules and norms for the group. Most importantly, the public launch at the end of the phase asks community members to publicly stand up and identify themselves as members of the CO, an important symbolic act that reveals if the co-design group is indeed transforming into a community.

Phase 3 is concluded when the a functional platform is publicly available for use, and has been introduced to identified target audiences in a (series of) structured launch event.

4.3.1 Activity Cluster 6: Technical Design of the Citizen Observatory

PURPOSE AND RESULTS

The purpose of the technical design stage is the full translation of the functional design into a final technical architecture, followed by acquisition of the required hardware and software, and set up of a prototype platform. Depending on the type and complexity of the intended CO, the technical design activity can range from the set up of a tested standardized tool, to custom development of bespoke software systems.

The result of the technical design activity is a documented final design and functional prototype.

WHO DRIVES THE PROCESS

Technical Developers

COMMUNITY BUILDING PHASE

Initiate and Form – maintain interest of co-design group during technical development

CO-DESIGN ACTIVITY DESCRIPTION

1. Finalize architecture and data model based on validation
2. Acquisition technical infrastructure
3. Set up and customize/adjust tools
4. Develop/programme custom features
5. Technical testing (functionality, plug&play, interoperability)
6. Develop prototype authentication system

OUTPUTS REQUIRED TO MOVE TO NEXT CLUSTER

- Technical Design
- Prototype CO platform

EXAMPLE TOOL/METHOD

- User Requirements Tracking Tool (GT2.0 D1.6)
- Tools catalogue.
- Story map (headlines) and platform coverage analysis (GT2.0 D1.5)
- Tools for additional technical requirements: authentication, user feedback, monitoring, maps, etc.

4.3.2 Activity Cluster 7: Interactive design of interfaces and community organisation

PURPOSE AND RESULTS

The purpose of the Interface Design activity is to clarify how the community wants to interact with and through the platform, and customize dashboards, tools and visualizations accordingly. A core element of the interface design is usually negotiation and approval of data access policies, identifying data that is sensitive, confidential or publication of which might have unintended negative consequences.

The result of the interfaces design activity is an agreed design of user interfaces, and agreed group interaction 'rules' and data policies that people respect and 'enforce'. In technical terms, the result of the activity of the technical readiness level 'ready for launch'.

WHO DRIVES THE PROCESS

Co-Design Facilitators & Technical Developers

COMMUNITY BUILDING PHASE

Stabilize and Mobilize – discussion of interface design (priority) supports formation of shared values

CO-DESIGN ACTIVITY DESCRIPTION

1. Configuration and interactive design of user interfaces (data submission and visualisation)
2. Develop data sharing, access, and quality control policies
3. Validate authentication system
4. Confirm external/Public datasets to integrate (based on inventory)
5. Test data submission, functionality and usability
6. Continue community building
7. Exposure and mobilization of CO community members

OUTPUTS REQUIRED TO MOVE TO NEXT CLUSTER

- Finalized Interface design
- Data sharing policy
- Operational CO
- Group meetings, organisation of public activities
- (Informal) leaders who spark ideas, energize the group, keep efforts on track
- Interface Mock-ups

EXAMPLE TOOL/METHOD

- Dummy Data Sets
- Field and Beta Tests ('test in real conditions')
- Test and quality control capture through
- Submission of invalid values for quality control
- Creating group dynamics: WhatsApp groups, meeting schedules, etc.
- Prototyping: wireframes, mock-ups.

- Inventory of co-design/living lab tools

4.3.3 Activity Cluster 8: Public launch of the Citizen Observatory

PURPOSE AND RESULTS

The purpose of the Public Launch activity is the presentation of the operational platform to a wider audience and encourage its use beyond the co-design group. Depending on the type of Citizen Observatory, a 'public launch might be a publicity event to raise awareness and recruit new members, but also a demonstration to specific political stakeholders etc.

The result of the launch is a CO operational and available to new members. In terms of stakeholder engagement, it marks the formal transition from a co-design group to CO community.

WHO DRIVES THE PROCESS

CO community organizers with support from CO-Design facilitators and technical developers

COMMUNITY BUILDING PHASE

Stabilize and Mobilize – public representation of observatory reaffirms group value and mobilizes existing and new members

CO-DESIGN ACTIVITY DESCRIPTION

1. Definition of target audiences for launch event
2. Incentives & Barriers Analysis
3. Communication and outreach to mobilize members of the public / target audience
4. Launch event organisation & implementation (front-end/presentation and back-end/helpdesk)
5. Training of moderators and data collectors
6. Prepare clean operational CO system
7. Monitor/troubleshoot during launch event and initial system performance

OUTPUTS REQUIRED TO MOVE TO NEXT CLUSTER

- CO available to public
- First Data collected
- Tailored invitation messages for different target audiences, based on their incentives and barriers
- Performance report
- Helpdesk Issues

EXAMPLE TOOL/METHOD

- I&B survey tool
- Event management
- Sales pitch - Elements for a tailored invitation; simplified TPB/Value proposition canvas
- Helpdesk Issue Tracker

4.4 Phase IV: Rollout Observatory process and mobilize for impact

The main objective of Phase 4 of the co-design process is to transform the infant CO - a small and new launch community using an untested technical prototype – into a stable and self-organizing social system with a long-term business plan. Key element of this transformation is to shift activities from conversations about the shape and use of the observatory to planning activities to be done with the observatory. This requires activation of a subgroup of the members as community organizers, and separate their activity planning from the activity planning of the co-design process. The CO-design facilitators might support such a process with training and advise, helping new community organizers to find their feet, but the CO will ultimately fail if activity planning depends on temporary actors. Similarly, the phase contains the concluding activities of the technical development team and co-design team, with the former delivering the final fixes and upgrades making the platform stable and ready for exploitation, and the latter shifting their focus on ‘working themselves out of a job’ and supporting the development of long term business and operational plans.

Phase 4 is concluded when activities have led to the emergence of an organization willing to permanently host and manage the CO infrastructure, the development of governance structures accepted by all relevant CO stakeholders, and the development of a business model that can support operation of the platform in the long term.

4.4.1 Activity Cluster 9: Plan community mobilization and organized activities

PURPOSE AND RESULTS

The purpose of the community mobilization planning is to form a group of community organizers recruited from the CO community and begin taking on organizational tasks required to grow and maintain the CO in the long term. The initial task of the group is the planning of activities that will serve to mobilization of wider audiences and recruiting them to the CO community.

The result of the activity is an understanding what kind of community activities are needed to realize the objectives of the CO and an activity plan to realize them.

WHO DRIVES THE PROCESS

CO Team/CO community organizers

COMMUNITY BUILDING PHASE

Stabilize – planning meetings of CO organizers serve to affirm shared values and goals

CO-DESIGN ACTIVITY DESCRIPTION

1. Planning of CO Activities
2. Interaction with core users to maintain interest
3. Map stakeholders with purpose: (Support growth of community (~who do we WANT?) / Support issue-related objectives (~who do we NEED?))
4. Support set up of new surveys/alerts in the CO system

OUTPUTS REQUIRED TO MOVE TO THE NEXT CLUSTER

- Overview of activities across time & responsibilities

EXAMPLE TOOL/METHOD

- Reverse Impact Journey

4.4.2 Activity Cluster 10: Implement CO activities with community

PURPOSE AND RESULTS

The purpose of the activity is to work towards the primary objectives of the CO. Typical activities might include data collection campaigns, awareness campaigns, or trainings. A crucial element of a successful Co activity is a follow up in which participants receive a feedback on activities they took part in, for example on the data collected and what to do with it. The activity also serves to recruit new community members and grow the community.

The result of the activity is an active CO community with a growing sense of identity and membership.

WHO DRIVES THE PROCESS

CO Team/CO community organizers and CO members

COMMUNITY BUILDING PHASE

Enlarge – use visible and continued CO activities to attract and recruit new community members

CO-DESIGN ACTIVITY DESCRIPTION

1. Community mobilization, public events
2. Outreach to further CO stakeholders
3. CO data collection/knowledge sharing activities
4. Participant feedback

OUTPUTS REQUIRED TO MOVE TO NEXT CLUSTER

- Stakeholder-specific engagement strategies
- Trained users
- Additional data
- Interactions with decision makers

EXAMPLE TOOL/METHOD

- 3D stakeholder engagement matrix
- Data collection *Blitz'

4.4.3 Activity Cluster 11: Enhance the technical platform

PURPOSE AND RESULTS

The purpose of the platform enhancement activity is to take stock of the initial experiences users have collected while using the platform, as well as problems and issues reported, and develop fixes, adjustments and additions of functionality to solve problems and improve the usefulness and user friendliness of the platform.

The result of the activity is an improved and matured platform. In technical terms, the result is that the technical readiness level 'ready for (business) exploitation' is achieved

WHO DRIVES THE PROCESS

CO Moderators/Administrators and Technical Developers

COMMUNITY BUILDING PHASE

Enlarge – attract additional audiences

CO-DESIGN ACTIVITY DESCRIPTION

1. Monitor the CO system under operational conditions and solve issues
2. Initiate data quality tests with redundant data
3. Improve link to larger CS/EO efforts, set up links to GEO and ensure interoperability
4. Review user feedback from launch and community activities
5. Set up, test and monitor user feedback and system feedback to users (ratings, rewards, personalized views)

OUTPUTS REQUIRED TO MOVE TO NEXT CLUSTER

- Tool upgrades developed and rolled out
- Measurements of the different parameters
- Platform tuning

EXAMPLE TOOL/METHOD

- Issue Tracker and system log files
- Stakeholder data test methodologies ('User performance')
- GEO Yellow pages
- Interoperability testing
- User feedback tools
- Performance KPIs
- Software development

4.4.4 Activity Cluster 12: Develop model for long-term operation and growth

PURPOSE AND RESULTS

The purpose of the operational modelling activity is the preparation for the transition from co-design project to the continuous operation of the CO. This includes development of a business and/or operational model, the identification of owners, host organizations and governance structures, with roles and responsibilities for different stakeholders, and the clarification of funding and revenue sources. In parallel to this activity, the planning implementation of mobilizing activities with the CO community continue.

The result of the activity is a business plan/operational plan ready for adoption by identified future hosts of the CO infrastructure.

WHO DRIVES THE PROCESS

CO Team (if applicable: Business Developers)

COMMUNITY BUILDING PHASE

Enlarge – build recruitment activities and engagement cycle in operational model

CO-DESIGN ACTIVITY DESCRIPTION

1. Organize community
2. Develop business/operational model
3. Develop data service and analysis 'products'

OUTPUTS REQUIRED TO MOVE TO NEXT CLUSTER

- Scenarios for CO sustainability

EXAMPLE TOOL/METHOD

- User friendly use non-profit Business Model Canvas
- Engagement cycle: Recruit - Welcome - Participate - Retain - Search – Recruit

4.5 Phase V: Operate, mature and evolve the Observatory for sustainability

The last phase is the ‘unending’ phase of continued operation and activity of the CO in perpetuity. While not technically a part of the design process anymore, it has been deliberately included in the process model. Phase 5 highlights that the work of building a CO is not done when a platform and its rules of operation are ‘delivered’ – that is the point when the real work begins. The co-design process can be considered most successful when a smooth transition from phase 4 to phase 5 takes place, with handover of organizational tasks from the co-design team to a management team in a host organization, and with handover of the technical platform from developers to permanent administrators.

The main objectives of the final phase are to maintain and sustain the Citizen Observatory and its community, to ensure it can work toward generating impacts, and initiate upgrades both in technical terms and in terms of collective goals and actions as needed.

In contrast to the previous phases, phase five does not have a final ‘gate’ for approval of its outputs.

Quality assurance during ongoing operations will typically take the form of periodical performance and management reviews.

4.5.1 Activity Cluster 13: CO operational management

PURPOSE AND RESULTS

CO operational management marks the first activity after the end of the co-design process. At this point in the process the co-design or project team has fully handed all responsibilities to a team of administrators and community organizers. The operational management activity cluster includes the ongoing financial management of resources used to operate and maintain the platform, ensure agreed governance structures such as Steering Committees or MoUs are used and maintains as agreed, and are typically in charge of user administration, enforcement of rules and other centralized activities of the platform. A final purpose of the activity cluster is to monitor the performance and impacts of the CO in terms of its mission and objectives, and take action to adjust the larger CO agenda in collaboration with the CO community as needed.

The results of successful operational management is a CO that remains relevant and functional for its community.

WHO DRIVES THE PROCESS

CO Team/Owners

COMMUNITY BUILDING PHASE

Maintain – sustain interests and embed continuous activities

CO-DESIGN ACTIVITY DESCRIPTION

1. Ongoing activity planning and management monitoring of CO community
2. Periodical re-assessment of CO focus and adjustment (adaptive management)
3. evaluation of impacts

OUTPUTS REQUIRED TO MOVE TO NEXT CLUSTER

- Management/Activity Plans
- (Budgets)
- (Evaluations/Impact Assessments)
- Adjusted vision, mission & CO objectives

EXAMPLE TOOL/METHOD

- Impact assessment methodology
- Adaptive management

4.5.2 Activity Cluster 14: Operation and maintenance of the CO platform

PURPOSE AND RESULTS

The operation and maintenance activity implies that the CO infrastructure is fully handed over from technical developers to a host organization and their administrators. The purpose of operation and maintenance of the CO platform is to ensure the smooth operation of the platform for continuous activities, and implement upgrades in functionality or for scale.

The result of this activity is a well performing platform that grows and improves over time.

WHO DRIVES THE PROCESS

CO Moderators/Administrators & Technical Developers

COMMUNITY BUILDING PHASE

Enlarge – ensure smooth operation as activity multiplies and address issues in user experience with the platform

CO-DESIGN ACTIVITY DESCRIPTION

1. Ongoing Monitoring, platform maintenance and technical evolution (+ data validation)
2. Solve performance issues
3. Scale and upgrade system

OUTPUTS REQUIRED TO MOVE TO THE NEXT CLUSTER

- Stable and operational CO platform
- Measurements of the different parameters
- Platform continuous maintenance

EXAMPLE TOOL/METHOD

- Issue Tracker and system log files
- Stakeholder data test methodologies ('User performance')
- GEO Yellow pages
- Interoperability testing
- user feedback tools
- Performance KPIs
- Software maintenance

4.5.3 Activity Cluster 15: Ongoing organized CO community activities

PURPOSE AND RESULTS

The purpose of the Community activity organization is to provide opportunities for CO community members to stay active in the CO, maintain a sense of membership and belonging, and contribute to achieving the issue-related objectives of the observatory. In contrast to the operational management of the CO and the platform, community activities can be organized by voluntary community organizers, moderators, and community members forming working groups, i.e. no formal relationship with the host organization of the Co is required.

The result of the activity is a CO that is active and visible, stays engaged with the central challenge it was created to address, and has an impact in its local community in line with community objectives.

WHO DRIVES THE PROCESS

CO Team/CO community organizers, CO members and stakeholders

COMMUNITY BUILDING PHASE

Maintain – sustain interests and embed continuous activities

CO-DESIGN ACTIVITY DESCRIPTION

1. Community mobilization and publicity events
2. CO data collection activities
3. Data use and knowledge exchange

OUTPUTS REQUIRED TO MOVE TO NEXT CLUSTER

- Data collected
- Modular, continuous engagement strategy
- Engagement of community in policy consultations in line with type of observatory

EXAMPLE TOOL/METHOD

- Engagement Modules and toolbox based on classification of RIJ activities

References

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Annex 1 Methods for Planning & Baseline Analyses

This Annex provides an inventory of suggested methods, techniques and tools for the initial preparation stage of the co-design process. These tools can assist with identifying stakeholders, facilitating management between stakeholders, attracting new actors into the design process and setting rules for participation.

A1.1 Sheet of actors involved in the co-design process

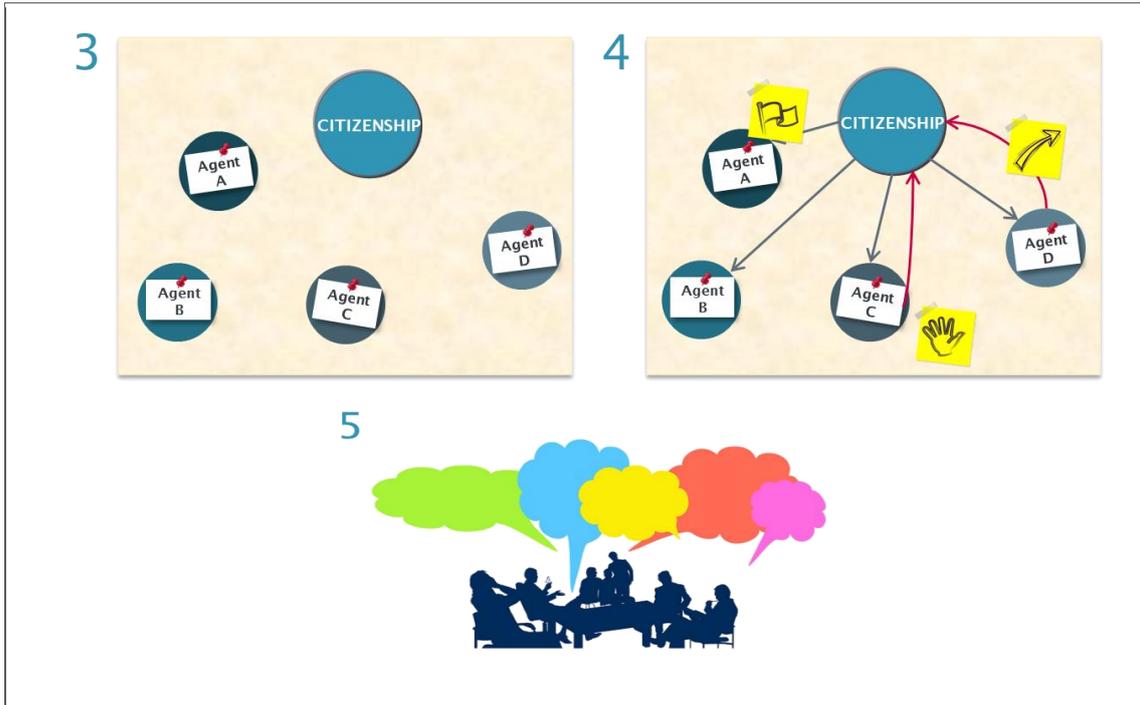
Sheet of agents/actors involved in the co-design process
Interaction in the Co-Design Process Moment:
Recommended for: Preparation
Initial purpose / Objective
Facilitate the management of the different agents / actors involved in the long process of co-design.
What it consists of / steps for its realization
<ol style="list-style-type: none"> 1. Establish information of interest on the different agents / actors who will participate in the process. For example: <ul style="list-style-type: none"> • Organization. • Responsible / Partner/ Interlocutor. • Competences / Scope of knowledge. • Contact information (email, phone, address, etc.). 2. Collect the information in a summary sheet. 3. Validate agents / actors and information.
Participants
<ul style="list-style-type: none"> ◆ Number: 1-4. ◆ Type of participants: Managers and technicians of the co-design process.
Configuration / required resources:
<ul style="list-style-type: none"> ◆ Estimated time / estimated duration: During several sessions. It depends on the amount of information to collect. ◆ Modalities: The tasks can be done face-to-face and online. ◆ Support materials: Work documents. ◆ Human resources: 1-4. ◆ Implementation costs: Low.
Results
<ul style="list-style-type: none"> ◆ Applications: List of agents/actors. ◆ Sort of detected needs: Explicit needs.
Strengths / Weakness / Challenges
<ul style="list-style-type: none"> ◆ Strengths: A basic document facilitates the management of participation in the co-design process. ◆ Weakness: It requires a broad view of the stakeholders in the co-design process. It is recommended to previously use other tools such as "Organizational chart diagram" for this reason.

Application for Citizen Observatories

- ◆ Appropriate Group(s) of COs stakeholders to involve (all, selected, etc.).
- ◆ Proposal of COs adaptation:

A.1.2 Organisational Chart Diagram

Organizational chart diagram	
Interaction in the Co-Design Process Moment:	
Recommended for: Preparation	
Initial purpose / Objective	
Identify the actors and / or stakeholders involved in the co-design process.	
What it consists of / steps for its realization	
<ol style="list-style-type: none">1. Clearly state the topic to be dealt with: the link between the relationships and interactions between the different actors and agents interested or affected around an issue.2. Develop a general discussion to identify the different stakeholders and agents that are related to the topic.3. Reflect on the state of the relationship between each of the agents.4. Graph the link diagram.5. Re-open the debate on the results obtained.	
<p>1</p>  A silhouette of a person holding a clipboard, with a yellow speech bubble next to them.	<p>2</p>  A silhouette of a group of people sitting around a table, with several colorful speech bubbles (green, blue, yellow, red, pink) rising from them.



Participants

- ◆ Number: 5-8.
- ◆ Type: Managers and technicians of the co-design process.

Configuration / necessary resources

- ◆ Estimated time / estimated duration: 30-45 minutes.
- ◆ Modalities: face-to-face.
- ◆ Support materials: cards to collect ideas, mural to show the ideas, pens, etc. for the face-to-face dynamic.
- ◆ Human resources: 1-2
- ◆ Implementation costs: Low.



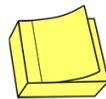
White cards/
notesheet



Markers



Thumbtacks or
glue



Adhesive notes



Panels or murals to
expose ideas

Results

- ◆ Results of its application: The list of agents / actors involved who will be called to participate in the co-design process.
- ◆ Type of captured needs: Explicit and observable needs.

Strength / Weakness / Challenges

- ◆ Strengths: It allows obtaining much information about the implication and degree of relation between different actors / stakeholders around a thematic one.

<ul style="list-style-type: none"> ◆ Weaknesses: Participants are required to have profiles with different knowledge about the thematic and to know the different actors involved.
Application for COs
<ul style="list-style-type: none"> ◆ Appropriate group (s) of CO stakeholders to involve: ◆ Adaptation for Cos proposal: it facilitates the consultation of a group when it wants to obtain its opinion or get its point of view of a problem:

A.1.3 Set of rules for participation

Set of rules for the participation
Interaction in the Co-Design Process Moment:
Recommended for: Preparation
Initial purpose / Objective
Establish a set of rules to facilitate empathy, communication and collaboration in the co-design process.
What it consists of/ steps for its realization
<ol style="list-style-type: none"> 1. Compile the basic rules to apply in the process. About aspects like: <ul style="list-style-type: none"> • The scope of the topics to work on. • The objectives of participation. • The possible script of participation in the process. • The supporting materials to be used. • Recognition of the value of others' ideas, empathy, etc. • Respect of turns, etc. • Explanation of confidentiality and anonymity of contributions, if necessary. 2. Provide the set of rules to the process participants: physically in a document, listed in an email or read the document, etc. When? For example: <ul style="list-style-type: none"> • Additionally, the invitation sent to participate in a meeting. • Before starting a face-to-face work session. • In an online chat, before starting the contributions.
Participants
<ul style="list-style-type: none"> ◆ Number: 1-4. ◆ Type of participants: Managers and technicians of the co-design process.
Configuration / required resources:
<ul style="list-style-type: none"> ◆ Estimated time / estimated duration: The elaboration of the set of rules depends on the amount of information to collect. However, the participants should not spend more than 30 minutes to know the set. ◆ Modalities: The tasks can be done face-to-face and online. ◆ Support materials: Work documents.

<ul style="list-style-type: none"> ◆ Human resources: 1-4. ◆ Implementation costs: Low.
Results
<ul style="list-style-type: none"> ◆ Applications: Set of rules. ◆ Sort of detected needs: Explicit needs.
Strengths / Weakness / Challenges
<ul style="list-style-type: none"> ◆ Strengths: A basic document facilitates the management of participation in the co-design process. ◆ Weakness: It requires a broad view of the stakeholders in the co-design process.
Application for COs
<ul style="list-style-type: none"> ◆ Appropriate Group(s) of COs stakeholders to involve (all, selected, etc.). ◆ Proposal of COs adaptation:

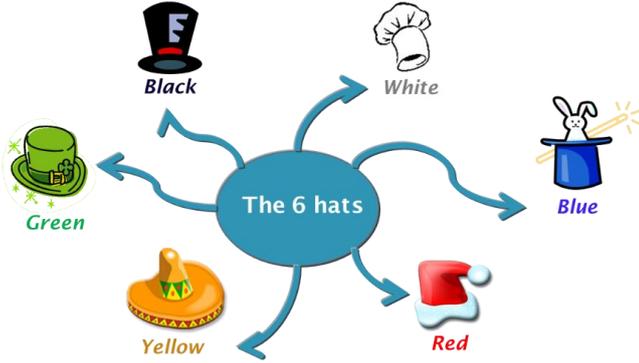
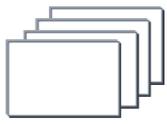
A1.4 Catchment Plan

Catchment Plan
Interaction in the Co-Design Process Moment:
Recommended for: Preparation
Initial purpose / Objective
Attract different agents and actors to participate in the co-design process.
What it consists of / steps for its realization
<p>The capture process is the "key of entry" to get the involvement of different target audiences.</p> <ol style="list-style-type: none"> 1. Define the initial information that agents / actors need to participate. 2. Define channels for transmitting information. 3. Establish the "key messages" to raise awareness of the importance of participation. 4. Identify the motivations of the participants and the "rewards" (emotional, economic, etc.). For example, gamification may be used. 5. Define concrete actions to involve the agents / actors in the process and the expected results. 6. Plan in the calendar to do each action. 7. Review and redefine.
Participants
<ul style="list-style-type: none"> ◆ Number: 1-4. ◆ Type of participants: Managers and technicians of the co-design process.
Configuration / required resources:
<ul style="list-style-type: none"> ◆ Estimated time / estimated duration: During several sessions. It depends on the amount of information to collect. ◆ Modalities: The tasks can be done face-to-face and online.

<ul style="list-style-type: none"> ◆ Support materials: Work documents. ◆ Human resources: 1-4. ◆ Implementation costs: Low.
Results
<ul style="list-style-type: none"> ◆ Applications: Definition of guidelines, specific actions and milestones to attract different agents and actors. ◆ Sort of detected needs: Explicit and observable needs.
Strengths / Weakness / Challenges
<ul style="list-style-type: none"> ◆ Strengths: A basic document facilitates the management of participation in the co-design process. ◆ Weakness: It requires a broad view of the stakeholders in the co-design process. It is recommended to previously use other tools such as "Organizational chart diagram" for this reason.
Application for COs
<ul style="list-style-type: none"> ◆ Appropriate Group(s) of COs stakeholders to involve (all, selected, etc.). ◆ Proposal of COs adaptation:

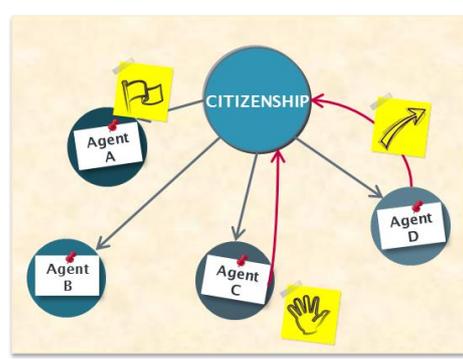
A1.5 Hats

6 Hats
Interaction in the Co-Design Process Moment:
Recommended for: Define concepts/Generate ideas/Capture user requirements.
Initial purpose / Objective
Quickly obtaining of a large number of ideas from a group without engaging in a detailed discussion. Thinking in the long term, beyond the immediate daily problems.
What it consists of / Steps for its realization
<p>It's a variation of the Brainstorming. In this case, different roles (hats) are distributed to each participant, what implies assuming a different perspective or point of view over the topic to work out.</p> <ul style="list-style-type: none"> • Black hat: criteria, judgment or negative opinion; damages and criticism. • White hat: pure facts, figures, sources of information. • Blue hat: cold and control, thinking about thinking, processes. • Red hat: emotions, feelings, forebodings, intuition. • Yellow hat: optimist, positive and constructive thinking. • Green hat: creativity, movement, provocation, divergence.


<p>Participants</p>
<ul style="list-style-type: none"> ◆ Number: 6. ◆ Type: all, depending on the topic to study.
<p>Configuration / necessary resources</p>
<ul style="list-style-type: none"> ◆ Estimated time / estimated duration: 30-45 minutes. ◆ Modalities: face-to-face ◆ Support materials: cards to collect ideas, mural to show the ideas, pens, etc. for the face-to-face dynamic. ◆ Human resources: 1-2 ◆ Implementation costs: Low.
<div style="display: flex; justify-content: space-around; align-items: flex-start;"> <div style="text-align: center;">  <p>White cards/ notesheet</p> </div> <div style="text-align: center;">  <p>Markers</p> </div> <div style="text-align: center;">  <p>Thumbtacks or glue</p> </div> <div style="text-align: center;">  <p>Panels or murals to expose ideas</p> </div> </div> <div style="text-align: center; margin-top: 10px;">  <p>Hats: Identification cards</p> </div>
<p>Results</p>
<ul style="list-style-type: none"> ◆ Results of its application: mapping ideas to face a problem. List of topics to work with. ◆ Type of captured needs: explicit needs.
<p>Strengths / Weakness / Challenges</p>
<ul style="list-style-type: none"> ◆ Strengths: participants know for themselves the problem. Ideas are verbalized in user/customer/stakeholder words. ◆ Weakness: it must be ensured that participants have the necessary starting information. Sometimes it will be necessary to clarify concepts or ensure they are by all participants.
<p>Application for Citizen Observatories</p>
<ul style="list-style-type: none"> ◆ Appropriate CO stakeholders groups to involve. ◆ Adaptation for Cos proposal: it facilitates the consultation of a group when it wants to get its opinion or get its point of view of a problem.

Edward Bono is the founding father of the Six Thinking Hats or Edward de Bono's Six Hats technique.

A1.6 Process mapping

Process Mapping
Interaction in the Co-Design Process Moment:
Recommended for: Define concepts/Generate ideas/Capture user requirements.
Initial purpose / Objective
Process mapping draws a concise picture of the sequences of tasks needed to bring a product or service from genesis to completion.
What it consists of / steps for its realization
<p>Steps:</p> <ol style="list-style-type: none"> 1. Divide the group into subgroups of max. 4-6 participants. 2. Select a specific process (be it policy or community engagement with eco-system, or citizen science – internal group discussion) – 10 mins. 3. Group recorder helps prioritise and identify most important nodes in the process. Use several thinking tools to make the map more tangible (flow-coasters, stakeholder dolls etc.). 3. Gather the subgroups to present their contributions. 4. Compare and synthesize the results.
<div style="display: flex; flex-wrap: wrap;"> <div style="width: 50%; text-align: center;"> <p>1</p>  </div> <div style="width: 50%; text-align: center;"> <p>2</p>  </div> <div style="width: 50%; text-align: center;"> <p>3</p>  </div> <div style="width: 50%; text-align: center;"> <p>4</p>  </div> </div>

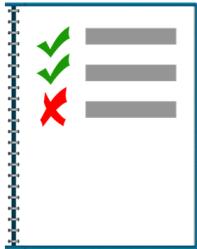
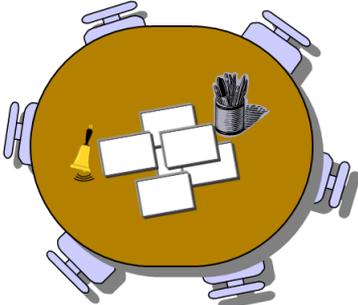
<p>5</p> 
Participants
<p>Number: >15 Type: Mix of participants to start the co-design process.</p>
Configuration / necessary resources
<p>Estimated time / estimated duration: <60 minutes. Modalities: face-to-face Support materials: cards to collect ideas, mural to show the ideas, pens, etc. for the face-to-face dynamic. Human resources: 1-2 Implementation costs: Medium.</p>
 <p>White cards/ notesheet</p>  <p>Markers</p>  <p>Thumbtacks or glue</p>  <p>Adhesive notes</p>  <p>Panels or murals to expose ideas</p>
Results
<p>Results of its application: It provides a creative channel to map everyday practices & identify where the challenge lies & what possible solutions might look like. Type of captured needs: explicit and latent needs.</p>
Strength / Weakness / Challenges
<p>Strengths: It identifies where the challenge lies & what possible solutions might look like. Weaknesses: The effectiveness of process mapping varies significantly based on the writer's experience and observations.</p>
Application for COs

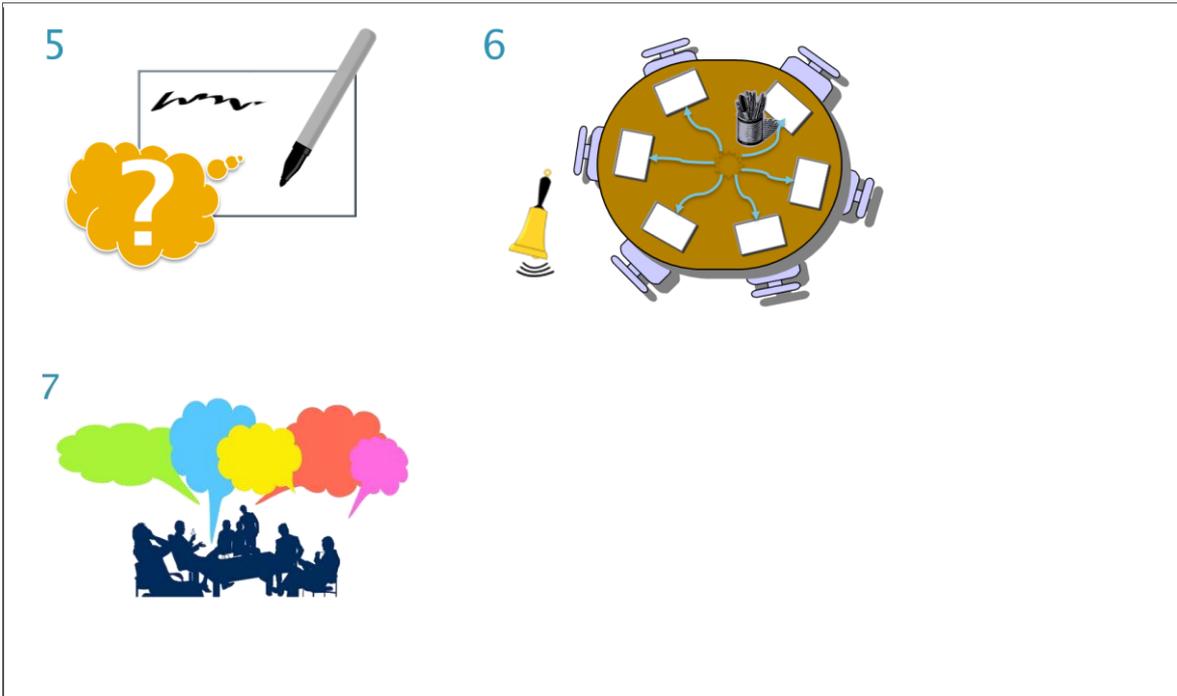
Appropriate group (s) of CO stakeholders to involve

Adaptation for Cos proposal: it facilitates the consultation of a group when it wants to obtain its opinion or get its point of view of a problem

(Business) Process Mapping came about through The American Society of Mechanical Engineers (ASME). In 1921, Frank and Lillian Gilbreth introduced the “flow process chart” in a presentation that they gave called, Process Charts, First Steps in Finding the One Best Way to Do Work. The tools that they presented quickly became engineering standards and continued to be shown through the 1940s, having been sanctioned by the American Society of Mechanical Engineers (ASME). And in 1947, the ASME adopted a symbol system for consistency in this type of chart.

A1.7 Brainpool

Brainpool
Interaction moment in the co-design process:
Recommended for: <ul style="list-style-type: none"> ◆ Define concepts/Generate ideas/Capture user requirements.
Initial purpose / Objective
To deepen in the aspects or questions already identified after a previous exploration of the situation or the problem, trying to establish concrete actions that contribute to its development. It is used to define areas on which to work and even to reach concrete solutions or actions.
What it consists of/ Steps for its realization
<p>The brainpool applies when there is already a prior definition of the subthemes (dimensions or aspects) to work on a topic.</p> <ol style="list-style-type: none"> 1. Select the subthemes to work during the dynamics. At least as many as the number of participants at the table. 2. Fill each card with a sub-topic. 3. Shuffle the cards and lay them face down on the table. 4. Turns will be established for the contributions (of 3-5 minutes) that will be indicated with the sound of the bell. 5. Once the turn is started, each participant must take a card and contribute new ideas that enrich the ideas already written by other participants. When you do not have new ideas to grow a sub-topic, you can change the card to another one in the middle of the table. 6. At the end of the turn, the cards are re-joined, mixed and retaken a new card with a new sub-topic. 7. After the contributions have been completed, the fiches are collected and a synthesis of the most outstanding contributions is made.
<div style="display: flex; justify-content: space-around; align-items: flex-start;"> <div style="text-align: center;"> <p>1</p>  </div> <div style="text-align: center;"> <p>2</p>  </div> </div>
<div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;"> <p>3</p>  </div> <div style="text-align: center;"> <p>4</p>  </div> </div>



Participants

- ◆ Number: 5-12.
- ◆ Type: all types, according to the theme to be studied.

Configuration / required resources

- ◆ Estimated time / estimated duration: 60 – 90 minutes.
- ◆ Modalities: face-to-face.
- ◆ Support materials: Cards to collect ideas, mural to show the ideas, pens, etc., for the face-to-face dynamic.
- ◆ Human resources: 1-2.
- ◆ Implementation costs: Low.



Cards/ notesheet



Markers



Small bells



Panels or murals to expose ideas

Results

- ◆ Results of the application: List of work and possible actions in the future.
- ◆ Type of captured needs: Explicit needs.

Strengths / Weakness / Challenges

- ◆ Strengths: It is a technique to get many ideas and make them grow in a short time.
- ◆ Weakness: This is a dynamic of some complexity. It requires a greater role of the supportive people.

Application for Cos

- ◆ Appropriate CO stakeholders groups to involve:
- ◆ COs adaptation proposal:

Joshi, S.(2018) *Co-creation framework – building a sustainable ecosystem*, D1.1, Co-Inform: Co-Creating Misinformation-Resilient Societies

A1.8 Brainstorming

Brainstorming
Interaction in the Co-Design Moment:
Recommended for: <ul style="list-style-type: none"> ◆ Define concepts/Generate ideas/Capture user requirements.
Initial Purpose / Objective:
To get quickly a large number of ideas from a group without engaging in a detailed discussion. Thinking in the long term, beyond the daily problems.
What it consists of / steps for its realization:
<ol style="list-style-type: none"> 1. Ask the group to reflect to expose as many ideas as possible about the topic. 2. Ask each person to briefly expose their idea (without discussing the others' ideas). 3. Write the ideas. 4. Hold a debate. 5. To group together and choose the problems, issues and topics that are brought up, to make easier the analysis. 6. Establish a priority order if it would be necessary.
Participants
<ul style="list-style-type: none"> ◆ Number: from 5 to 8 (max.) ◆ Type: all, depending on the topic to study.
Configuration / necessary resources
<ul style="list-style-type: none"> ◆ Estimated time / estimated duration: 30-45 minutes. ◆ Modalities: face-to-face and online (through chat or forum online). ◆ Support materials: cards to collect ideas, mural to show the ideas, pens, etc. for the face-to-face dynamic. ◆ Human resources: 1-2. ◆ Implementation costs: Low.
Results
<ul style="list-style-type: none"> ◆ Results of the application: mapping ideas to face a problem. List of topics to work with. ◆ Type of captured needs: Explicit needs.
Strengths / Weakness / Challenges
<ul style="list-style-type: none"> ◆ Strengths: participants know for themselves the problem. Ideas are verbalized in user/customer/stakeholder words. ◆ Weakness: it must be ensured that participants have the necessary starting information. Sometimes it will be necessary to clarify concepts or ensure they are by all participants.
Application for Citizen Observatories
<ul style="list-style-type: none"> ◆ Appropriate CO stakeholders groups to involve. ◆ Adaptation for Cos proposal: it facilitates the consultation of a group when it wants to get its opinion or get its point of view of a problem.

Alex Faickney Osborn was the author of the creativity technique named brainstorming.

A1.9 Canvas Business Model

Canvas Business Model				
Interaction in the Co-Design Process Moment:				
Recommended for: Roll out/Growing & scaling.				
Initial purpose / Objective				
An strategic management and lean startup template for developing new or documenting existing business models				
What it consists of / steps for its realization				
Steps:				
<ul style="list-style-type: none"> ◆ Customer segments. ◆ Value propositions. ◆ Channels. ◆ Customer relationships. ◆ Revenue streams. ◆ Key activities. ◆ Key resources. ◆ Key partnerships. ◆ Cost structure. 				
Key Partners	Key activities	Value propositions	Customer relationships	Customer segments
Partner 1	Activity 1	Proposition 1	Relationship 1	Segment 1
Partner 2	Activity 2	Proposition 2	Relationship 2	Segment 2
...	...	Proposition 3	...	Segment 3
	Key resources		Channels	...
	Resource 1		Channel 1	
	Resource 2		Channel 2	
	...		Channel 3	
			...	
Cost structure		Revenue streams		
	Cost 1		Stream 1	
	Cost 2		Stream 2	
	Cost 3		Stream 3	
	

Participants
<p>Number: 6-10.</p> <p>Type: all, depending on the topic to study.</p>
Configuration / necessary resources
<p>Estimated time / estimated duration: Entire working day.</p> <p>Modalities: face-to-face & online.</p> <p>Support materials: cards to collect ideas, mural to show the ideas, pens, etc. for the face-to-face dynamic.</p> <p>Human resources: 1-2.</p> <p>Implementation costs: Low.</p>
Results
<p>Application results: To represent the project hypotheses in a visual way.</p> <p>Type of captured needs:</p>
Strengths / Weakness / Challenge
<p>Strengths: The coverage of the different dimensions such as Channels, Customer Segments, Cost Structure and Revenue Streams.</p> <p>Weaknesses: Canvas model does not take into account the strategic purpose of organizations – their mission, vision, and strategic objectives.</p>
Application for COs
<p>Appropriate group(s) of stakeholders to involve:</p> <p>Adaptation for COs proposal: it make easier the consultation and deliberation of the group of participants</p>

The Canvas Business Model was designed by Alexander Osterwalder and Yves Pigneur, and it provides a strategic and powerful way to understand and plan your business.

A1.10 Customer Journey Map

Customer Journey Map																																				
Interaction in the Co-Design Process Moment:																																				
Recommended for: Customization/Test.																																				
Initial purpose / Objective																																				
To get a holistic view of what the user is going through from their point of view.																																				
What it consists of / steps for its realization																																				
<p>The customer journey is the complete sum of experiences that users go through when interacting with your service. Instead of looking at just a part of a transaction or experience, the customer journey documents the full experience of being a user. Steps:</p> <ul style="list-style-type: none"> ◆ Identify the user. ◆ Understand the stages of the relationship. ◆ Identify their motivations and doubts. ◆ Map the touchpoints. ◆ Evaluate the key moments and their metrics. ◆ Add the internal processes of the service/company. ◆ Understand their “pains” and identify the opportunities. 																																				
<p>The diagram illustrates a Customer Journey Map with 6 stages. A dashed line path connects various touchpoints across the stages. The sentiment of each touchpoint is indicated by a colored circle: orange for positive, green for neutral, and red for negative. The path starts at Stage 1 (positive), Stage 2 (positive), Stage 3 (neutral), Stage 4 (negative), Stage 5 (positive), and Stage 6 (positive). A legend at the top identifies icons for Moment of Truth (hand with speech bubble), Listening Post (speaker), and Customer Quote (speech bubble). Below the path is a grid for tracking customer needs, expectations, and improvement opportunities.</p> <table border="1"> <thead> <tr> <th>STAGE</th> <th>1</th> <th>2</th> <th>3</th> <th>4</th> <th>5</th> <th>6</th> </tr> </thead> <tbody> <tr> <td>SENTIMENT</td> <td>POSITIVE (orange)</td> <td>POSITIVE (green)</td> <td>NEUTRAL (orange)</td> <td>NEGATIVE (red)</td> <td>POSITIVE (green)</td> <td>POSITIVE (green)</td> </tr> <tr> <td>CUSTOMER NEEDS & INTERACTIONS</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>CUSTOMER EXPECTATIONS +/-</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>IMPROVEMENT OPPORTUNITIES</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table>		STAGE	1	2	3	4	5	6	SENTIMENT	POSITIVE (orange)	POSITIVE (green)	NEUTRAL (orange)	NEGATIVE (red)	POSITIVE (green)	POSITIVE (green)	CUSTOMER NEEDS & INTERACTIONS							CUSTOMER EXPECTATIONS +/-							IMPROVEMENT OPPORTUNITIES						
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SENTIMENT	POSITIVE (orange)	POSITIVE (green)	NEUTRAL (orange)	NEGATIVE (red)	POSITIVE (green)	POSITIVE (green)																														
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CUSTOMER EXPECTATIONS +/-																																				
IMPROVEMENT OPPORTUNITIES																																				
Participants																																				
Number: 6-10.																																				

Type: all, depending on the topic to study.
Configuration / necessary resources
<p>Estimated time / estimated duration: 60-90 minutes.</p> <p>Modalities: face-to-face</p> <p>Support materials: cards to collect ideas, mural to show the ideas, pens, etc. for the face-to-face dynamic.</p> <p>Human resources: 1-2.</p> <p>Implementation costs: High.</p>
<div style="display: flex; justify-content: space-around; align-items: flex-end;"> <div style="text-align: center;">  <p>Cards/ notesheet</p> </div> <div style="text-align: center;">  <p>Markers</p> </div> <div style="text-align: center;">  <p>Adhesive notes</p> </div> <div style="text-align: center;">  <p>Panels or murals to expose ideas</p> </div> </div>
Results
<p>Application results: An oriented graph describing the journey of a user by representing the different touchpoints that characterize his interaction with the service.</p> <p>Type of captured needs:</p>
Strengths / Weakness / Challenge
<p>Strengths: It enables to walk in the user's shoes. Identifies gaps and opportunities within the current offering</p> <p>Weaknesses: Investment is required (time and cost) to capture the current user journey/experience.</p>
Application for COs
<p>Appropriate group(s) of stakeholders to involve:</p> <p>Adaptation for COs proposal: it make easier the consultation and deliberation of the group of participants</p>

Customer journey mapping, a concept pioneered by Ron Zemke and Chip Bell, is a design tool used to track customers' movements through different touchpoints with the business in question.

A1.11 Empathy Map

Empathy map
Interaction in the Co-Design Process Moment:
Recommended for: Define concepts/Generate ideas/Capture user requirements.
Initial purpose / Objective
Deeply visualization of the emotional and rational aspects of the user in shaping their actions and feelings. It is about understanding your point of view regarding a need / problem / product / service and offer and appropriate proposal for your needs.
What it consists of / steps for its realization
<p>Imagine the final user (name, age, employment, etc.) and answer the questions putting in the other shoes.</p> <p>Steps:</p> <ol style="list-style-type: none"> 1. What you see. 2. What you say and what you do. 3. What you hear. 4. What you think and what you feel. 5. From these 4 steps you get another 2: 6. What are the efforts you make 7. What are the benefit, results you expect to get.
<p>The diagram is an Empathy Map. At the center is a simple line drawing of a person's face with a smile. Surrounding the face are eight yellow sticky notes, each containing a question. The top half of the map is labeled 'THINK & FEEL?' and 'SEE?', and the bottom half is labeled 'HEAR?' and 'SAY & DO?'. The bottom-left corner is labeled 'PAIN' and the bottom-right corner is labeled 'GAIN'.</p>
Participants
<ul style="list-style-type: none"> ◆ Number: 5 – 8. ◆ Type: service users
Configuration / necessary resources
<ul style="list-style-type: none"> ◆ Estimated time / estimated duration: 30-45 min. ◆ Modalities: face-to-face.

<ul style="list-style-type: none"> ◆ Support materials: Din A3 or board and adhesive notes. ◆ Human resources: 1 o 2. <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;">  <p>Markers</p> </div> <div style="text-align: center;">  <p>Panels or murals to expose ideas</p> </div> </div> <div style="display: flex; justify-content: space-around; align-items: center; margin-top: 20px;"> <div style="text-align: center;">  <p>Adhesive notes</p> </div> </div>
Results
<ul style="list-style-type: none"> ◆ Results of the application: knowing the final user way. Creating a guide with each user type behaviors. ◆ Type of captured needs: explicit and latent needs.
Strengths / Weakness / Challenge
<ul style="list-style-type: none"> ◆ Strengths: adjust the service to the user ◆ Weakness: hypothesis (not facts).
Applications for COs
<ul style="list-style-type: none"> ◆ Appropriate group(s) of stakeholders to involve ◆ Adaptation for COs proposal

The Empathy Map game was developed by Scott Matthews of XPLANE.

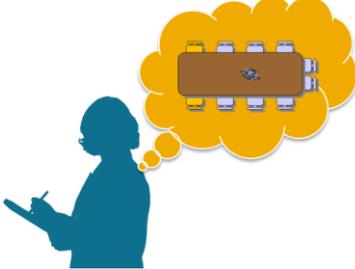
A1.12 FMEA (Failure mode and effects analysis)

FMEA (Failure mode and effects analysis)
Interaction in the Co-Design Process Moment:
Recommended for: Technical design / Prototyping.
Initial purpose / Objective
The FMEA helps identify potential failure modes based on experience with similar products and processes.
What it consists of / steps for its realization
An FMEA uses three criteria to assess a problem: <ol style="list-style-type: none">1. The severity of the effect on the user.2. How frequently the problem is likely to occur.3. How easily the problem can be detected. Participants must set and agree on a ranking between 1 and 10 (1 = low, 10 = high) for the severity, occurrence and detection level for each of the failure modes.
Participants
Number: 6-10. Type: General public. All, depending on the topic to study.
Configuration / necessary resources
Estimated time / estimated duration: Long-term or during several sessions. Modalities: face-to-face. Support materials: cards to collect ideas, mural to show the ideas, pens, etc. for the face-to-face dynamic. Human resources: 1-2. Implementation costs: Low.
 Markers
 Adhesive notes
 Panels or murals to expose ideas

Results
<p>Application results: is a valuable tool that can be used to realize a number of benefits, including improved reliability of products and services, prevention of costly late design changes, and increased user satisfaction.</p> <p>Type of captured needs:</p>
Strengths / Weakness / Challenge
<p>Strengths: Logical, structured process for identifying process areas of concern.</p> <p>It can contribute to improved designs for products and processes, resulting in higher reliability, better quality, increased safety, enhanced customer satisfaction and reduced costs.</p> <p>Weaknesses: As good as the team is.</p>
Application for COs
<p>Appropriate group(s) of stakeholders to involve:</p> <p>Adaptation for COs proposal: it make easier the consultation and deliberation of the group of participants</p>

FMEA begun in the 1940s by the U.S. military to assess risk of failure and harm in processes and to identify the most important areas for process improvements.

A1.13 Focus group

Focus group	
Interaction in the Co-Design Process Moment:	
Recommended for:	
<ul style="list-style-type: none"> ◆ Customization/Test. 	
Initial purpose / Objective	
<p>Collect different points of view and encourage reflection, debate and consensus. Make an exploration (of expectations or opinions) around a particular issue.</p>	
What it consists of / steps for its realization	
<ol style="list-style-type: none"> 1. Define the problem or issue to be studied. Establish the analysis dimensions. 2. Establish the composition of the group (5-12 participants). 3. Elaborate the script or flexible manual of questions that have to semi-structure the discussion or conversation of the group. Establish the role of the moderator. 4. Conduct the session. Moderate interventions and clarify unclear ideas. 5. Make the registry of the information. 6. Analyze the information based on categories of analysis. 	
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Participants
<ul style="list-style-type: none"> ◆ Number: 5-12. ◆ Type of participants: End users or customers.
Configuration / required resources:
<ul style="list-style-type: none"> ◆ Estimated time / estimated duration: 90 – 120 minutes. ◆ Modalities: face-to-face. ◆ Support materials: cards to collect ideas, mural to show the ideas, pens, etc. for the face-to-face dynamic. ◆ Human resources: 1-2. ◆ Implementation costs: Low. <div style="display: flex; justify-content: space-around; align-items: center; text-align: center;"> <div style="text-align: center;">  <p>Cards/ notesheet</p> </div> <div style="text-align: center;">  <p>Markers</p> </div> <div style="text-align: center;">  <p>Panels or murals to expose ideas</p> </div> </div>
Results
<ul style="list-style-type: none"> ◆ Applications: Testing the solution or service by its end users. List of strengths and weaknesses to improve. ◆ Sort of detected needs (observed, tacit, latent):
Strengths / Weakness / Challenges
<ul style="list-style-type: none"> ◆ Strengths: Get first-hand information from those involved in a problem or from the customer-users of a product or solution. ◆ Weakness: It is recommendable to establish some type of "reward" for the participation of people. The composition of the group should be careful so that no one person concentrates the debate on the others.
Application for COs
<ul style="list-style-type: none"> ◆ Appropriate Group(s) of COs stakeholders to involve (all, selected, etc.). ◆ Proposal of COs adaptation:

Ernest Dichter, a psychologist and marketing expert coined the term ‘focus group’.

A1.14 Future workshops

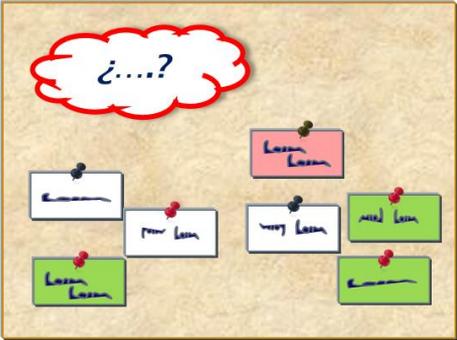
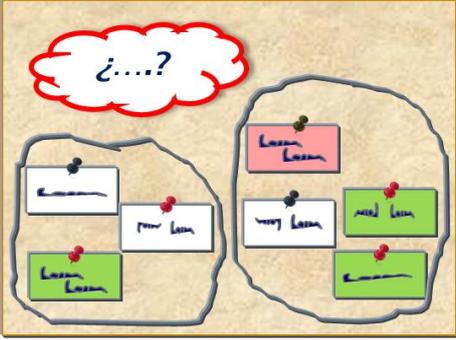
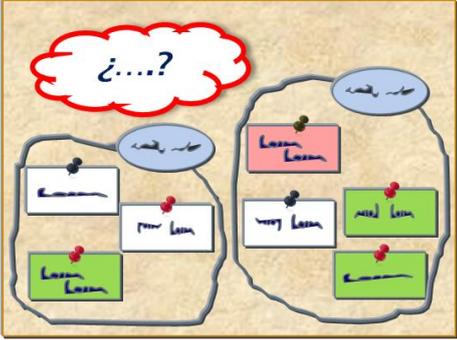
Future Workshops
Interaction moment in the co-design process:
Recommended for: Define concepts/Generate ideas/Capture user requirements.
Initial purpose / Objective
The aim is for future users or stakeholders to clarify the common problems in their current situation, creation visions about the future and discuss how these visions could be realized. The FW consists of three phases: critique, fantasy and implementation
What it consists of / Steps for its realization
<p>The <u>critique phase</u> consists of brainstorming problems in the current work situation. Contributions are formulated as brief, critical observations or statements. They are grouped in categories corresponding to problem areas. Participants are divided into small groups, where each group takes one problem area and formulates a concise and coherent critique of it.</p> <p>The <u>fantasy phase</u> is oriented toward unrestricted ideas on what the future situation could be like. Two steps can be distinguished here: a warm up session where critical statements from the former phase are formulated in positive terms and presented. The second step consists of a brainstorming this time on future possibilities. It is important that all criticism and judgment of the viability of proposals is postponed during this session. Outcomes of this second step are evaluated by a vote where each participant chooses five favorites. The 7 or 8 winning ideas are then collected into a basis for a vision. Divided into groups participants develop their own refined version of the vision, still without regard to practical and technical limitations. It is recommended the use of metaphors as a way to summarize and develop the vision.</p> <p>The <u>implementation phase</u> starts when the small group presents its vision. The possibility of realizing different visions under current conditions are assessed in a joint discussion which also includes an identification of what needs to be changed in order to realize the visions.</p>
Participants
<ul style="list-style-type: none"> ◆ Number: depending on the representativeness of the simple, it could need the participation of a large number of participants. ◆ Type: all types, according to the theme to be studied.
Configuration / required resources
<ul style="list-style-type: none"> ◆ Estimated time / estimated duration: between 1 hour and 1.30 ◆ Modalities: face-to-face ◆ Support materials: paper, whiteboards. ◆ Human resources: brainstorming leaders coaching the sessions are needed. ◆ Implementation costs: low.
Results
<ul style="list-style-type: none"> ◆ The FW concludes with a plan for further work: what needs to be done, when and by whom. More precisely, it generates the identification of existing problems, the creation of a goal state where the problems are solved and the construction of a chain of transformation from the current state to the goal state,

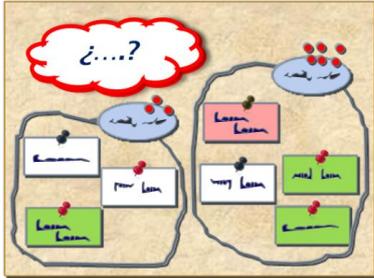
◆ Type of captured needs: explicit ones.
Strengths / Weakness / Challenges
◆ Strengths: the information is directly obtained from the stakeholders who together decides what needs to be done, when and by whom.
◆ Weakness: it takes time.
Application for COs
◆ Perfectible feasible to use the FW method in a design team where designers, developers and users participate for instance in a product development situations.

Future Workshops were developed in the 1970s by Robert Jungk and are detailed in the book *Future Workshops: How to Build Desirable Futures*. Jungk, an journalist and writer, was inspired by "socialist principles related to democratic, participative, and collective decision making by critical citizens that will become emancipated individuals, becoming their own attorneys before the state".

These principles underpin the phases of the process, beginning with critique which helps expose the realities of the current problem/situation.

A1.15 Metaplan

Metaplan	
Interaction in the Co-Design Process Moment:	
Recommended for:	
<ul style="list-style-type: none"> ◆ Define concepts/Generate ideas/Capture user requirements. 	
Initial purpose / Objective	
Identify ideas regarding issues, objectives or problems on a given issue. Prioritize groups of ideas to face in a consensual way.	
What it consists of/ steps for its realization	
<ol style="list-style-type: none"> 1. Ask a question to participants, which will be graphically collected in a mural. 2. Ask each person to reflect and generate at least 3 or 4 ideas related to the question. 3. Place and make a first association of ideas. 4. Hold a debate the grouping of ideas under titles (keywords or topics). 5. Assess the importance or priority of established groups. 	
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<p>5</p> 
<p>Participants</p> <ul style="list-style-type: none"> ◆ Number: 8-12 ◆ Type: all, depending on the topic to study.
<p>Configuration / necessary resources</p> <ul style="list-style-type: none"> ◆ Estimated time / estimated duration: 60-90 minutes. ◆ Modalities: face-to-face ◆ Support materials: cards to collect ideas, mural to show the ideas, pens, etc. for the face-to-face dynamic. ◆ Human resources: 1-2. ◆ Implementation costs: Low. <div style="display: flex; justify-content: space-around; align-items: flex-start; text-align: center;"> <div style="width: 20%;">  <p>White cards/ notesheet: Neutral responses</p> </div> <div style="width: 20%;">  <p>Orange cards/ notesheet: Critical or negative content responses</p> </div> <div style="width: 20%;">  <p>Green cards/ notesheet: Constructive responses or positive content</p> </div> <div style="width: 20%;">    <p>Big cards: Titles to group ideas and questions to work</p> </div> <div style="width: 20%;">  <p>Adhesive dots to mark/score</p> </div> <div style="width: 20%;">  <p>Markers</p> </div> <div style="width: 20%;">  <p>Thumbtacks or glue</p> </div> <div style="width: 20%;">  <p>Panels or murals to expose ideas</p> </div> </div>
<p>Results</p> <ul style="list-style-type: none"> ◆ Results of its application: list or grouped ideas to work out and prioritized around a topic. ◆ Type of captured needs: explicit and observable needs.
<p>Strengths / Weakness / Challenge</p> <ul style="list-style-type: none"> ◆ Strengths: it allows obtaining results in a relatively short and limited time for the solution of problems or subjects of a certain complexity. ◆ Weaknesses: this is a dynamic of some complexity. The dynamizers assume an important role in the articulation of the dynamics.
<p>Application for COs</p> <ul style="list-style-type: none"> ◆ Appropriate group (s) of CO stakeholders to involve

- ◆ Adaptation for COs proposal: it facilitates the consultation and deliberation of the group of participants.

Metaplan, an international management consulting firm, advising companies on how to manage the process of strategy development, developed the Metaplan technique. The method was initiated by Eberhard Schnelle in Hamburg, Germany, who was also the founder of Metaplan company.

A.16 Method 635

Method 635
Interaction moment in the co-design process:
Recommended for: Define concepts/Generate ideas/Capture user requirements. It is a more structured version of brainstorming.
Initial purpose / Objective
To develop ideas systematically, avoiding group dynamics difficulties and the possibility of determining the originator of a particularly powerful idea (In case that it is important in terms of intellectual property)
What it consists of/ Steps for its realization
It starts with 6 group members. Who get acquainted with the particular problem or question at hand. Then each person writes down 3 crude ideas on how to solve it. The ideas are passed on to another group member, who reads them and adds any further ideas or modifications that she can think of. The ideas are passed around until all group members have seen all the original ideas. 6 people, 3 ideas, 5 rounds of elaboration
Participants
<ul style="list-style-type: none"> ◆ Number: groups of 6 people each. ◆ Type: all types, according to the theme to be studied.
Configuration / required resources
<ul style="list-style-type: none"> ◆ Estimated time / estimated duration: 30-60 min ◆ Modalities: face-to-face. ◆ Support materials: posts it or paper. ◆ Implementation costs: low.
Results
<ul style="list-style-type: none"> ◆ Development of ideas systematically.
Strengths / Weakness / Challenges
<ul style="list-style-type: none"> ◆ Strengths: to generate ideas systematically whilst avoiding group dynamics difficulties and the possibility of determining the originator of a particularly powerful idea (In case that it is important in terms of intellectual property) ◆ Weakness: absence of a dynamic, lively and exciting group process that stimulates creative ideas.
Application for COs
<ul style="list-style-type: none"> ◆

Method 635 or 6-3-5 Brainwriting was developed by Bernd Rohrbach. It is a group-structured brainstorming technique aimed at aiding innovation processes by stimulating creativity.

A1.17 Opinion Survey

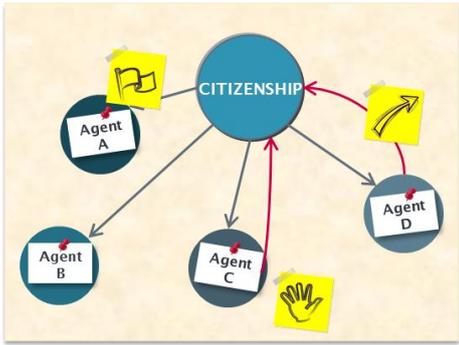
Opinion survey
Interaction moment in the co-design process:
Recommended for: Define concepts/Generate ideas/Capture user requirements.
Initial purpose / Objective
Getting data from a large number of people in a structured way and through specific questions, often with procedures that allow statistical analysis.
What it consists of / Steps for its realization
<ol style="list-style-type: none"> 1. Define the purpose and the information needs. Establish the objective of the study and dimension on analysis. 2. Design the population simple to be surveyed. 3. Design the questionnaire. The questionnaire is the instrument of the survey. It operatizes the studied variables. The questions collected in it are items that correspond with previously-defined indicators to study the variables. 4. To teach and to train the interviewers' team, if the questionnaire is provided. 5. Make a pre-test of the questionnaire questions. 6. Apply the survey (face-to-face, by phone, online, etc.). 7. Record the information. 8. Make use and analyze the information.
Participants
<ul style="list-style-type: none"> ◆ Number: depending on the representativeness of the simple, it could need the participation of a large number of participants. ◆ Type: all types, according to the theme to be studied.
Configuration / required resources
<ul style="list-style-type: none"> ◆ Estimated time / estimated duration: it depends on the study objectives. However, it's recommended not to "steal" more than 10-15 minutes to the surveyed person, to not discourage the participation. ◆ Modalities: face-to-face, by phone, online, etc. ◆ Support materials: the questionnaire. Depending on the chosen modality could be offered in different formats: paper, online (there are platforms and applications that facilitate this task, like Doodle, etc.). ◆ Human resources: if the questionnaire is not self-administrated, interviewers are required. ◆ Implementation costs: High.
Results
<ul style="list-style-type: none"> ◆ Results of the application: statistical data over the opinion of the surveyed people. ◆ Type of captured needs: Explicit needs.
Strengths / Weakness / Challenges
<ul style="list-style-type: none"> ◆ Strengths: the information is directly obtained from people who have been previously selected (representative sample) to make inferences about a wider population. ◆ Weakness: the survey is becoming less used because of the difficulty of accessing to highly segmented target. It could be more expensive because of the human resources to be employed.

Application for COs

- ◆ Appropriate CO stakeholders groups to involve:
- ◆ COs adaptation proposal: it facilitates the participation when consultation and deliberation of a specific population is required. Whether the result is binding or not should be clarified.

The first instance of what we now call an opinion poll is generally considered to have been held in the 19th century. Later in the century, the Columbus Dispatch, seems to have been the first to consider using trained interviewers to gather information. Opinion polling became an institution in the United States, but took until the early 20th century to really catch on in other countries.

A1.18 Organisational chart diagram

Organizational chart diagram	
Interaction in the Co-Design Process Moment:	Recommended for: Define concepts/Generate ideas/Capture user requirements.
Initial purpose / Objective	To illustrate the extent to which individuals, organizations, institutions and agents interact with each other, and the relative importance of each one of them, around the theme rose.
What it consists of / steps for its realization	<ol style="list-style-type: none"> 1. Clearly state the topic to be dealt with: the link between the relationships and interactions between the different actors and agents interested or affected around an issue. 2. Develop a general discussion to identify the different stakeholders and agents that are related to the topic. 3. Reflect on the state of the relationship between each of the agents. 4. Graph the link diagram. 5. Re-open the debate on the results obtained.
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<p>5</p> 
<p>Participants</p> <ul style="list-style-type: none"> ◆ Number: 5-8 ◆ Type: General public. All, depending on the topic to study.
<p>Configuration / necessary resources</p> <ul style="list-style-type: none"> ◆ Estimated time / estimated duration: 30-45 minutes. ◆ Modalities: face-to-face ◆ Support materials: cards to collect ideas, mural to show the ideas, pens, etc. for the face-to-face dynamic. ◆ Human resources: 1-2 ◆ Implementation costs: Low. <div style="display: flex; justify-content: space-around; align-items: flex-start; text-align: center;"> <div style="margin: 10px;">  <p>White cards/ notesheet</p> </div> <div style="margin: 10px;">  <p>Markers</p> </div> <div style="margin: 10px;">  <p>Panels or murals to expose ideas</p> </div> </div> <div style="display: flex; justify-content: space-around; align-items: flex-start; text-align: center; margin-top: 10px;"> <div style="margin: 10px;">  <p>Thumbtacks or glue</p> </div> <div style="margin: 10px;">  <p>Adhesive notes</p> </div> </div>
<p>Results</p> <ul style="list-style-type: none"> ◆ Results of its application: graphical representation of organizational link. ◆ Type of captured needs: observable needs.
<p>Strength / Weakness / Challenges</p> <ul style="list-style-type: none"> ◆ Strengths: It allows obtaining much information about the implication and degree of relation between different stakeholders around a thematic one. ◆ Weaknesses: Participants are required to have profiles with different knowledge about the organizations and / or agents that are linked during the dynamics, to be all represented and their relationships.
<p>Application for COs</p> <ul style="list-style-type: none"> ◆ Appropriate group (s) of CO stakeholders to involve ◆ Adaptation for Cos proposal: it facilitates the consultation of a group when it wants to obtain its opinion or get its point of view of a problem

The Scottish-American engineer Daniel McCallum is credited for creating the first organizational charts of American business around 1854. The term "organization chart" came into use in the early twentieth century.

A1.19 Phillips 66

Phillips 66
Interaction in the Co-Design Process Moment:
Recommended for: Define concepts/Generate ideas/Capture user requirements.
Initial purpose / Objective
When a large group is available, it may be useful to use this technique, so it allows to dynamize the group by splitting the job into subgroups: groups of 6 participants and 6 minutes.
What it consists of / steps for its realization
<ol style="list-style-type: none"> 1. Divide the group into subgroups of at most six components that will discuss for six minutes to answer a question or solve a problem or case formulated by the moderator. 2. Distribute the subgroups in rooms and carry out the discussion work on the topic: each member within the subgroup presents their opinion for one minute. 3. Gather the subgroups and make the presentation of contributions. 4. Compare and synthesize the results.

Participants
<ul style="list-style-type: none"> ◆ Number: more than 12. ◆ Type: all, depending on the topic to study.
Configuration / necessary resources
<ul style="list-style-type: none"> ◆ Estimated time / estimated duration: 30-45 minutes. ◆ Modalities: face-to-face ◆ Support materials: cards to collect ideas, mural to show the ideas, pens, etc. for the face-to-face dynamic. ◆ Human resources: 1-2. ◆ Implementation costs: Low.

 <p>White cards/ notesheet</p>	 <p>Markers</p>	 <p>Panels or murals to expose ideas</p>
 <p>Thumbtacks or glue</p>	 <p>Adhesive notes</p>	
<p>Results</p> <ul style="list-style-type: none"> ◆ Results of your application: Mapping ideas around several questions on a topic ◆ Type of needs captured: Explicit and observable needs. 		
<p>Strength / Weakness / Challenges</p> <ul style="list-style-type: none"> ◆ Strength: It allows to get deep with a certain level of detail on a thematic in a reduced time and to articulate the participation of a large group of people. ◆ Weaknesses: The job of the dynamizers is essential to articulate successfully the development of the dynamics. The physical space where the dynamics is performed is also important to facilitate the work (distribution, acoustics, etc.). 		
<p>Application for the Citizen Observatories</p> <ul style="list-style-type: none"> ◆ Appropriate group (s) of CO stakeholders to involve ◆ Adaptation for Cos proposal: it facilitates the consultation of a group when it wants to obtain its opinion or get its point of view of a problem. 		

The Phillips 66 method was originated by Donald Phillips of Hillsdale College for the purpose of getting more involvement—questions, ideas, or opinions—from a large conference group.

A1.20 Role play

Role Play
Interaction in the Co-Design Process Moment:
Recommended for: Customization/Test.
Initial purpose / Objective
The goals of a role playing scenario are to expose users to different viewpoints or ways of thinking about a situation, expand their ability to resolve situations, and provide experience within a given context.
What it consists of / steps for its realization
Two or more people represent a specific real life situation, acting according to the role assigned to them. Steps: <ul style="list-style-type: none"> ◆ Preparation/Role definition. ◆ Dramatization. <ul style="list-style-type: none"> ○ Performance. ○ Comments and discussion. <p>The same scene can be repeated several times changing the profiles of the characters to understand how the different users would act in the same situation.</p>
Participants
Number: 6-8. Type: all, depending on the topic to study.
Configuration / necessary resources
Estimated time / estimated duration: 60-90 minutes. Modalities: face-to-face Support materials: Human resources: 1-2. Implementation costs: Low.
Results
Application results: This activity can serve to know the attitudes we have in certain situations and how they influence our work and our life. Type of captured needs:
Strengths / Weakness / Challenge
Strengths: It generates a high level of involvement.

Weaknesses: This technique requires much confidence in the group.

Application for COs

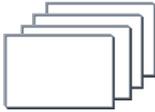
Appropriate group(s) of stakeholders to involve:

Adaptation for COs proposal: it make easier the consultation and deliberation of the group of participants

Role Playing technique of assigning and taking roles in psychological research has been used in the early classic social psychological experiments by Kurt Lewin (1939/1997), Stanley Milgram (1963), and Phillip Zimbardo (1971). Herbert Kelman suggested that role-playing might be "the most promising source" of research methods alternative to methods using deception (Kelman 1965).

A1.21 SCAMPER

SCAMPER
Interaction in the Co-Design Process Moment:
Recommended for: Technical design / Prototyping.
Initial purpose / Objective
To generate inventive ideas to solve a known problem by providing a list of active verbs that you associate with your problem.
What it consists of / steps for its realization
<p>Substitute: Think to substitute part of the product/process for something else.</p> <p>Combine: Think about combining two or more parts of your probortunity to achieve a different product/process or to enhance synergy</p> <p>Adapt: Think about which part or the product/process could be adapted to remove the probortunity or think how you could change the nature of the product/process.</p> <p>Modify: Think about changing part of all of the current situation, or to distort it in an unusual way.</p> <p>Put to other purposes: Think of how you might be able to put your current solution/product/process to other purposes, or think what you could reuse from somewhere else in order to solve your own probortunity.</p> <p>Eliminate: Think of what might happen if you eliminated various parts of the product/process/probortunity and consider what you might do in that situation.</p> <p>Rearrange/Reverse: Think of what you would do if part of your probortunity/product/process worked in reverse or done in a different order.</p>
Participants
<p>Number: 6-10.</p> <p>Type: all, depending on the topic to study.</p>
Configuration / necessary resources
Estimated time / estimated duration: 60-90 minutes.

<p>Modalities: face-to-face</p> <p>Support materials: cards to collect ideas, mural to show the ideas, pens, etc. for the face-to-face dynamic.</p> <p>Human resources: 1-2.</p> <p>Implementation costs: Low.</p> <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;">  <p>Cards/ notesheet</p> </div> <div style="text-align: center;">  <p>Markers</p> </div> <div style="text-align: center;">  <p>Adhesive notes</p> </div> <div style="text-align: center;">  <p>Panels or murals to expose ideas</p> </div> </div>
Results
<p>Application results: Different views on a problem will help us to get more creative ideas and give better solutions.</p> <p>Type of captured needs:</p>
Strengths / Weakness / Challenge
<p>Strengths: Encourages the creativity.</p> <p>Weaknesses: It works only in limited environments</p>
Application for COs
<p>Appropriate group(s) of stakeholders to involve:</p> <p>Adaptation for COs proposal:</p>

SCAMPER was proposed by Alex Faickney Osborn in 1953, and was further developed by Bob Eberle in 1971 in his book; SCAMPER: Games for Imagination Development.

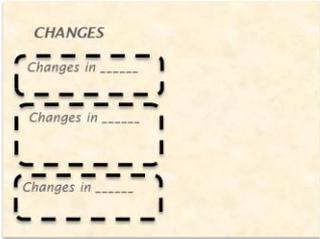
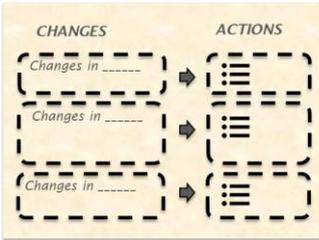
A1.21 Scenario Planning

Scenario Planning			
Interaction in the Co-Design Process Moment:			
Recommended for:			
<ul style="list-style-type: none"> ◆ Roll out/Growing & scaling. 			
Initial purpose / Objective			
It allows for more robust decisions by allowing multiple possible futures.			
What it consists of/ steps for its realization			
<p>It consists in asking and trying to answer multiple key questions of "what if", imagining different futures.</p> <ul style="list-style-type: none"> ◆ To identify the strategic question: What question needs to be answered? ◆ To identify trends and uncertainties. ◆ To build the scenarios. ◆ To describe the scenarios. ◆ To think about the strategy. 			
	Scenario A	Scenario B	Scenario C
Key Indicators
Key Contra-Indicators
Participants			
<ul style="list-style-type: none"> ◆ Number: 5-12. ◆ Type of participants: Profiles with a certain knowledge of the situation, problem or service, etc., on which future scenarios are defined. 			
Configuration / required resources:			
<ul style="list-style-type: none"> ◆ Estimated time / estimated duration: Long-term or during several sessions. ◆ Modalities: face-to-face. ◆ Support materials: cards to collect ideas, mural to show the ideas, pens, etc. for the face-to-face dynamic. ◆ Human resources: 1-2. ◆ Implementation costs: Low. 			

 Cards/ notesheet	 Markers	 Panels or murals to expose ideas
Results		
<ul style="list-style-type: none"> ◆ Applications: An illustration or diagram of all the places (touchpoints) the users come into contact with the company/service online or off. Sort of detected needs (observed, tacit, latent): observed and tacit. 		
Strengths / Weakness / Challenges		
<ul style="list-style-type: none"> ◆ Strengths: The definition of scenarios allows to identify the possible risks that can occur during the implementation. ◆ Weakness: It is a technique with some complexity. It requires profiles with some knowledge of the situation, problem or service on which future scenarios are defined. 		
Application for COs		
<ul style="list-style-type: none"> ◆ Appropriate Group(s) of COs stakeholders to involve (all, selected, etc.). ◆ Proposal of COs adaptation: 		

Scenario Planning is in large part an adaptation and generalization of classic methods used by military intelligence. Most authors attribute the introduction of scenario planning to Herman Kahn through his work for the US Military in the 1950s at the RAND Corporation where he developed a technique of describing the future in stories as if written by people in the future.

A1.22 Significant change

Significant change	
Interaction in the Co-Design Process Moment:	
Recommended for: Define concepts/Generate ideas/Capture user requirements.	
Initial purpose / Objective	
Identify the most significant changes in different areas and aspects that should be given to solve or counteract the impact of previously established problems.	
What it consists of / steps for its realization	
<ol style="list-style-type: none"> 1. Ask the participants to reflect individually on the aspects and kinds of changes they feel should be made to solve the problems. Changes must be related to different areas or aspects previously raised, for example: changes in citizenship, in administration, in social agents, etc. 2. Following a turn order for participation, each participant briefly exposes his ideas. 3. Re-open the debate on the results obtained. 	
<p>1</p> 	<p>2</p> 
<p>3</p> 	
Participants	
<ul style="list-style-type: none"> ◆ Number: 5-8 ◆ Type: all, depending on the topic to study. 	
Configuration / necessary resources	
<ul style="list-style-type: none"> ◆ Estimated time / estimated duration: 30-45 minutes. ◆ Modalities: face-to-face ◆ Support materials: cards to collect ideas, mural to show the ideas, pens, etc. for the face-to-face dynamic ◆ Human resources: 1-2. ◆ Implementation costs: Low. 	

 Cards/ notesheet	 Markers	 Adhesive notes	 Panels or murals to expose ideas
Results			
<ul style="list-style-type: none"> ◆ Results of its application: it facilitates the step before the definition of requirements over a solution ◆ Type of captured needs: explicit and observable needs. 			
Strength / Weakness / Challenges			
<ul style="list-style-type: none"> ◆ Strength: previous list of issues to base the decision making of a solution. The important areas to be worked out are verbalized in the agents or final users' words. ◆ Weakness: This is a dynamic of some complexity. The desirable "significant changes" cannot always be translated into realizable solution requirements. 			
Application for COs			
<ul style="list-style-type: none"> ◆ Appropriate group (s) of CO stakeholders to involve ◆ Adaptation for OCs proposal: it facilitates the consultation and deliberation of the group of participants. 			

The Most Significant Change (MSC) technique is a form of participatory monitoring and evaluation. It involves the collection and selection of stories of change, produced by programme or project stakeholders. It was first developed in Bangladesh in the 1990s, by Rick Davies. In 2005, a definitive guide to using MSC was developed.

A1.23 Storyboard

Storyboard																
Interaction in the Co-Design Process Moment:																
Recommended for: Roll out/Growing & scaling.																
Initial purpose / Objective																
It focus on creating a visualization of the user interface that implements some set of behaviors.																
What it consists of/ steps for its realization																
It consists in drawing the moments (before, during and after) of our idea of the product/service/business in about eight pictures. <div style="border: 1px solid black; padding: 10px; width: fit-content; margin: 0 auto;"> <p>Project Name: _____ Page: _____ of _____</p> <p>By: _____ Date: _____</p> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="border: 1px solid black; width: 25%; height: 40px;"></td> <td style="border: 1px solid black; width: 25%; height: 40px;"></td> <td style="border: 1px solid black; width: 25%; height: 40px;"></td> <td style="border: 1px solid black; width: 25%; height: 40px;"></td> </tr> <tr> <td style="border: none;">=====</td> <td style="border: none;">=====</td> <td style="border: none;">=====</td> <td style="border: none;">=====</td> </tr> <tr> <td style="border: 1px solid black; width: 25%; height: 40px;"></td> <td style="border: 1px solid black; width: 25%; height: 40px;"></td> <td style="border: 1px solid black; width: 25%; height: 40px;"></td> <td style="border: 1px solid black; width: 25%; height: 40px;"></td> </tr> <tr> <td style="border: none;">=====</td> <td style="border: none;">=====</td> <td style="border: none;">=====</td> <td style="border: none;">=====</td> </tr> </table> </div>					=====	=====	=====	=====					=====	=====	=====	=====
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Participants																
Number: 6-10. Type: all, depending on the topic to study.																
Configuration / necessary resources																
Estimated time / estimated duration: 60-90 minutes. Modalities: face-to-face & online. Support materials: receipts to collect ideas, mural to show the ideas, pens, etc. for the face-to-face dynamic. Human resources: 1-2. Implementation costs: Low.																

 Markers	 Adhesive notes	 Panels or murals to expose ideas
Results		
<p>Application results: It consists in the representation of use cases through a series of drawings or pictures, put together in a narrative sequence. It illustrates the interaction required to achieve a goal.</p> <p>Type of captured needs:</p>		
Strengths / Weakness / Challenge		
<p>Strengths: We can make our idea of a service more understandable to the public, because it helps them to visualize what we have in mind through images.</p> <p>Weaknesses:</p>		
Application for COs		
<p>Appropriate group(s) of stakeholders to involve:</p> <p>Adaptation for COs proposal: it make easier the consultation and deliberation of the group of participants</p>		

Walt Disney is credited for this activity. His need to animate Steamboat Willie in 1928 led to the process of storyboarding.

A1.24 Tangible topology

Tangible Topology
Interaction moment in the co-design process:
<p>Recommended for:</p> <ul style="list-style-type: none"> ◆ Define concepts/Generate ideas/Capture user requirements Phase <p>This is a tool that was developed by a lot of different organizations, primarily to teach earth science concepts related to watershed science. However, it's also an amazing tool for teaching landscape and topography skills to architects and city planners, or even visualize basic ecology concepts for lay audiences.</p>
Initial purpose / Objective
<p>The main objective of this tool is to provide an interactive fun way to engage with topographies and landscapes and understand the way water in particular flows with relation to land. It is a very hands on method which makes abstract concepts fun.</p>
What it consists of / Steps for its realization
<p>Precise steps on setting this tool up (including open source code) can be found here: http://scholarslab.org/research-and-development/augmented-reality-and-simulation/</p>
Participants
<ul style="list-style-type: none"> ◆ Number: Ideally one participant would engage with this at a time. But small groups of 4-5 can also work together on this. ◆ Type: all types, according to the theme to be studied.
Configuration / required resources
<ul style="list-style-type: none"> ◆ Estimated time / estimated duration: Once the hardware is in place, it would need a day's work to set this up. ◆ Modalities: face-to-face ◆ Support materials: kinetic, sand, software, projector. ◆ Human resources: Tech support in setting this up is required, as well as for maintainance. ◆ Implementation costs: moderately high
Results
<ul style="list-style-type: none"> ◆ This tool produces clear, tangible insights into our interaction with our physical environment. It acts also as an ice breaker, allowing participants to talk and work collaboratively around issues that are abstract (such as sustainability, social-ecology) ◆ Type of captured needs: both implicit and explicit ones.
Strengths / Weakness / Challenges
<ul style="list-style-type: none"> ◆ Strengths: Innovative, fun and interactive way to understand, capture perceptions of participants ◆ Weakness: it takes time to set up, has certain inherent costs on hardware.
Application for COs

- ◆ Ideal to be used in the first phase of the CO, to Define Concepts, Generate Ideas & Capture User Requirements.

Joshi, S.(2018) *Co-creation framework – building a sustainable ecosystem*, D1.1, Co-Inform: Co-Creating Misinformation-Resilient Societies

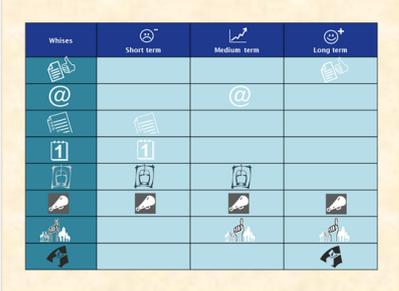
A1.25 What if

What if
Interaction in the Co-Design Process Moment:
Recommended for: <ul style="list-style-type: none"> ◆ Define concepts/Generate ideas/Capture user requirements.
Initial purpose / Objective
Identify improves or innovation of services/products/processes, etc. “imagining” deviations from their expected normal behaviour.
What it consists of / steps for its realization
Brainstorming in which a group of people experienced and familiar with the process in question asks questions about some undesirable events or situations that begin with the phrase "What happens?" Steps: 1- Definition of the scope of the study. 2- Collection of the necessary information. 3- Definition of the work team. 4- Development of the questionnaire. 5- Results.
Participants
<ul style="list-style-type: none"> ◆ Number: 5-8. ◆ Type: service users.
Configuration / necessary resources
<ul style="list-style-type: none"> ◆ Estimated time / estimated duration: 30-45 min. ◆ Modalities: face-to-face ◆ Support materials: cards to collect ideas, mural to show the ideas, pens, etc. for the face-to-face dynamic ◆ Human resources: 1-2. ◆ Implementation costs: Low. <div style="display: flex; justify-content: space-around; align-items: flex-end; margin-top: 20px;"> <div style="text-align: center;">  <p>Cards/ notesheet</p> </div> <div style="text-align: center;">  <p>Markers</p> </div> <div style="text-align: center;">  <p>Adhesive notes</p> </div> <div style="text-align: center;">  <p>Panels or murals to expose ideas</p> </div> </div>
Results
<ul style="list-style-type: none"> ◆ Application results: Generate a list of possible incidental scenarios, their consequences and possible solutions for risk reduction. ◆ Captured needs type: Explicit needs.

Strengths / Weakness / Challenge
<ul style="list-style-type: none"> ◆ Strengths: <ul style="list-style-type: none"> • Easy application. • Application possible to any facility, area or process. ◆ Weakness: <ul style="list-style-type: none"> • Adaptation to the particular case being analyzed required. • Knowledge of the system required.
Application for COs
<ul style="list-style-type: none"> ◆ Appropriate group(s) of stakeholders to involve ◆ Adaptation for COs proposal

The Structured What-If Technique (SWIFT) is a systems-based risk identification technique that employs structured brainstorming, using pre-developed guidewords/headings in combination with prompts elicited from participants, to examine risks and hazards at a systems or subsystems level.

A1.26 Wished Future

Wished future																																					
Interaction in the Co-Design Process Moment:																																					
Recommended for: Technical design / Prototyping.																																					
Initial purpose / Objective																																					
<p>Organize a specific discussion about shared desires or views about the future of a project or other activity.</p> <p>Transform "wishes" into possible indicators of progress toward the desired future.</p> <p>Reflect over the relevance of the activities based on the visions in relation to the development.</p>																																					
What it consists of / steps for its realization																																					
<ol style="list-style-type: none"> 1. Ask participants to describe how they would like things to be in the future. Clarify what future refers to "the wishes" (period or term). 2. Write each "wish" on a card. 3. Mix and read the cards aloud. Write them down on a board or mural, trying not to repeat them, and group them together. 4. Open a period of brainstorming, to configure the image of a shared future. 5. Represent the wishes graphically in a mural. 																																					
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Participants
<ul style="list-style-type: none"> ◆ Number: 6-10. ◆ Type: all, depending on the topic to study.
Configuration / necessary resources
<ul style="list-style-type: none"> ◆ Estimated time / estimated duration: 60-90 minutes. ◆ Modalities: face-to-face ◆ Support materials: cards to collect ideas, mural to show the ideas, pens, etc. for the face-to-face dynamic. ◆ Human resources: 1-2. ◆ Implementation costs: Low. <div style="display: flex; justify-content: space-around; align-items: center; text-align: center;"> <div style="margin: 10px;">  <p>Cards/ notesheet</p> </div> <div style="margin: 10px;">  <p>Markers</p> </div> <div style="margin: 10px;">  <p>Adhesive notes</p> </div> <div style="margin: 10px;">  <p>Panels or murals to expose ideas</p> </div> </div>
Results
<ul style="list-style-type: none"> ◆ Application results: Organization in the time of the goals to be achieved in the development of a project or activity. Based on these, indicators of achievement can be defined. ◆ Type of captured needs: Tacit needs.
Strengths / Weakness / Challenge
<ul style="list-style-type: none"> ◆ Strengths: Concrete in the definition of future goals that can become to the definition of indicators to evaluate the development of a project or activity. ◆ Weaknesses: This is a dynamic of some complexity. "Whishes" are not always being translated into "possible goals."
Application for COs
<ul style="list-style-type: none"> ◆ Appropriate group(s) of stakeholders to involve: ◆ Adaptation for COs proposal: it make easier the consultation and deliberation of the group of participants

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