

SISCODE CO-DESIGN FOR SOCIETY IN INNOVATION AND SCIENCE

DELIVERABLE 3.6

DISSEMINATION PLAN IN THE CO-CREATION LABS ECOSYSTEMS

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Glossary of terms used

Acronym	Definition
EU	European Union
RRI	Responsible Research and Innovation
STI	Science, Technology and Innovation
WP	Work Package
D	Deliverable
DoA	Description of action

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Executive Summary

SISCODE is an EU funded project aimed at stimulating the use of co-creation methodologies in policy design and the use of bottom-up design driven methodologies to pollinate Responsible Research and Innovation (RRI) and science, technology and innovation (STI) Policies. In order to achieve this goal the project consortium runs a European wide research to understand the dynamics within these co-creation environments as well as the outcomes that can be obtained from such approaches. These results will then be compared to devise a set of co-creation methodologies suited for scalability and replication.

The project understands that experimentation is a key element to succeed in its objectives. In WP3, SISCODE project plans, conducts, monitors and disseminates high-impact experiments in real-life contexts that take place in 10 co-creation labs across Europe and are conducted through the implementation of co-creation journeys. In a 15 month long process, the co-creation journeys engage local partners and stakeholders in a co-creation process that tackles locally relevant societal challenges.

Deliverable 3.6: Dissemination Plan within the Co-Creation Labs Ecosystems reports on the development and presents the first rendition of the co-creation labs dissemination plans. The proposed plans are based on the outcomes of the co-creation labs workshops that took place in December 2018 and January 2019. During the workshops, the labs, together with their support groups, refined their challenge, drafted the initial stages of their journey and defined the first version of their stakeholder's map. As such, it is understood that the plans are first renditions that need to be revised and updated as the co-creation journeys themselves are re-defined.

The 10 plans presented in this report are not limited to dissemination actions, but include communication and engagement activities. They put forward encompassing dissemination, communication and engagement actions and objectives not only with the aim of making the co-creation results available but also to plan and deliver successful actions to actively involve relevant stakeholders and to reach broad audiences.

1. Introduction

Led by the Politecnico di Milano, SISCODE is a Horizon 2020 funded project that investigates the potentialities and the outputs of co-creation¹ through a design-driven approach for a better inclusion of society in innovation and science, and for building an evidence-based learning framework meant to integrate co-creation with organisational change mechanisms at the different levels of the science, technology and innovation (STI) governance systems.

As an integral part of SISCODE's investigation, the project implements 10 co-creation journeys taking place in 10 co-creation labs across Europe:

- In three Living Labs: Krakow Technology Park (KTP), Krakow; PA4ALL, Novi Sad; and Thess-AHALL, Thessaloniki;
- In three Fab Labs: Fab Lab Barcelona, Barcelona; Polifactory, Milan; and Underbroen, Copenhagen;
- In four Science Centres and Museums: Cube design museum, Kerkrade; Pavilhão do Conhecimento - Ciência Viva, Lisbon; Science Gallery Dublin, Dublin; and Traces, Paris.

These high-impact real-life experiments aim at increasing the knowledge on co-creation and testing the effectiveness of design methodologies to better combine co-construction (ideation) and co-production (implementation) of solutions and policies for the integration of society in science and innovation. Bringing together local partners and stakeholders in a co-creation process (from co-design to co-production of prototypes and back to co-design), each co-creation journey tackles a specific societal challenge and creates inspiring, tangible and locally designed solutions and related policies with a strong potential for replication, taking into account the different cultural, institutional and regulatory backgrounds.²

To be able to deliver its journey, each lab needs to set up local networks that bring together local actors around their specific societal challenges: users, internal and external stakeholders, and institutional actors. And although it is understood that these networks

¹ “Co-creation is a non-linear process that involves multiple actors and stakeholders in the ideation, implementation and assessment of product services, policies and systems. It aims to improve their efficiency and effectiveness, and the satisfaction of those who take part in the process” (SISCODE Toolbox).

² To better understand the plans proposed in this report, read *Deliverable 3.1: Co-creation Journey*, where the co-creation journeys are laid out, including definition, methodology and objectives.

will act as multipliers - communicating to the broader community the value of co-design and the lessons obtained through their participation in the co-creation journeys -, labs need to assure that local target groups have access to the results of their journey and that their communities are engaged in a continuous dialogue with the project. In other words, as part of their co-creation journey, each lab needs to communicate, disseminate and engage with various stakeholders in order to promote the journey, to stimulate the public disclosure of the results and to assure that users, internal and external stakeholders, and institutional actors are active parts of the co-creation activities.

Thus, although initially the current document aimed at reporting on the development and presentation of the first version of the co-creation labs dissemination plans³, the plans that the co-creation labs have developed extend their scope to also include different levels of interactions defined by the challenge, the nature of each lab, and the expected outcomes of the interactions with stakeholders. To achieve this objective, each plan maps actions and strategies to actively involve relevant individuals and organisations through the design of a strong flow of interactions between the lab and its stakeholders. As a strategic tool to maximise the impact of each journey - and the impact of SISCODE as a whole -, each plan includes the following sections:

1. **About the lab:** a short introduction of the lab
2. **Situation analysis:** understanding the context in which actions will take place including:
 - a. **The challenge** that each lab will tackle;
 - b. **Internal landscape:** the network of stakeholders, experience with similar projects and methodology, strengths and weakness in regards to communication, dissemination and engagement;
 - c. **External landscape:** the media, policy and public landscape;
 - d. **Potential risks or barriers and responses:** the difficulties that labs encounter when it comes to engagement, dissemination and communication, and actions they plan to take to overcome said difficulties.
3. **Strategy:** the mapping of stakeholders, scope and actions to be taken in delivering an effective plan for the engagement of stakeholders.

³ “This task aims at developing and implementing a dissemination plan of the co-creation activities and outcomes at the level of the labs’ ecosystems. It will leverage local stakeholders up to the international networks of Fab Labs, Living Labs, and Science Centres/Museums through the involved partners. This dissemination plans will be strongly connected with the extensive and transnational strategy of dissemination of the project (WP7)”. (SISCODE Description of Action).

- a. **Key messages:** a series of messages that have been authored or adapted from SISCODE's overall communication plan (D7.1: Dissemination plan) to guide the tone and scope of the interactions between labs and stakeholders.
 - b. **Stakeholders and scope:** a matrix in relating the levels of integration (see following section), stakeholders and the scope of their interaction with the lab.
 - c. **Communication channels:** the online and offline channels (and products) that can be used for the engagement of stakeholders and the communication and dissemination actions.
4. **Action Plans:** the table of concrete measures to be taken. In this first rendering of the action plan, no specific date (or week) was used; instead, the actions are planned by relating the phases and activities of the journey with the stakeholders, objectives, barriers, key messages, actions and channels to be used.

The plans included in this report are based on the first version of the co-creation journeys, as set in *Task 3.1: Design of the co-creation journeys* and reported in D3.1: Co-creation journeys.

The co-creation journey is composed of four phases, supported by two activities that consist in understanding the local context and engaging stakeholder networks. The phases are:

1. **Analyse context:** to understand the context based on experience or analysing the situation, or re-interpret an existing (problem?). To identify how differences in circumstances of the environment are related to the project/challenge.
2. **Reframe problem:** to create a structure from what you have learned about the context and stakeholders, but also drawing from personal experiences to gain multiple perspectives about the problem.
3. **Envision alternative:** elaboration of new ideas based on the previous reflection or conversions and insights into concepts. Clustering and synthesizing concepts into coherent value proposition systems.
4. **Develop and prototype:** apply the new visions, ensuring that the solutions are purposefully built around peoples' experiences and can provide real value.

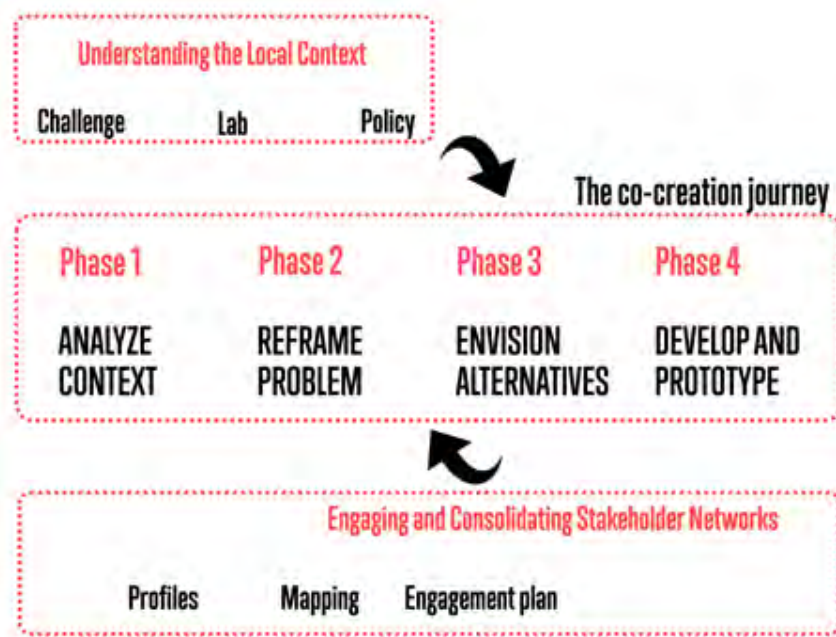


Figure 1: Overview of the co-creation process proposed in SISCODE

For each phase, a set of activities will be defined with the use of different existing tools, adapted for each context. All along the journey, users will need to plan which activities they want to apply in their context and define what will be the process they want to use for each of them. To support labs in the customization of their journeys and the definition of the tools they will use, a set of tools, collected from the *101 design methods* that were synthesized in small cards that can be manipulated and re-appropriated easily.

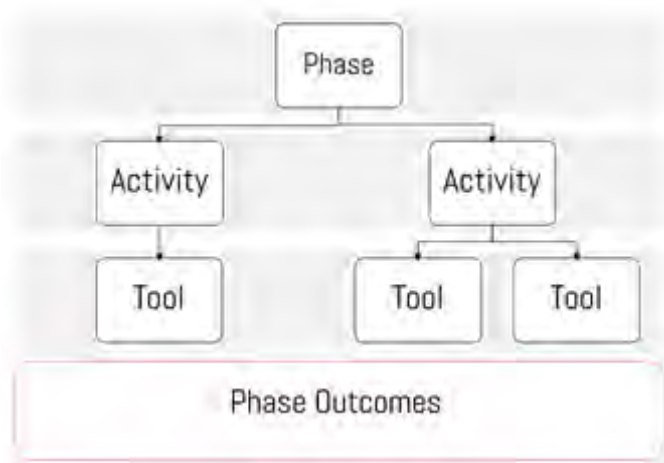


Figure 2: Interrelations between Phase, Activities and Tools

The SISCODE Toolbox aims to facilitate the design and implementation of co-creation journeys for the SISCODE laboratories, focussing on better understanding and prioritisation of the particularities of each context. The selection of the existing tools and toolkits will support the development of the design-based process from the problem analysis to the

Throughout their journeys, labs will make use of SISCODE Toolbox, a “meta-design and experiential-learning framework that aims to facilitate the design and implementation of co-creation journeys for the SISCODE laboratories, focusing on a better understanding and prioritization of the particularities of each context”. As introduced in the Toolbox itself,

ideation of a solution, the development of a prototype and its experimentation in a real-world context. The main goal of the SISCODE Toolbox is to provide support for the co-creation labs in making sense of existing data, tools and toolkits. (SISCODE Toolbox)

In December 2018 and January 2019, labs set in motion the design of their journey with in-person workshops. Co-designed and implemented with a support group⁴, these “physical workshops took place in each lab to foster intents, share knowledge and co-design the future journeys” (D3.1). During the workshops, the labs used the SISCODE Toolbox to refine their challenge; the stakeholder’s map and draft the initial stage of their journeys. After the workshops, the labs had a chance to re-work the different canvases and tools proposed in the Toolbox and finally shape a first version of their co-creation journey.

The authoring of the current document was closely connected to the work and outcomes of the workshops, and as such, different labs have reported (planned) different phases and activities to include in the plans, i.e. while some labs included all phases in their plans; a few included only Phase 1 (Analyse context) and/or Phase 2 (Reframe problem).

Ecsite implemented two processes for gathering and processing information from the Labs: for the first labs to run their workshops, Ecsite worked from the Toolbox’s scans created during the co-creation workshops. This meant that Ecsite had to transcribe and reinterpret the context, phases and stakeholders described in the scans, to then propose a dissemination plan.

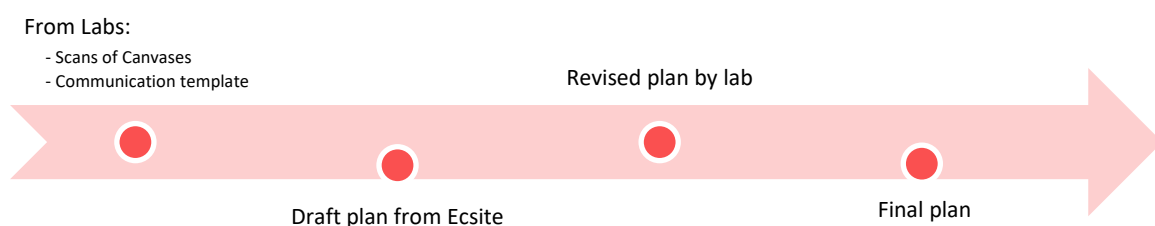


Figure 3: Process for authoring plans used for living labs, Underbroen and Polifactory

The second process was based on the labs’ contribution to D3.1, in which the labs had the chance to process the workshop outcomes. The documents provided clearly organised the information necessary for Ecsite to write the draft plan for each lab.

⁴ A support group was created with a referent for each type of lab to design and run the 10 different workshops. This support group was composed by POLIMI and ENOLL, IAAC, and CUBE respectively referents for the Living Labs, Fab Labs and Science Centres and Museums. (D3.1)

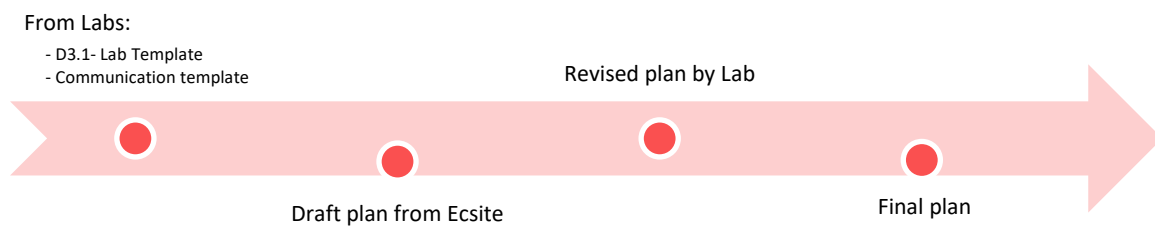


Figure 4: Process for authoring plans used for the remaining labs

Moreover, Ecsite collected additional information from the labs, such as communication channels, labs audiences, and reach. By implementing these two processes Ecsite was able to avoid delays on the report delivery, as not all labs provided information at the same time. And by authoring the first draft, Ecsite was able to minimise the input needed from each of the labs.

The plans presented in this deliverable are live documents, to be revised and updated as an integral part of the co-creation journey (implementation). Their main goal is to assist the labs in the planning and executing of the engagement, dissemination and communication actions of the labs.

2. Approach

As stated in the introduction, the current report extends its range beyond the public disclosure of results, to chart strategies and actions to reach and actively engage stakeholders in the co-creation journeys, and to promote them to a multitude of audiences. In other words, the plans presented here encompass engagement, dissemination and communication. For the purpose of this report, these terms can be defined as:

- **Engagement:** the direct involvement of policy makers, public, civil and industrial stakeholders, including citizens (final users) in the co-creation journey.
- **Dissemination:** public disclosure of the results of the project in any medium, including publications and external presentations.
- **Communication:** taking strategic and targeted measures for promoting the co-creation journey (of SISCODE) itself and its results to a multitude of audiences, including the media and the public, and possibly engaging in a two-way exchange.

	Engagement	Dissemination	Communication
Definition	Engagement is about involving citizens in the decision-making process or in the research process itself . Public engagement is about bringing on board the widest possible diversity of actors.	Dissemination is the public disclosure of the results by any appropriate means (other than resulting from protecting or exploiting the results), including by scientific publications in any medium.	Communication on projects is a strategically planned process that starts at the outset of the action and continues throughout its entire lifetime, aimed at promoting the action and its results . It requires strategic and targeted measures for communicating about (i) the action and (ii) its results to a multitude of audiences , including the media and the public and possibly engaging in a two-way exchange.”
Objective	To elicit input in the form of opinions, judgments, decisions and actions that informs processes, outcomes and policies.	Transfer knowledge & results with a view to enable others to use and take up results , thus maximizing the impact.	Reach out to society and show the impact and benefits.

	Engagement	Dissemination	Communication
Focus	Assure that representatives from affected Stakeholder groups (including users and citizens) and part of the decision making process . Public engagement is about bringing on board the widest possible diversity of actors.	Describe and ensure results available for others to use.	Inform about and promote the project and its results / successes.
Audience	Stakeholders that are affected and can benefit from results and processes.	Audiences that may take an interest in the potential use of the results (e.g. scientific community, industrial partner, policy makers).	Multiple audiences beyond the project's own community incl. media and the broad public.

Table 1: Defining engagement, dissemination and communication⁵

There are two main reasons for choosing an overarching approach: firstly, boundaries between certain activities – in particular with regards to communication actions and dissemination – are often blurry or can sometimes overlap, oscillating between communication and dissemination, depending on the final audience it reaches; secondly and most importantly, for many labs, the person responsible for engagement, dissemination and communication is the same. By presenting an overview of all actions related to interactions with stakeholders, team members can better plan and execute overlapping actions.

⁵ Adapted from: [Making the most of your H2020 Project](#) and [Science, Society and Engagement – An e-Anthology](#)

3. Overarching strategy

While each lab has a very specific plan defined by its challenge and local context, there are common aspects shared by all labs, as defined by the Description of Action and by SISCODE overall communication and dissemination strategy (D7.1).

The common aims of the dissemination plans are to: i) stimulate the public disclosure of the SISCODE results to the target groups (dissemination); ii) enhance the application potential of the project results in further research activities developed by different stakeholders (exploitation); and iii) engage target audiences in the project activities and achievements in a targeted manner (see below the paragraph on the target groups of SISCODE), aiming to establish a reciprocal exchange, at all stages, both with stakeholders and the public beyond SISCODE's own community (communication).

In regards to defining and reaching stakeholders “each SISCODE lab will set up local networks that bring together local actors around their specific societal challenges: users, internal and external stakeholders and institutional actors. Each co-creation lab will thus address directly a particular subset of the local citizenry that will be end users of their solution or policy” Description of Action (DoA). Although each lab will engage with stakeholders specific to their challenge and local context, labs needed to consider key stakeholders groups as established by the overall strategy of SISCODE, especially when it comes to dissemination and communication strategy. They are: policy makers, scientific and research community, industry/innovation community, civil society/ Non-Governmental Organisations (CSOs, NGOs), formal and informal education community, end users, and broad public/citizens.

3.1. Alignment and synergies with SISCODE's overall strategy

As set in the Description of Action, “the dissemination plans will be strongly connected with the extensive and transnational strategy of dissemination of the project (WP7)”. This is assured by:

1. Sharing, adapting and translating common tools:
 - a. **Newsletters** that raise awareness on the opportunities co-creation offers for reconnecting strategic objectives, topic and communities as well as to raise awareness on best practices and showcases.

- b. **Press releases** informing on the project milestones and main results, aimed at attaining press coverage of the project activities.
 - c. **Press kit** aimed at communicating about the project to the media.
 - d. **MOOC course** that will increase awareness and understanding of the potential of co-creation in the field of RRI, support the acquisition of design methodologies and competences, and disseminate the project results and outcomes.
 - e. **Videos** aimed at helping target audiences understand the opportunities that co-creation can offer to develop RRI further as well as to produce more acceptable science policies.
 - f. **Printed promotional materials** that present and promote the project.
2. Use of dedicated pages for the co-creation labs within SISCODE website: SISCODE website has a dedicated space for the co-creation labs where they are able to communicate about their co-creation journeys and learnings.
 3. Minimizing overlap between labs and between transnational and local actions: through the authoring of this report, Ecsite was able to avoid as much as possible that the same stakeholders are contacted by different partners in short periods of time.

4. Implementation, monitoring and reporting

As a live document, the local plans are conceived to be revised and reconsidered throughout the co-creation journeys. These moments of reconsideration will take place at the end of each phase and by re-working the Stakeholder Map Canvas and the Stakeholder Engagement Plan Canvas⁶:

- **Stakeholders Map Canvas:** charts partners, contributors, audiences, etc. and what role they play or could play in the labs' ecosystems.
- **Stakeholder Engagement Canvas:** through the engagement and dissemination canvas, labs can define their strategy to engage and communicate with their stakeholders. The action plans included in the plans present the same structure as the canvas.

As defined in SISCOE Toolbox, co-creation journeys take shape through four phases, each with different goals and results:

- **Analyse Context:** The aim of this phase is to understand the context in which the challenge will be addressed, in terms of local characteristics, stakeholders, relevant policies. It consists in researching and identifying how the different characteristics of the environment are related to the challenge and the capabilities of the lab.
- **Reframe Problem:** The aim of this phase, on the basis of the common understanding of the local context, is to learn and gain multiple perspectives about the main problem, in order to identify new possible opportunities to undertake the challenge.
- **Envision Alternatives:** The aim of this phase is to elaborate new ideas and viable solutions to address the challenge grounded on previous insights and reflections. Hence, multiple concepts will be generated and aligned in a coherent value proposition system related to the challenge.
- **Develop and Prototype:** The aim of this phase is to apply new concepts, ensuring that solutions are purposefully designed and implemented considering stakeholders' needs and expectations. This will be carried out by means of co-developing, testing and assessing practices in an iterative manner, to provide a real value for the extended ecosystem of concerned stakeholders.

⁶ Within D3.1, IAAC presents in detail SISCOE Toolbox.

Labs are expected to revise the two previously mentioned canvases three times at the launch of each phase. By revising their plans, labs can reassess their strategies and deepen the level of detail presented in the Action Plans.

All labs are expected to report twice a year on their dissemination activities. In practice these reports are part of the overall reporting sent to Ecsite by all partners as part of WP7. All actions taken by the labs during the co-creation journey will be part of the reporting for WP3. A template, following the European Commission's requirements, was produced and shared with the partners. The template for reporting aims to homogenise and facilitate the dissemination reporting among all consortium members. The reporting template is available [here](#). Ecsite will set up a system of reminders for the co-creation labs to share information about their open days and events on time as shown below:

- Event report: Deadline: 14 days after the event.
- Early warning: 7 days before the event.
- Reminder 1: 7 days after the end of the event.
- Reminder 2: 10 days after the end of the event.

5. Next Step: open days

Open days are events in which the co-creation labs will open their doors to a wider community. Each of the 10 co-creation labs will host at least two open days throughout their co-creation journeys, when labs will offer a programme of interactive workshops, activities, talks etc. Ecsite will work together with its members (science museums) to create a pool of activities which co-creation labs can choose to use or which can serve as basis for further experimentation with science engagement.

D7.3 Activities pool for co-creation labs open days is due on M10, February 2019.

Throughout the upcoming weeks Ecsite will be consulting with Cube, Pavilhão do Conhecimento, Science Gallery Dublin and Traces to determine which types and examples of existing engagement activities should be included.

6. Engagement, dissemination and communication plans

In the following sections, the plans for each lab are presented. The labs are grouped according to their typology: Living Labs, Fab Labs and Science Centres and Museums.

Below is their presentation according to *Deliverable 3.1: Co-creation Journey*:

Living Labs are open innovation environments characterized by systemic co-creation, multi-stakeholder participation and active user involvement in real-life settings through multi-method approaches. They operate as intermediaries among citizens, research organisations, companies, cities and regions for joint value co-creation, rapid prototyping or validation to scale up innovation and businesses. The European Network of Living Labs (ENoLL) is composed of more than 400 historically recognized Living Labs, of which three Labs are acting as co-creation Labs within the framework of the SISCODE project: KTP, PA4ALL & Thess-Ahall. KTP aims to develop modern economy and innovative academy-based technology enterprises in the region of Krakow, Poland. PA4ALL focuses on precision agriculture, cross-fertilizing two most promising sectors in Serbia but also globally: Information and Communication Technology (ICT) and agriculture. Thess-Ahall is very active in the field of active ageing, working closely together within the actual community settings in Greece.

The Fab Lab Network is an open, creative community of fabricators, artists, scientists, engineers, educators, students, amateurs, professionals, of all ages located in more than 78 countries in approximately 1,000 Fab Labs. From community based labs to advanced research centres, Fab Labs share the goal of democratizing access to the tools for technical invention. This community is simultaneously a manufacturing network, a distributed technical education campus, and a distributed research laboratory working to digitize fabrication, inventing the next generation of manufacturing and personal fabrication. With the launch of the Fab City initiative, some Fab Labs jointly with citizens and city officials collaborate locally to implement new urban models through interventions in governance and policy. Fab Lab Barcelona, Underbroen and Polifactory are at the core of both Fab Lab and Fab City networks experimenting with many approaches and stakeholder pushing for the adoption of the culture of making of many societal contexts.

Ecsite is the European network of science centres and museums, linking science communication professionals in more than 400 institutions in 50 countries. Founded 30

years ago, ECSITE⁷ connects member institutions through projects and activities the organisation facilitates the exchange of ideas and best practice on current issues. The members engage the public in science through accessible, interactive exhibits and programs. Ecsite's vision is to foster creativity and critical thinking in European society, emboldening citizens to engage with science. Its mission is to inspire and empower science centres, museums and all organisations that engage people with science, and to promote their actions.

The four science centres involved in the SISCODE project (Ciência Viva in Portugal, Traces in France, Science Gallery Dublin in Ireland or Continium/Cube in the Netherlands), are all convinced that public engagement goes further than participating in activities and programs and includes the participation of different stakeholders in policy making, co creation and the design process based on the integration of RRI.

6.1. Living Labs

6.1.1. Krakow Technology Park

6.1.1.1. *About the lab*

Krakow Technology Park (KTP) was established in 1997 with the mission of developing modern economy and innovative academy-based technology enterprises in the region. KTP plays a key role in the development and growth of the local economy in information, communication and technology (ICT) and e-driven solutions, being a hub for innovative Small and Medium Enterprises (SMEs) offering them varied infrastructure, state-of-the-art labs, office space and a vast range of training, information and consulting opportunities. As a Business Innovation Centre, Krakow Technology Park supports directly over 150 companies (incubators, accelerators, tenants) located in the venue, gathers 100 IT & ICT based companies in clusters and the same number in special economic zone.

6.1.1.2. *Situation analysis*

The challenge

KTP's **challenge is to improve the quality of the air in Krakow by motivating citizens to change their ecological attitudes, transport and/or heating habits.** When it comes to air pollution, Krakow ranks badly nationally and internationally. The effects can be felt not only by citizens, but also by companies and local government: from allergies to loss of businesses. Working on the basis of citizen driven approach, KTP will involve politicians and citizens to co-create new policies that tackle this challenge through new perspectives.

⁷ <http://www.ecsite.eu/>

Internal and external landscape

KTP enjoys wide access to the stakeholder groups relevant to its challenge; including experts in air pollution, transportation and mobility; besides governmental departments, local leaders, NGOs, start-ups and local lab communities. Moreover, KTP has experience engaging final users (citizens), as testers and as co-creators (i.e. testing the usability and functionality of solar bench for SEEDIA (Startup), The Pilgrim App for the World Youth Days, Exponats for Malopolska Science Centre Cogiteon project).

The Lab has experience in co-creation projects and in running participatory activities such as workshops, roundtables, hackathons, competitions, seminars and design thinking sessions. For example, the Smogathon that was co-organised by KTP gathered 123 participants - including representatives from the municipality and the national ministry for digitalisation, start-ups, and students – for a “battle against smog” that took the shape of a hackathon.

Smart KOM, a project piloted by KTP, the Malopolska Voivodeship, the Municipality of Krakow, Vienna University of Technology, and Forum Virium Helsinki, aimed at co-creating sustainable and smart city development plan, including effective management that addressed the needs of citizens, used modern technologies and tools in order to improve the quality of living across the entire Municipality of Krakow and its metropolitan area. Furthermore, KTP was involved in the creation process of Krakow 2030 strategy.

Externally, it is interesting to foreground how air pollution has placed high in the governmental agenda, with many policies put in place (i.e. incentives for parking outside city centre areas, subsidies for upgrading heating systems, etc.). Krakow 2030 strategy went further, with the introduction of new solutions, such as replacing traditional buses for electric ones.

Many initiatives and policies encounter cultural and economic pushback from citizens, such as: unwillingness (or impossibility) to invest in new radiators, a culture of driving private cars, perception of private transport as a status symbol, etc. Both citizens and government call for new and effective solutions, where needs of multiple stakeholders are heard.

Potential risks or barriers and responses

Risks/Barriers	Responses
New thematic field of expertise for KTP.	The lab will use previous experience from SMART-KOM project (ended in 2016), where key focus areas have been smart environment and smart mobility.
No expertise in the field of air pollution.	The lab will organise direct workshops targeted at different experts (research, business etc.).
Difficulty in reaching and involving different target groups, especially citizens.	The lab will distribute the information about the co-creation journey and its aim through all communication channels. Additionally Lab will organise an open call for participation in the workshops communicating the direct benefit for citizens.
New elected representatives, lab needs to build relations with new decision makers.	From the very beginning the lab will initiate direct meetings with representatives of policy makers at all levels (municipality, region, communes, and national authorities).
There are many exciting initiatives and activities aiming to reduce air pollution. Difficulty to create added-value on the regional landscape.	The lab will focus on the benefit of the co-creation process with participation of different stakeholders; the use of prototyping and testing phase in order to create complementary solutions as a direct outcome of the whole process.
Very short time to organise and perform the whole process of co-creation journey.	The lab will use its co-creation experience and expertise and prepare a detailed action plan and take benefit of existing ecosystem and stakeholders network.
Impossibility to highlight the journey within KTP website.	The lab will make focus on telling the Journey's story within SISCODE website and distribute the articles to local stakeholders.

Table 2: Risks and barriers for KTP communication, dissemination and engagement

*6.1.1.3. Strategy*Key messages

- No air pollution in Krakow and Malopolska
- You deserve clean air
- There is no future for business in societies without environmental considerations
- The change starts from the bottom
- Co-creation for solving the cities' everyday problems

- Together we can solve air pollution problems and co-create solutions
- A better city requires cooperation between everyone: including you!
- Co-creating locally, winning globally!
- Future-proofing our societies: Shaping policies together
- Innovations, technological development and sustainable business operations are the foundations for future societies

Stakeholders and scope

	Stakeholders group	Preliminary mapped organisations	Scope
Engage	Policy Makers	Marshall Office of Malopolska Region, Environment Development.	As experts within the public administration, to engage stakeholders as to gain accesses to their knowledge, to decide on challenge, envision alternatives and monitor progress.
		City of Krakow, Plenipotentiary for Air Quality Management.	To engage stakeholders as to evaluate activities related to inventoried areas affecting the quality of air in Krakow; to create a concept and monitor implementation of the "Integrated Quality of Air Management System in Krakow"; to initiate activities to improve air quality; and to cooperate with national/regional/local bodies, and socio-economic environments in the above area.
		The Metropolitan Association of Krakow (representing 15 communities around Krakow and responsible body for prioritisation of the investments and its implementation).	To engage stakeholders as to co-define the challenge, co-creating the wider picture regarding the challenge, reframing the problem, framing opportunities, participate in the envision alternatives phase, selection of applicable and appropriate ideas for demonstration and prototyping, and engagement in testing the prototyping as supervision.

	Stakeholders group	Preliminary mapped organisations	Scope
Engage	Citizens	Groups inside District Councils Citizens NGOs.	To engage citizens as co-producers, co-designers, being involved in consulting as well.
	NGOs & Civil Societies	NGOs: Krakow Smog Alert, Smogathon initiatives.	To engage NGOS and activists in the visualisation and interpretation of data, in co-creating the wider picture, reframing the problem, framing opportunities, to envision alternatives and to prototype and test solutions.
		Activists.	
	Research & Academia	Transport, Air Quality, Environment Protections Departments at the leading Krakow universities.	To co-create the wider picture regarding the challenge, as resources for gathering getting data & preparing the operational regulations, to participate in envisioning alternatives phase and to cooperate on the final concept development and prototype –supervision.
	Industry (Companies, SMEs and Start-ups)	Tech companies.	To engage tech companies, and other industry/ innovation partners to gather information, generate ideas & alternatives, for the selection of applicable and appropriate concepts to demonstrate and prototype – open discussion- and in the testing of the prototype.
Disseminate	Policy Makers	National Authorities.	To disseminate journey's outcomes & efficient solutions to air pollution in Krakow. Uptake and scaling up of solutions, demonstrating the value of co-creation in policy making.
	Citizens	Groups inside District Councils Citizens NGOs.	For the uptake of new values, including participation in decision making, final outcome.

	Stakeholders group	Preliminary mapped organisations	Scope
Disseminate	NGOs & Civil Societies	+ Activities acting in the field.	Dissemination if final outcome. Demonstrate the value of co-creating solutions.
	Industry (Companies, SMEs and Start-ups)	Tech companies.	Uptake and scaling up of final outcome.
Communicate	Policy makers, scientific and research community, industry/ innovation, education communities, lab communities, NGOs, Citizens, press and media representatives, local authorities.		To promote the actions, values & outcomes of KTP's co-creation journey and SISCODE project in general.

Table 3: Matrix of KTP stakeholders and scope

Communication channels

	Reach (as of Jan 2019)	Target audience								Post Frequency*
		Policy makers	S & R community	Industry/ innovation	Education communities	Lab communities	NGOs	Citizens	Media / Press	
Website	Unique visitors: 3.300 (in 28 days).	☒	☒	☒	☒	☒	☒	☒	☒	Varied
Mailing lists	Media representatives ca. 320	☒	☐	☒	☐	☐	☐	☐	☒	Varied
Facebook	Followers: 9.700	☒	☒	☒	☒	☒	☒	☒	☒	Varied
LinkedIn	Followers: 230	☒	☒	☒	☐	☐	☐	☐	☐	Varied
Instagram	Followers: 549	☐	☐	☒	☒	☒	☒	☒	☒	Varied

Table 4: KTP communication channels

Phase and Activity	Stakeholders	Objectives in terms of communication, dissemination or engagement	Barriers on reaching stakeholders	Key messages	Action	Channels						
						Web	Facebook	LinkedIn	Instagram	Other	Communique	Mails
Phase 3. Envision	3.1. Generate ideas	Citizens NGOs/Activists policy makers decision makers (municipality, regional level), business environment.	<u>Communication:</u> reaching the wide interest & possible end users.	Number of involved participants. Too many different ideas, proposals. Conflict of interests.	Set of possible & realistic concepts.	To evaluate & validate concepts.						
	3.2. Refine & select ideas (prioritizing ideas)						☒	☒	☒	☒	☒	☒
	3.3. Generate a concept											
Phase 4. Develop and Prototype	4.1. Concept implementation plan	Companies SMEs/ Start-ups, research & academia, citizens NGOs/Activists, policy makers, decision makers (municipality, regional level).	<u>Engaging:</u> reaching & involving companies to deliver the solutions. Involving the public opinion.	Limited budget. Management risk. Time limits. Difficulty in developing & creating prototypes.	Developed prototypes.	To verify the eligibility of the prototypes to meet local circumstances / benchmarking. To present the solutions during demo day.						
	4.2. Prototyping											
	4.3. Evaluating						☒	☒	☒	☒	☒	☒

Phase and Activity		Stakeholders	Objectives in terms of communication, dissemination or engagement	Barriers on reaching stakeholders	Key messages	Action	Channels						
							Web	Facebook	LinkedIn	Instagram	Other	Communiques	Mails
Dissemination	<u>Dissemination</u>	National authorities, media (national and regional level), public opinion.	<u>Disseminating</u> , informing, promoting, building capacity for future implementation. Presenting the value of involvement of varied stakeholders in co-creation process.	Lack of interest.	Good practice of co-creation and cooperation.	Face to face meetings between providers of potential solutions (based on prototypes) with local authorities. To present the results of the co-creation process with its outputs. To create database of end users. Press releases.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Table 5: KTP Action Plan

6.1.2. PA4ALL

6.1.2.1. About the lab

One of the first European Living Labs focused on precision agriculture, PA4ALL is an open innovation ecosystem that promotes the development of user-driven precision agriculture. PA4ALL was founded and is hosted by BioSense Institute, a public research and development institution which cross-fertilizes two most promising sectors in Serbia and globally: ICT and agriculture. Multidisciplinary research is performed in the fields of micro and nano-electronics, communications, signal processing, remote sensing, big data and artificial intelligence, robotics and Biosystems, with a common goal to support the development of sustainable agriculture.

6.1.2.2. Situation analysis

The challenge

In a nutshell, PA4ALL's challenge is to **introduce precision agriculture tools and the uptake of innovation in high-schools for agriculture** by presenting the benefits of using ICT and engaging stakeholders such as agriculture high-schools, farmers, and education policy makers. The introduction of ICT subjects in agriculture courses and inclusion of younger generations could increase the awareness of the relationship between technology and agriculture in order to grow the fields' productivity and at the same time make the study of agriculture more attractive to younger generations.

Internal and external landscape

PA4ALL brings together main innovation actors - public institutions, researchers, and technology and knowledge transfer institutions - with end-users to collaborate in finding real life solutions to pressing needs. The lab has established a vast network, bringing together farmers, citizens, local and national government and businesses. For example, in the speed dating sessions that PA4ALL organises, people from ICT and agrifood industry and government representatives present their problems, ideas, and discuss same topics from different perspectives.

PA4ALL has experience in co-creation methodologies and extensive involvement in international projects. The FRACTALS project, for example, brought a pool of international users to perform real-life testing and validation of internet enabled agricultural applications. Farmers, citizens, and government collaborate at "Digital Farm" which created an open air show-room where innovative AgTech solutions are presented and implemented on a real-life production farm, in order to allow farmers to see, test and assess them in real-world settings.

By tackling the challenge of ICT in agriculture education PA4ALL could benefit from the national support that the use of ICT receives from the Digital agenda of Serbia, strategy of development of information society in Serbia 2020 and Strategy of development of e-communication in Serbia 2010-2010. National policies are directed to setting up a modern educational system, adjusted to the needs of ICT society, as well as development of new digital educational contents, and training and mentoring teachers for the ICT adoption and operation.

Further, by engaging with a younger demographic group that has demonstrated higher adoption rates of technology, PA4ALL assures a solid test-bed for further co-creation and knowledge-transfer activities. And as they will lead the agricultural industry in 5-10 years, it is very important to introduce future professionals with principles related to community-driven development and the participation of citizens in science, research and innovation as early as possible. It could also be said that by delivering innovative solutions that are accessible to all farmers, regardless of the size of their holdings, PA4ALL could successfully uptake new tools, allowing farmers to become sustainable in the global competitive environment.

Lastly, PA4ALL is located in Vojvodina, a region in Serbia with a strong agricultural sector and therefore an ideal test-bed for applying the Living Lab approach. By engaging local players, PA4ALL can activate a dynamic value-chain of stakeholders involved in the participatory innovation approach that already exists in the region.

Potential risks or barriers and responses

Risks/Barriers	Responses
Difficulty in engaging teachers: Lack of adequate teaching staff trained in IT. Mind-set which is more oriented towards traditional agriculture methods.	Existing national policies that incentivise the use of ICT in education could be leveraged towards the participation in the experimentation of solutions for this challenge.
PA4ALL's mailing list is not yet compliant with GDPR and therefore cannot be used.	PA4ALL is working towards making its mailing list GDPR compliant.
Potential difficulty in engaging parents of the students of agricultural schools.	Higher engagement in showcasing benefits of introducing new teaching methods; parent-teachers conferences.

Table 6: Risks and barriers for PA4ALL communication, dissemination and engagement

6.1.2.3. Strategy

Key messages

- Be part of our co-creation journey.
- Be part of this journey.
- Co-creating the future of agricultural education.
- Co-creating a better education.
- Design for better education.
- Co-creation for better education.
- From beginning to end: you are part of the process.
- Let's co-design the future of agricultural education.
- Share your knowledge and together change agricultural education.
- Shifting paradigms: co-creating science, technology and innovation with society
- You are an essential part of this journey.
- Connecting the dots: students – teachers – policy shaping the future of agriculture together.

Stakeholders and scope

	Stakeholders group	Preliminary mapped organisations	Scope
Engage	Citizens	Students of agricultural high schools.	To engage an existing network of students as to generate alternative ideas and select applicable and appropriate one.
		Students from the Agricultural Faculty at the university of Novi Sad.	To engage an existing network of students to generate alternative ideas and select one.
		Parents (Board within the Parent Teacher Association).	To engage a network of parents to co-create the wider picture regarding the challenge and gain insights.
	Formal Education Community	Agricultural high school directors.	To establish and engage a network of directors as to gain insights and to test prototype.

	Stakeholders group	Preliminary mapped organisations	Scope
Engage	Policy Makers	Local Officials.	To establish and engage an existing network of local officers as consultants and testers.
	Policy Makers	Ministry of Education (Government officials for high-schools, sector for digitalisation in education and science).	To engage an existing network of government officials as key stakeholders in the lab journey: co-creating the wider picture regarding the challenge, gaining access to data, to generate alternative ideas and select applicable and appropriate one.
	Civil Society/NGOs	Association involved in farming education.	To map and engage an existing network of Serbian associations working in the field of farming education.
	Industry	Business Development Department (BDD).	To engage experts in business development and communications, three experts and educators in ICT equipment within the Laboratory of BioSense Institute in Novi Sad.
Disseminate	Citizens	Parents.	To involve parents as to raise awareness of the context and challenge, seeking support and uptake of co-created changes.
	Policy makers	Policy makers in the field of education & agriculture.	To promote the inclusion of ICT and precision agriculture in the training and curriculum of agricultural high schools, and promote creation of specific policies for inclusion of ICT in high schools, as well as animate the setting new funding options for ICT equipment purchase. To diffuse the culture and methodology of co-creation.

	Stakeholders group	Preliminary mapped organisations	Scope
Disseminate	Formal and informal education communities	School directors, teachers, science communicators.	To diffuse the culture and methodology of co-creation in agriculture education. To promote the uptake of journey outcomes.
	Civil Society/NGOs	Association involved in farming education.	To involve farming associations as to raise awareness of the context and challenge, seeking support and uptake of co-created changes.
	Scientific and research community	Researchers and experts in the field.	To raise awareness and further develop co-creation approaches in research in agriculture and agricultural education.
Communicate	General Public, The media, Policy makers, formal and informal education communities, Scientific and research community, Industry, Civil Society/NGOs		To promote the actions, values & outcomes of PA4ALL's co-creation journey and SISCODE project in general.

Table 7: Matrix of PA4ALL stakeholders and scope

Communication channels

	Reach (as of Jan 2019)	Target audience								Post Frequency
		Policy makers	S & R	Industry/ innovation	Education	Lab	NGOs	Citizens	Media / Press	
Website	Unique visitors: 46.876 Visits: 69.858 Page views: 297.493	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	1 / week.
Twitter	Followers: 1.187	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	2-3 / week
Facebook	Followers: 1.466	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	2-3 / week
LinkedIn		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	1/week
YouTube Channel	Subscribers: 22	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Based on the project activities

Table 8: PA4ALL communication channels

6.1.2.4. Action plan

Phase and Activity		Stakeholders	Objectives in terms of communication, dissemination or engagement	Barriers on reaching stakeholders	Key messages	Action	Channels					
							Website SISCODE	Website Lab	Facebook	Twitter	Mail	Other
Phase 1. Analyse Context	1.1 Desk Research	Students, policy makers, ministry representatives, school directors, farmers on Precision Agriculture.	<u>Engage</u> stakeholders to co-create the wider picture regarding the challenge.	Insufficient interest.	Better insight into the opportunities offered by ICT in schools.	Performing desk research.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Direct contact
	1.1 Desk Research	Students, policy makers, ministry representatives, school directors.	<u>Disseminate</u> desk research findings.	Insufficient interest.	Key research findings and benefits.	Communicate the findings.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Direct
	1.2 Interviews with relevant stakeholders	Students, policy makers, ministry representatives, school directors.	<u>Engage</u> - Co-creating the wider picture regarding the challenge.	Insufficient knowledge on the specific challenge.	Stakeholders' perspective and willingness to actively participate in the challenge.	Performing interviews.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Direct contact

Phase and Activity		Stakeholders	Objectives in terms of communication, dissemination or engagement	Barriers on reaching stakeholders	Key messages	Action	Channels					
							Website SISCODE	Website Lab	Facebook	Twitter	Mail	Other
Phase 1. Analyse Context	1.3 Synthesise & analyse data	BDD.	<u>Engage</u> : Deeper understanding of the challenges.	N/A	N/A	Performing in-depth data analysis.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Direct contact
	1.3 Synthesise & analyse data	Students, policy makers, ministry representatives, school directors, media and wider public.	<u>Disseminate</u> - To raise awareness of the context and the challenge.	Insufficient interest.	Conclusion of the analysis.	Communication of the overall conclusions.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
Phase 2. Reframe	2.1 Reasoning with analysis of the context	BDD.	<u>Engage</u> stakeholders: Clear vision with regards to the challenge.	N/A	N/A	Studious context analysis.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Direct contact

Phase and Activity		Stakeholders	Objectives in terms of communication, dissemination or engagement	Barriers on reaching stakeholders	Key messages	Action	Channels					
							Website SISCODE	Website Lab	Facebook	Twitter	Mail	Other
Phase 2. Reframe	2.2 Aligning the lab concept with knowledge gathered	BDD	<u>Engage</u> stakeholders: Choosing the local challenge.	Potential mismatch.	Clear vision of the lab concept.	Alignment while reaching the desired impact.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Direct
	3.1 Ideas generation	BDD, schools, ministry, school directors, parents advisory boards, farmers on Precision Agriculture.	<u>Engage</u> stakeholders: Garnishing plausible ideas.	Scarce alternatives.	Engagement and opportunities to co-create.	Idealisation.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Direct contact
Phase 3. Envision	3.2 Idea selection	BDD, ministry, school directors.	<u>Engage</u> stakeholders: defining the challenge.	Potential unfeasible achievement of deadlines set.	Engagement and inclusion.	Idea selection.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Direct
	3.2 Idea selection	Ministry/ parents' advisory board.	<u>Communicate</u> the concept of the idea selected.	Potential misaligned with the selected challenge.	Concept of the idea selected.	Communication.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	

Phase and Activity		Stakeholders	Objectives in terms of communication, dissemination or engagement	Barriers on reaching stakeholders	Key messages	Action	Channels					
							Website SISCODE	Website Lab	Facebook	Twitter	Mail	Other
Phase 4. Develop and Prototype	4.1 Concept development	BDD, schools.	<u>Engage</u> stakeholders: Full concept developed.	Potential administrative barriers/ potential of not aligning school year and project activities.	Affirmation and engagement.	Concept development.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Direct contact
	4.1 Concept development	Schools, students, teacher, educators, ministries, wider public, media.	<u>Communicate</u> to stakeholders the innovative approaches in Serbian Agri schools.	Reaching a few stakeholders through available channels.	The impact of introducing innovative teaching techniques.	Communication of the key message through available channels.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
	4.2 Prototyping	BDD, schools.	<u>Engage</u> stakeholders in the prototyping process.	Insufficient interest.	Implementation of prototype.	Implementation.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Direct

Phase and Activity		Stakeholders	Objectives in terms of communication, dissemination or engagement	Barriers on reaching stakeholders	Key messages	Action	Channels					
							Website SISCODE	Website Lab	Facebook	Twitter	Mail	Other
Phase 4. Develop and Prototype	4.2 Prototyping	Schools, students, educators, ministries, wider public, media.	<u>Communicate</u> to the wider community regarding the implementation of the project and the impact of the students' knowledge upgrade through innovative teaching techniques.	Insufficient interest or appreciation of novel approaches.	Students' impressions and achieved results.	Communication of the prototyping phase results	☒	☒	☒	☒	☒	

Table 9: PA4ALL action plan

6.1.3. Thess-AHALL

6.1.3.1. About the lab

The Thessaloniki Active and Healthy Ageing Living Lab (Thess-AHALL) is located and governed by the Laboratory of Medical Physics, part of the Medical School of the Aristotle University of Thessaloniki, Greece. The lab's main strengths lie with the operation in actual community settings and residences following a paradigm of in-the-wild collection and processing of data, offering ecological validity schemes, a strategic geographical location and a wide, transnational network with strong collaboration capacity with the Active and Healthy Ageing (AHA) ecosystem in Greece and the Balkan region. It is a hub of interconnected pilot sites that enable user-driven research and innovation in the Active & Healthy Ageing (AHA) domain.

Embracing co-creation approaches throughout its strong network of adherent stakeholders, Thess-AHALL has fostered collaboration with patients' associations, day care centres, and nursing homes as well as the corresponding municipality structures. Some of the most important European and international networks of which the Medical Physics Lab is an active member and which are related to the activity of Thess-AHALL are: the European Innovation Partnership on Active and Healthy Ageing (EIP on AHA), the International Association of Gerontology and Geriatrics (IAGG), the European Platform for Rehabilitation (EPR), Alzheimer Europe, etc.

6.1.3.2. Situation analysis

The challenge

Thess-AHALL's challenge is **to fight loneliness and social isolation in the ageing population and chronic patients by focusing on the role of participation**. Loneliness and depression are serious mental health concerns usually affecting older adults. Similarly, social isolation is also perceived by chronic disease patients who usually tend to spend their day mainly with other patients due to the cultural stigma regarding the loss of mental and physical ability. Thess-AHALL's big challenge is to break the social exclusion walls through the "Participate 4" campaigns that aims to welcome institutionalised and chronic disease outpatients, as well as older adults, back to the community, bridging the gap between the Academia and the society and opening Research and Social Innovation to the elderly population. To this end, older adults and chronic patients will feel as active members of the society, participating in research activities as co-creators, while at the same time the

academia will help in fighting the loneliness and social isolation experienced by these social groups.

Internal and external landscape

Thess-AHALL has an extensive network of key stakeholders with whom it has worked together towards better quality of living for elderly citizens. For example, the lab collaborates with a wide network of nursing homes and senior day care centres across Greece who makes serious games workstations available to older adults that have been developed by the lab. Thess-AHALL has also fostered collaboration with key stakeholders (day care centres, nursing homes, patients' associations, as well as the corresponding municipality structures); being trusted by the relevant private and public structures in the Northern Greece region, as well as throughout the Greece territory.

The lab has experience in engaging with diverse partners in collaborative projects: for example, the project *webFitForAll* brought together SMEs, developers, research groups, academia, research projects, ageing citizens, healthcare professionals, living labs, pilot sites and patients associations for the development of a collaborative tool for third parties to design serious games with and for elderly people (remotely).

Externally, is interesting to highlight that with the ageing of Europe's population, loneliness and social isolation are gaining increased attention from policy makers and the media. Besides, there were previous awareness campaigns fostering the use of new technologies that could facilitate dissemination, communication and engagement actions.

An extensive mapping of competitors and complementors will be authored as part of research phase (1.3 Synthesize & Analyse Data) which will further inform the external landscape.

Potential risks or barriers and responses

Risks/Barriers	Responses
<p>Hard to engage with final users (elderly population):</p> <p>Research trying to mitigate the effects of social isolation, often fails to provide value to the people taking part in it. Final users usually feel that researchers are exploiting them.</p> <p>Final users don't understand new terminologies and the scientific language and are afraid of what it could mean to co-design and use new technologies for their own benefit.</p> <p>Users don't expect to work with different stakeholders besides care and health providers.</p> <p>Low-education of older adults</p> <p>Bureaucracy to access older adults in day care centres etc.</p>	<p>Attention will be taken when communicating the value of engaging and of the final product (the "Participate 4" campaigns) to users.</p> <p>Through their existing network, Thess-AHALL will access municipal nursing homes and other facilities, gaining access to end-users.</p> <p>The Lab will author and distribute printed material catered to older adults and chronic patients in an attempt to prove them the benefits from their participation in research.</p> <p>Thess-AHALL will engage stakeholders through its Collaboration & Research.</p> <p>Community for the Independent Living, the members of which are close partners and co-designers of the Lab.</p>
<p>Caregivers are often overburdened by demands and high levels of stress, and thus could be hard to engage (lack of time & financial motivations).</p>	<p>The lab aims to show to caregivers (both formal and informal caregivers) that these campaigns could be of their benefit to, by training them in new research materials that could help their practice and learning about older adults' needs. This may help them to save both time and effort.</p>
<p>Social innovation and RRI are relatively new concepts in Greece. As far as it concerns the field of Active and Healthy Ageing, Greece lacks of effective knowledge and strategy, while only a limited number of relevant efforts have been made so far, mostly apparent in an experimental stage.</p>	<p>The lab, and the academia as a whole, should be aware of the concepts of Social Innovation and RRI, through informative campaigns and the motivation of stakeholders to participate in co-design and co-creation methods, applied in its research activities.</p> <p>Bilateral meetings of the Lab with policy makers (both public and private), so as to prove them the value of supporting RRI, SI, as well as the AHA, domains, either financially or by offering political support and networking to service research needs.</p> <p>The Lab to approach the media and science communicators to promote and explain in simple words the benefits of AHA for the modern ageing societies, as well as to bridge the gap between the Academia and citizens, triggering the mutual help and collaboration of both sides.</p>

Risks/Barriers	Responses
<p>Difficulty of engaging co-creators: Within the local landscape, public engagement is limited to awareness and simple donations, without active and continuous participation for the support of institutions.</p>	<p>Thess-AHALL will provide motivation of both institutions, associations, nursing homes and the public to actively participate in common good purposes by reinforcing seniors and patients' social activism and contributing to Active and Healthy Ageing. The "loyalty" point-system developed by the Lab is one of the motivation tools that will be used. Participation will be accredited to points, which will be turned into social goods and special gifts for a specific good purpose.</p> <p>Attention will be paid in how benefits are communicated to different stakeholders.</p>
<p>Researchers rarely communicate their research with the community mostly due to lack of time.</p>	<p>The Lab, and the Academia as a whole, to try to open its doors to the society and externalise its research work, as beneficial for citizens.</p> <p>Thess-AHALL to invite stakeholders to meet its team and learn about its activities, as well as the Lab to listen to society's needs/problems, proving that it does "research for the society and not research just for research".</p> <p>Thess-AHALL to eliminate the "us"- "them" (researchers-older adults) relation of the two sides, making the stakeholders of the challenge partakers, ambassadors and co-designers of the Lab and its research attempts.</p> <p>Implementation of the "From Science in Society to Society in Science" principle.</p>
<p>The general public may not easily understand the value of the "Participate 4" campaigns.</p>	<p>Thess-AHALL to publish some KPIs and measured outcomes after running its first campaigns. Also, Thess-AHALL can promote its experience of the successful implementation of the "Play 4" campaigns through the gamification of the city for a good purpose, which led to the generation of the "Participate 4" campaigns.</p> <p>The Lab to promote the "win-win" benefit for all the involved in the "Participate 4" campaigns parties: the Academia will be extrovert to the society, also being helped in the research fields by the participating stakeholders, the stakeholders will be active citizens and valuable research partners,</p>

Risks/Barriers	Responses
	while both sides will contribute to the implementation of a good purpose (This approach is also part of our research question, if these practices can adequately be used as motivation and engagement triggering for older adults).

Table 10: Risks and barriers for Thess-AHALL communication, dissemination and engagement

6.1.3.3. Strategy

Key messages

- Be part of our co-creation journey.
- Become part of the elderly and chronic patients' care future.
- Co-design for better work & research conditions (good practices).
- Collaborate with us to find solutions together for your problems.
- Come invent with us!
- Connect the dots: Communities-scientists-policy makers co-creating Science Technology and Innovation.
- From beginning to end: you are part of the process.
- Future-proofing our societies: Shaping policies together.
- Innovation for better living: Active & Healthy Ageing, Independent Living
- Let's co-create for better elderly care.
- Let's co-create to limit social isolation and the cultural stigma, experienced by older adults and chronic patients.
- Let's co-create to open the Academia to the society and bridge the gap between the two sides.
- Let's communicate how RII and SI can benefit both the Academia and the society.
- Our research to become a means of tackling the social isolation and welcome special target groups, like older adults and outpatients, back to the society.
- Science & Innovation for better elderly care.
- Shifting paradigms: Co-creating science, technology and innovation with society;
- Thinking with society: Real life experiments for policy makers.
- Understand-Ideate-Prototype: Shaping the elderly and chronic patients' care together.
- We listen to your needs, introducing social science and open research (co-creation).
- You are an essential part of our research.

- You are our closest partners, ambassadors of our research.
- You are still active members of our society and research needs you.
- Your support is an essential part to implement our research (sponsorships, corporate social responsibility (Corporate Social Responsibility) initiatives).

Stakeholders and scope

	Stakeholders group	Preliminary mapped organisations	Scope
Engage	Citizens	Older adults, Chronic patients.	To engage older adults in the co-creation journey as co-producers, co-designers & testers.
	Experts	Caregivers.	To engage experts throughout the co-creation journey, gaining insights, co-developing research, reframing the problem, framing opportunities, generating ideas, refining and selecting them, generating concepts and developing and testing prototypes. To also engage them as evaluators.
		Healthcare providers.	
		Social workers.	
	Civil Society/NGOs/Orgs	Doctors/ Psychologists.	To engage stakeholders throughout the co-creation journey, gaining insights, reframing the problem, framing opportunities, generating ideas, refining and selecting them, generating concepts and developing and testing prototypes.
		Patient associations (directors & members). Nursing homes. Hospitals (university clinics). Open day centres for older adults. Greek chapter of OKFN.	
	Policy Makers	Municipalities (Centres for the Open Care of Older Adults, “Help at Home”). Regional Health Authorities (Ministry of Health, Primary Healthcare system). Greek Inter-Municipal Network of Healthy Cities. European & Global Initiatives (EIPonAHA, WHO).	To engage policy makers throughout the co-creation journey, gaining insights, reframing the problem, framing opportunities, generating ideas, generating concepts and developing and testing prototypes.

	Stakeholders group	Preliminary mapped organisations	Scope
Engage	Scientific and research community	Research Centres Behaviour Scientists The Academia (AUTH).	To engage stakeholders throughout the co-creation journey, gaining insights, co-developing research, reframing the problem, framing opportunities, generating ideas, refining and selecting them, generating concepts and developing and testing prototypes. To also engage them as evaluators.
	Industry (Private Sector)	Companies (sponsors or medical equipment providers), private initiatives (funding or CSR initiatives), insurance companies, private day care centres, neurofeedback Centre of Thessaloniki.	To engage the private sector as to develop prototypes and provide support on the Iteration of the journey.
Disseminate	Citizens	Older adults & their families The general public.	To change citizens' understanding of the role they play in their care (care of the elderly). Uptake on final products.
	Experts	Caregivers, Professionals, Social workers, Doctors/ Psychologists.	To diffuse the culture of co-creation and uptake of new process of user engagement and products.
	Civil Society/NGOs	Nursing homes , Patient associations, , Healthcare providers.	To diffuse the culture of co-creation and uptake of new process of user engagement and products.
	Policy Makers	Representatives from municipalities. Regional Health Authorities. The Academia (university). Greek Inter-Municipal. Network of Healthy Cities.	To diffuse the culture of co-design and introduce changes in policy design processes and uptake journey outcomes.
	Scientific and research community	Researchers, research centres & scientists.	To raise awareness of co-creation methodologies, promoting the uptake in science and innovation local practices.

	Stakeholders group	Preliminary mapped organisations	Scope
Communicate	General Public, the media, science communicators, scientific and research community, industry & policy makers.		To promote the actions, values & outcomes of Thess-AHALL's co-creation journey and SISCODE project in general.

Table 11: Matrix of Thess-AHALL stakeholders and scope

Communication channels

	Reach (as of Jan 2019)	Target audience								Post Frequency
		Policy makers	S & R community	Industry/ innovation	Education communities	Lab communities	NGOs	Citizens	Media / Press	
Website	(no metrics)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	1/ week
Press Releases & Newsletter	(no metrics)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Rarely (1 / m) disseminating news via ENoLL's newsletter or when organizing an event, co-creation session etc.
Twitter	Followers: 131	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Between 2-3 / week
Facebook	Followers: 335	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Between 2-3 / week
LinkedIn	Followers: (under development)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Rarely (less than twice a month)
YouTube	Followers: 30	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Rarely (less than twice a month)

Table 12: Thess-AHALL communication channels

6.1.3.4. Action plan

	Phase and Activity	Stakeholders	Objectives in terms of communication, dissemination or engagement	Barriers on reaching stakeholders	Key messages	Action	Channels						
							Website	Website Lab	Facebook	Twitter	Youtube	LinkedIn	Mail
Phase 1. Analyse Context	1.1 Prepare Research	Nursing homes, Directors of the Healthcare centres & representatives of the patient associations.	<u>Engage</u> stakeholders to gain insights into users' perspectives & existing policies.	Lack of existing contact base & availability from stakeholders.	Be part of our co-creation journey. Let's co-design the future of elderly care. Share your knowledge and change the landscape of elderly care.	Map within existing contacts possible collaborators. Maps existing organisations locating new contacts & new collaborators. Direct contact inviting stakeholders to contribute to research.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
													Personal contact (phone calls, personalised emails, meetings, etc.)

	Phase and Activity	Stakeholders	Objectives in terms of communication, dissemination or engagement	Barriers on reaching stakeholders	Key messages	Action	Channels							
							Website	Website Lab	Facebook	Twitter	Youtube	LinkedIn	Mail	Other
Phase 1. Analyse Context	1.1 Prepare Research	All.	<u>Communicate</u> the start of journey.	Access to a broad number and diverse group of individuals.	Shifting paradigms: Co-creating science, technology and innovation with society. Design for better living. Co-creating the future of elderly care.	Author and distribute communiqué with accessible language.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	

Phase and Activity	Stakeholders	Objectives in terms of communication, dissemination or engagement	Barriers on reaching stakeholders	Key messages	Action	Channels						
						Website	Website Lab	Facebook	Twitter	Youtube	LinkedIn	Mail
Phase 1. Analyse Context	1.2 Research data collection	Experts in healthcare (doctors, caregivers, providers, researchers, students & scholars).	<u>Engage</u> stakeholders so as they partake in the research process.	Lack of existing contact base & availability from stakeholders.	Be part of our co-creation journey. Let's co-design the future of elderly care. Share your knowledge and change the landscape of elderly care.	Map possible collaborators within existing contacts. Maps existing organisations locating new contacts & new collaborators. Direct contact inviting stakeholders to contribute to research. Open Invitation distribute via communication channels.	☒	☒	☒	☒	☒	☒
												Personal contact (phone calls, personalised emails, meetings, etc.)

Phase and Activity		Stakeholders	Objectives in terms of communication, dissemination or engagement	Barriers on reaching stakeholders	Key messages	Action	Channels							
							Website	Website Lab	Facebook	Twitter	Youtube	LinkedIn	Mail	Other
Phase 1. Analyse Context	1.2 Research data collection	Elderly.	<u>Engage</u> stakeholders so they can inform research on their needs.	Lack of contact and access to elderly population, demanding that lab goes through day care and other centres.	You are an essential part of our research. Come invent with us. From beginning to end: you are part of the process.	Meeting existing contacts (decision makers) from day care and other centres. Visit day care and other centres to introduce the project. Produce printed material to share with the elderly.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Personal contact (phone calls, personalised emails, meetings,
	1.3 Synthesize & analyse data	Researchers of the Lab (psychologists, data analysts etc.).	<u>Engage</u> lab's researchers and other external academic partners to the objectives of the phase.	To make clear that the external parties will understand the challenge.	Connect the dots: Communities-scientists-policy makers co-creating Science Technology and Innovation.	Direct Contact.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Personal contact (phone calls,

Phase and Activity		Stakeholders	Objectives in terms of communication, dissemination or engagement	Barriers on reaching stakeholders	Key messages	Action	Channels							
							Website	Website Lab	Facebook	Twitter	Youtube	LinkedIn	Mail	Other
Phase 2. Reframe	2.2 Communicate & Share the Research Results	Practitioners, Scientific and research community, Civil Society, NGOs, Org, Policy Makers & Industry (Private Sector).	<u>Disseminate</u> findings of Phase 1, via a clear presentation of data (Activity 2.1). Objective: uptake of research.	Access to a broad number and diverse group of individuals.	From beginning to end: you are part of the process. Co-creation for better elderly care.	Distribute research results via a communiqué. Direct contact with key stakeholder, including contributors to Phase 1. Map and direct emails to key individuals.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Digital distribution of research

Phase and Activity	Stakeholders	Objectives in terms of communication, dissemination or engagement	Barriers on reaching stakeholders	Key messages	Action	Channels							
						Website	Website Lab	Facebook	Twitter	Youtube	LinkedIn	Mail	Other
Phase 2. Reframe	2.2 Communicate & Share the Research Results	All.	<u>Communicate</u> the research to broad audience as to generate interest and awareness about the journey.	Access to a broad number and diverse group of individuals.	Shifting paradigms: Co-creating science, technology and innovation with society. Design for better living. Co-creating the future of elderly care.	Make research available online and share it via social media.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
	2.3 Reframe the problem with stakeholders	Health care professionals, policy makers & elderly engaged in Phase 1.	<u>Engage</u> stakeholders in the reframing of problem (Phase 2) via face to face meeting.	Possible Stakeholders fall out.	“from beginning to end: you are part of the process”.	Direct contact and invitations.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Personal contact

Phase and Activity	Stakeholders	Objectives in terms of communication, dissemination or engagement	Barriers on reaching stakeholders	Key messages	Action	Channels						
						Website	Website Lab	Facebook	Twitter	Youtube	LinkedIn	Mail
Phase 4. Develop and Prototype	4.1 Develop the prototype	Elderly, nursing homes, patient associations, representatives from municipalities & caregivers.	<u>Engage</u> stakeholders in the co-design processes.	Fall out of stakeholders, lack access to elderly population, lack of existing contact base & availability from stakeholders.	Be part of our co-creation journey. Let's co-design the future of elderly care. Share your knowledge and change the landscape of elderly care.	Map within existing contacts possible collaborators. Maps existing organisations locating new contacts & new collaborators. Direct contact inviting stakeholders to be part journey.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
												Personal contact (phone calls, personalised emails, meetings,

Phase and Activity	Stakeholders	Objectives in terms of communication, dissemination or engagement	Barriers on reaching stakeholders	Key messages	Action	Channels						
						Website	Website Lab	Facebook	Twitter	Youtube	LinkedIn	Mail
Phase 4. Develop and Prototype	4.2 Evaluate the challenge	Experts in healthcare (doctors, caregivers, providers, researchers, students & scholars).	<u>Engage</u> stakeholders in the evaluation of the challenge.	Fall out of stakeholders, lack of existing contact base & availability from stakeholders.	Be part of our co-creation journey. Let's co-design the future of elderly care. Share your knowledge and change the landscape of elderly care.	Reach out to Phase 1 participants. Map within existing contacts possible collaborators. Maps existing organisations locating new contacts & new collaborators. Direct contact inviting stakeholders to contribute to research.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
						Personal contact (phone calls, personalised emails, meetings, printed material; etc.)						

Table 13: Thess-AHALL action plan

6.2. Fab Labs

6.2.1. Fab Lab Barcelona

6.2.1.1. *About the lab*

Fab Lab Barcelona is part of the Institute for Advanced Architecture of Catalonia (IAAC), where it supports different educational and research programs related with the multiple scales of the human habitat. It is also the headquarters of the global coordination of the Fab Academy programme in collaboration with the Fab Foundation. It is currently developing projects in different scales, from smart devices for data collection by individuals (Smart Citizen innovative project award in the Smart City Expo and World Congress in Barcelona), the development of the new generation of Fab Labs in the Green Fab Lab project, to the new production models for cities with the Fab City project being implemented in Barcelona. The mission of the Fab Lab is to provide access to the tools, the knowledge and the financial means to educate, innovate and invent using technology and digital fabrication to allow anyone to make (almost) anything, and thereby creating opportunities to improve lives and livelihoods around the world. Community organisations, educational institutions and non-profit concerns are our primary beneficiaries.

6.2.1.2. *Situation analysis*

The challenge

The challenge aims at exploring what could be the future skills developed in Fab Labs for supporting the transition towards more circular cities. It will particularly focus on the field of urban agriculture by engaging students and local communities to contribute to the redesign of future generations of vertical farming systems within a short-loop and eco-innovative approach.

The challenge will be situated within the Poblenou and Valldaura territories, engaging entrepreneurs, food cooperatives, local restaurants, the community of makers, students and other local enterprises. The challenge is systemic as it is supposed to think at both material, product and ecosystem level. Indeed the stakeholders will have to (1) reach a precise knowledge of the local resource flows, (2) explore new techniques for supporting material innovation from local bio-wastes and other Fab Lab wasted-materials and; (3) propose new product components for existing complex systems by constantly raising awareness of the potential environmental and social impacts they are generating.

In that sense, the lab will propose the creation of several knowledge experiences and the realisation of a maker challenge event. Open regular creative spaces for broader

discussions will take place in order to support a better understanding about the possible futures of agriculture for cities and a critical analysis of the conviviality of innovative urban agriculture systems like aeroponic technology.

Internal and external landscape

Fab Lab Barcelona has a full-time design and communications team which is supported by the communications department of IAAC. The Fab Lab is recognised as a strong communications coordinator and currently coordinates communications work packages in three EU projects. In 2018, The Making Sense project funded under CAPS, H2020 Call ICT2015 Research and Innovation which was coordinated by Fab Lab Barcelona and focused on participatory environmental maker practices was awarded an Honorary Mention by [STARTS Prize](#). Further, through the Fab City Project, Fab Lab Barcelona has been involved in multiple stakeholder engagement processes for participatory events including the co-production of the Fab City Summit and Fab City Campus in Paris, 2018; the Made:Again Challenge Poblenou in collaboration with Space10 and IKEA and many educational workshops and engagement projects locally, for EU research projects such as DSISCALE and in public-facing events such as Makerfaire Barcelona of which the Fab Lab is a co-producer.

Co-creation is very high on the agenda of local policy makers. The Mayor of Barcelona, Ada Colau, comes from a background of citizen activism, specifically in land-use and housing. The city government is also focused on digital empowerment and co-creation processes across the city using digital infrastructure. Francesca Bria, the Chief Technology and Digital Innovation Officer for the City is the founder of the Decode Project, an EU-wide effort to reclaim data sovereignty of citizens and leads Decidim, a digital platform for citizen engagement and decision making. These projects have generated a lot of media attention locally, specifically in relation to two major events which the City holds each year: the World Mobile Congress and the Smart Cities Week.

Businesses, specifically in the Poblenou area, are advancing local production, healthy and ecological trends. The city has a 0 km movement and a vegetarian and vegan market with Barcelona defining itself as a vegetarian friendly city. Citizen-driven urban gardens are supported by the City council across the city and are often established not only as spaces to grow food, but as meaningful community spaces to gather, host events and even protest.

Potential risks or barriers and responses

Risks/Barriers	Responses
It is difficult to engage and on-board Lab community.	Doing open calls. Making the different co-producer roles clear (i.e. taking part as generator, recycler, producer), and making it optional to be active in one or more (aligning the scope to their resources).
It is difficult to engage and on-board start-ups and SMEs.	Partner up with gatekeepers to reach and convince (they communicate the project).
It is difficult to engage and on-board industry players.	Partner up with gatekeepers to reach and convince such as MADE & DI (they communicate the project, co-host events). Partner up with said gatekeepers for match-making and contact.
It is difficult to reach and engage policy makers (officers).	Creating ownership through an advisory board, co-writers/producers of intent statements.
It is difficult to reach and engage policy makers (decision makers).	A dedicated communication strategy and plan on how to keep policy makers informed and involved throughout the project (reaching from press releases, one-pagers, to one on one meetings).

Table 14: Risks and barriers for Fab Lab Barcelona communication, dissemination and engagement

*6.2.1.3. Strategy*Key messages

- Revisit the circular future of agriculture in the Poblenou district with us!
- Come to make the future of urban agriculture/vertical farming systems more circular
- Learn about and challenge of aeroponics systems to make them locally-circular.
- Join us to imagine the future materials and products of aeroponic systems!
- Towards more circularity for local manufacturing: a pilot to gather new practices in fab labs, maker and design communities
- New tools for experimenting in your district with urban agriculture
- Fab labs as an epicentre for building better futures in cities
- Future proofing our societies: Shaping policies together
- Citizens shape the science policies of tomorrow
- Understand-Ideate-Prototype: Shaping science, innovation and technology together

Stakeholders and scope

	Stakeholders group	Preliminary mapped organisations	Scope
Engage	Urban Agriculture communities	Next Food and Grow Stacks.	To engage Nextfood as a decisive partner (application case) and to collaborate with the emerging Grow Stack community to create a local group.
		Urban Gardens.	To engage urban garden members in events for co-producing.
		Social Agriculture group and Vallldaura.	To engage the network of the Green Fab Lab as participants in the co-creation journey.
		Foodcoops.	To engage co-operators and pro-active consumers as participants in the co-creation journey.
	Makers and Students Industry	Fab Lab BCN members.	To engage the members of the Fab Lab BCN as co-producers.
		Ateneus Association.	To engage the members of other Fab Labs to the maker challenge.
	Poblenou ecosystem	Leka and local restaurants / markets.	To engage Leka to be a decisive partner for Poblenou circularity analysis.
		Schools.	To engage the schools and young children to participate in the maker challenge.
		Local associations.	To engage the local ecosystem in the analysis and in the challenge.
		Companies.	
		Residents.	
	Technology and Research Centres	Fab research Units	To engage different departments (Green Fab Lab; Fab Textile, Creative food Cycle project) as experts & referents in the journey.
		ICTA, Political ecology, Degrowth.	To engage researchers in analysing sustainability / conviviality of the pilot.

	Stakeholders group	Preliminary mapped organisations	Scope
Engage	Technology and Research Centres	Design schools (BAU, Elisava) and libraries (Materfad, Materiom...).	To engage designers to participate in the maker challenge.
		External researchers (RMIT, ESTIA...).	To engage researchers in analysing sustainability / conviviality of the pilot.
Disseminate	Public stakeholders	Barcelona Activa.	To create a bridge between ongoing/emerging action plans (climate / circular economy / social entrepreneurship) with the fab city agenda. To support the development of more “circular” and eco-design skills in Fab Labs. To disseminate good practices and create debating spaces about the future scenarios for circular cities and urban agricultures.
		Barcelona Ecologia and Decidim.	
		@22 and the Poblenou Urban district.	
	Scientific and research community	SISCODE partners and EU networks.	To raise awareness of the co-creation methodology as a tool to develop new models and products with circular economy practices. To disseminate the circular ecosystem co-created during the journey for uptake and replication. To disseminate cases about urban agriculture and vertical farming.
Communicate	Policy Makers, lab communities, industry, projects, civil society and other organisations working with circular economy, citizens, the media and formal and informal education		To promote the actions, values and outcomes of IAAC’s co-creation journey and SISCODE project in general.

Table 15: Matrix of Fab Lab Barcelona stakeholders and scope

Communication channels

	Reach (as of Jan 2019)	Target audience								Post Frequency*
		Policy makers	S & R community	Industry/ innovation	Education	Lab communities	NGOs	Citizens	Media / Press	
Website	(not available)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Biweekly
Mailing lists	8.000	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Monthly newsletter
Twitter	Followers: 10.000 +	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Daily (1-3)
Facebook	Followers: 12.000 +	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Daily (1-3)
LinkedIn	Followers: 1.300	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	-
Instagram	Followers: 4.800	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Daily (1-3)
YouTube	Followers: 47	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Monthly

Table 16: Fab Lab Barcelona communication channels

6.2.1.4. Action plan

Phase and Activity		Stakeholders	Objectives in terms of communication, dissemination or engagement	Barriers on reaching stakeholders	Key messages	Action	Channels					
							Website SISCODE	Website Lab	Facebook	Twitter	Mail	Other
Phase 1. Analyse Context	1.1 Circular economy context analysis (policy-education-research)	Fab Labs/Ateneus members, public stakeholders, researchers.	<u>Communicate</u> & Presentation of the project.	Availability, times.	Looking for reports & documents that support the CE context.	Clear intent statement to share. Interview/field interventions. Outcomes to share internally.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Face 2 face
	1.2 Local Ecosystem Mapping of Poblenou district	Public stakeholders, Local initiative ecosystems.	<u>Engage</u> stakeholders as to gain insights to Poblenou district ecosystem.	Identify them within the diversity. Missing, complex, sparse data.	Need to map the local flow: who are you connected with, info.	Clear intent statement. Clear visual to create the map that might be share.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
	1.3 Socio-technical analysis of Urban Agriculture (UA) systems	Internal staff and makers, Nextfood, Grow Stacks.	<u>Communicate</u> outcomes.	Distance and lack of technical expertise.	Aeroponics: What? What for? How to use? What's next?	Extract data collected to make it sexier.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	

Phase and Activity		Stakeholders	Objectives in terms of communication, dissemination or engagement	Barriers on reaching stakeholders	Key messages	Action	Channels					
							Website SISCODE	Website Lab	Facebook	Twitter	Mail	Other
Phase 1. Analyse Context	1.1+1.2+1.3 Outcome of phase 1	Researchers, Public stakeholders.	<u>Disseminate</u> the outcomes of Activity 1.3.	Access to key players.	Understand-Ideate-Prototype: Shaping science, innovation and technology together. Better understand UA systems.	Present clearly and concisely the finding of activity 1.3. Map and direct contact key players.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Direct Contact
	2.1 Recruitment	All stakeholders.	<u>Engagement.</u>	Multiple engagement, availability, proximity, languages.	Knowledge experience. Find your way to engage.	Strategy of recruitment – Open Call. Visuals. Preparing 2.2.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
Phase 2. Reframe	2.2 Raising and exchanging knowledge	All and specific stakeholders.	<u>Engaging</u> people & <u>Disseminating</u> outcomes. Convince stakeholders.	Multiple engagement, availability, proximity, languages.	Knowledge experience. Find your way to engage.	Program to design. Design of canvases. “capturing the day”. Custom the outcomes.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	

Phase and Activity		Stakeholders	Objectives in terms of communication, dissemination or engagement	Barriers on reaching stakeholders	Key messages	Action	Channels					
							Website SISCODE	Website Lab	Facebook	Twitter	Mail	Other
Phase 2. Reframe	2.3 Framing Opportunities	Strategic stakeholders.	Internal <u>communication</u> & <u>engagement</u> .	Long term engagement with strategic stakeholders.	Invitation to regular meetings and discussions.	Direct communication to assure participation of key stakeholders in activity. Anticipating the preparation of a communication strategy for 3.1.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	3.1 Maker challenge	All and specific stakeholders.	<u>Engagement</u> <u>Dissemination</u> .	Reach and availability (interest) in engaging. Not enough contacts to disseminate to.	Live experiences, be creative and come up with a new innovative solution.	Keep updates on the process / team / projects. Make a global synthesis/ map.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	

Phase and Activity		Stakeholders	Objectives in terms of communication, dissemination or engagement	Barriers on reaching stakeholders	Key messages	Action	Channels					
							Website SISCODE	Website Lab	Facebook	Twitter	Mail	Other
Phase 3. Envision	3.2 Refining and selecting concepts	Strategic Stakeholder board.	<u>Communication.</u>	Lack of broad and varied contact list to communicate the concepts (and thus the journey) to large audience.	Towards more circularity for local manufacturing: a pilot to gather new practices in fab labs, maker and design communities.	Communicating the final version of the selected project.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
	3.3 Planning the next steps	Strategic Stakeholder board.	<u>Engagement.</u>	Fall out of strategic stakeholders engaged in Phases 1 & 2.	Come to make the future urban agriculture/vertical farming systems more circular.	Internal statements.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Phase 4. Develop and Prototype	4.1 Loops of implementation	Strategic Stakeholders.	<u>Dissemination.</u>	Lack of contact and access to key players who could potentially uptake the knowledge produced.		Feed the storyline of the project.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	GIT

Phase and Activity		Stakeholders	Objectives in terms of communication, dissemination or engagement	Barriers on reaching stakeholders	Key messages	Action	Channels					
							Website SISCODE	Website Lab	Facebook	Twitter	Mail	Other
Phase 4. Develop and Prototype	4.2 Open Source Documentations	Strategic Stakeholders.	<u>Dissemination.</u>			Update the open source knowledge on adapted platforms	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	GIT
	4.3 Assessment and testing (user, scale)	Strategic Stakeholders.	<u>Engagement</u> of key stakeholders in for the assessment and testing of outcomes.	Fall out.	“the journey” “the solution”.	Published the result of assessment	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	4.4 Dissemination	All stakeholders.	<u>Dissemination & communication.</u>	Agenda and application to design events. Lack of access to wide audiences.	“the journey” “the solution”.	Inform on events	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	x

Table 17: Fab Lab Barcelona action plan

6.2.2. Polifactory

6.2.2.1. About the lab

Polifactory (polifactory.polimi.it) is a multidisciplinary research lab of Politecnico Milano developed by the departments of Design; Mechanical Engineering; and Electronics, Information and Bioengineering. Launched in 2015, Polifactory aims to explore the relationship between design and new digital manufacturing processes, promoting a new culture of making and investigating the possible future scenarios of production. Polifactory develops research and educational activities related to open and distributed production, user and independent innovation; and urban manufacturing. Finally, Polifactory supports pre-incubation of innovative ideas through its Talents in Residence programme and organizes experimental initiatives such as cultural events contributing to the growth of an advanced co-creation community.

6.2.2.2. Situation analysis

The challenge

In a nutshell, Polifactory's challenge is to **explore the potential of co-design, new production models and user innovation for the next healthcare ecosystems**. Polifactory will address its challenge with a service design approach and aims to inspire policy making and discussion with a new platform, bottom-up approaches and the engagement of patient associations as key stakeholders to change policies.

Internal and external landscape

Polifactory can rely on a large and diverse network of contacts and collaborations which has been growing since its foundation. The network and the communication landscape of Polifactory are composed by several concentric levels, which are - from the smallest to the widest - the Department of Design, the School of Design and the Politecnico di Milano University. These levels characterise both the internal and the external network composition both because Polifactory is directly related to the other levels and also because it can rely on their larger community.

Over the last three years, Polifactory hosted 73 design and engineering students in residence, involved about 300 designers in the various pilot projects, workshops, hackathons, and organized and hosted summer schools. Over 30 presentation events, lectures, meetings, and seminars were organized and hosted yearly. Polifactory developed relationships and collaborations with more than 100 companies (from SMEs to global firms like Sanofi Genzyme and Vodafone), universities, and organisations like design associations

and museums (e.g. ADI, and Triennale di Milano) and entrepreneurial associations (e.g. Confartigianato that represents SMEs).

As the relationship with public bodies and policy makers is specifically concerned, Polifactory is part of the Milanese circuit of collaborative spaces (more than 100 co-working and 10 makerspaces) and is involved in cultural and scientific initiatives organised by the **Municipality of Milan**. In fact, one of the statements of intervention from the Municipality of Milan is “New Craft & Urban Manufacturing” (identified as strategic sectors for creating new jobs, regenerating suburbs and promoting social cohesion) and implementing the policy programme “Manifattura Milano”. Polifactory co-designed and participated in networking initiatives like Manifattura Milano Camp and Manifatture Aperte Milano⁸. These initiatives aim to involve all the stakeholders interested in developing an urban manufacturing ecosystem in Milan.

Regione Lombardia is another Public body to which Polifactory is already connected. The project Next Design Innovation⁹ was developed by Regione Lombardia in collaboration with the Design Department and under the coordination of Polifactory. The project was aimed at promoting the pre-incubation of young talents able to materialize product-service innovative systems that combine design and digital technologies, experimenting with new manufacturing processes.

As the **international network** is concerned, Polifactory is part of Fab Labs.io global network, is member of Fab City Collective and is platform member of Distributed Design Market Platform (DDMP¹⁰), a Creative Europe project that stimulate designers, makers and independent innovators to promote and distribute open source products that can be materialized in European FabLabs. In this project, Polifactory collaborates with international fab labs such as FabLab Barcelona and FabLab Amsterdam.

Further, Polifactory team has carried out several research experiences both in **health**, **manufacturing** and **policy-making** areas in an RRI perspective. For example:

- FABCARE (Coordinated by IAAC; in collaboration with Centro Medico Santagostino) was an experimental initiative created to stimulate designers, makers and independent innovators to design open source products for

⁸ <http://manifattura.milano.it>

⁹ <http://nextdesigninnovation.it>

¹⁰ <http://distributeddesign.eu>

healthcare that can be distributed through digital platforms and materialized in fab labs.

- MAKETOCARE (*maketocare.it*, Coordinated by Polifactory; promoted by Fondazione Politecnico and Sanofi Genzyme) was aimed to identify, map and represent an emerging ecosystem of patient innovators, independent researchers, research institutions, med-tech entrepreneurs, makers, fab labs and workshops for digital production that work for the development of concrete design solutions capable of improving the everyday life and health of persons living in situations of disability.
- Lastly, Mi-GENERATION LAB (*migeneration.it*, Coordinated the Municipality of Milan, in collaboration with 18 partners) was a set of free educational paths mainly centred on new technologies, finalised on the development of new skills and on the production of entrepreneurial ideas in innovative areas. The project was dedicated to over 200 young and senior students from 18 to 35 years old, precarious or unemployed, with residence in Milan.

In SISCODE project, Polifactory wants to improve and deepen the connection and cross-pollination among these three topics of interest (health, manufacturing, and policy-making), facilitating the implementation and the extension of processes of co-creation also in the policy-making sector.

In the last three years, Polifactory has designed and implemented two communication tools: the website (*polifactory.polimi.it*) and the Facebook page. A new release of the website is going to be published in the following months; while the Facebook page is reaching the goal of 3.000 followers, the first among the social community of Politecnico di Milano. In addition, Polifactory has also had important media coverage; indeed, its activities were reported on the major national TV channels, newspapers and magazines, such as: *Corriere della Sera*, *Sole24ore*, *Repubblica*, *SkyTg24*, *TgRai* and *La7*, *Popular Science*, *Wired*, *Domus*, and *Interni*.

Potential risks or barriers and responses

Risks/Barriers	Responses
A preliminary consideration is the scale of the co-creation pilot. In Italy, healthcare policy system and service sector are mainly structured at the regional level. Lombardy is one the most populated European regions and has one the most advanced healthcare system in Italy and Europe. The interaction with regional policy makers requires time and effort but is feasible. However, the interaction with national policy makers is harder and needs more time (also taking into account the instability of the national policy system).	Focus will be given to engagement with regional policy makers, rebuilding and re – establishing connections within the Regione di Lombardia, with whom Polifactory has previously collaborated.
Risk of slow reaction from the stakeholders (patients associations, public bodies, and policy makers) that Polifactory would like to involve, due to organisational and bureaucratic processes that might take some time.	Invest in strong dissemination tools and the existing network to facilitate engagement.
The availability of time that these stakeholders can dedicate to the project can be limited and unstable.	Strong efforts will be made in clarifying and promoting the benefits of being involved in the co-creation journey and potentialities of outcomes.
Patient innovators, patient associations, and healthcare operators need to be well informed, effectively engaged, and actively supported in the co-creation process because together with policy makers they are key actors within the pilot.	Polifactory will stress openness in order to involve these above mentioned categories of actors who might be distant from the design field, making, and co-creation culture.
Difficulty in engaging designers because of two main typologies of problems: First of all, the specificity and the complexity of the design focus; Secondly, the richness of calls and opportunities available in the Milanese area.	To mitigate this risk, Polifactory will pay special care in promoting & designing the challenge of the pilot in a very catchy way, specifically directed to an enlarged and multi-disciplinary creative community (designers, architects, engineers, artists, makers, hackers, independent innovators) who have a real interest in healthcare design.

Table 18: Risks and barriers for Polifactory communication, dissemination and engagement

6.2.2.3. Strategy

Key messages

- Join Polifactory: Be part of the solution to health care
- Shaping the future of healthcare together
- Co-creation for a sustainable and inclusive health care
- Shifting paradigms: Co-creating science, technology and innovation with society
- Future-proofing our societies: Shaping policies together
- Rethinking healthcare together
- Co-creation for better healthcare

Stakeholders and scope

	Stakeholders group	Preliminary mapped organisations	Scope
Engage	Policy Makers	Local policy makers (Regione Lombardia and Municipality of Milan).	To engage representatives from Municipality of Milan and Regione Lombardia in all phases of co-creation journey.
		Regional Chamber of Commerce.	To explore the opportunity to connect SISCODE with policies that stimulate new entrepreneurship in healthcare.
	Lab Communities	Involvement of junior and senior designers, local fab labs.	To actively engage the lab community in phases 1 to 4 in the co-creation journeys.
	Industry and Innovation	Digital Manufacturing companies (e.g WASP).	To engage relevant industry in all phases of co-creation journey, as strategy stakeholders and providers.
		Med-tech companies.	
		Pharma-Healthcare companies (e.g. Sanofi/Humanitas/San Raffaele).	
		Innovation Hubs.	
		Social Enterprises.	
	Civil Society/NGOs	Caregivers Association.	To actively engage at least one caregiver association and on patient association in the in all phases of co-creation journey.
		Patient Associations.	

	Stakeholders group	Preliminary mapped organisations	Scope
Engage	Scientific and research community	Hospitals (e.g. Humanitas and S. Raffaele).	To consult research community in the field of health care.
		Pharma-Healthcare companies.	
		Academia.	To engage academia as advisors.
Disseminate	Policy Makers	National Levels.	To disseminate journey's outcomes & efficient solutions to healthcare. Uptake and scaling up of solutions, demonstrating the value of co-creation in policy making.
	Civil Society	Escalate the reach involving other patients and caregivers associations.	To disseminate final outcome, possible uptake. To demonstrate the value of co-creating solutions.
	Scientific and research community	Scale up reaching other hospitals, healthcare & pharma companies.	To uptake outcome and promote the value of involving final users in co-creating solutions.
		Academia.	To raise awareness of RRI and develop co-creation approaches in S&T as part of scientists formal and informal education.
Communicate	Patient Innovators, policy makers, scientific and research community, industry/ innovation, education communities, lab communities, NGOs, Citizens, press and media representatives, local authorities.		To promote the actions, values & outcomes of Polifactory's co-creation journey and SISCODE project in general.

Table 19: Matrix of Polifactory stakeholders and scope

Communication channels

	Reach (as of Jan 2019)	Target audience								Post Frequency
		Policy makers	S & R community	Industry/ innovation	Education communities	Lab	NGOs	Citizens	Media / Press	
Website	Unique Visitors: 841 browsing sessions: 1.044	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1 / 2 weeks
Mailing lists	n.a.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Connected to specific events
Twitter	Followers: 74	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	1 / 2 weeks
Facebook	Followers: 2.994	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Between 2-3 / week

Table 20: Polifactory communication channels

Phase and Activity		Stakeholders	Objectives in terms of communication, dissemination or engagement	Barriers on reaching stakeholders	Key messages	Action	Channels					
							Website SISCODE	Website Lab	Facebook	Twitter	Mail	Other
Phase 1. Analyse Context	Introduce the co-creation journey to key stakeholders (Setting up the engagement process with communities & stakeholders)	All and specific stakeholders.	<u>Disseminate/Communicate</u> the co-creation journey with the aim raise awareness of the project and seed the future uptakes.	Knowledge of key stakeholders and lack of wiliness to engage.	Rethinking healthcare together. Co-creation for better healthcare. Join Polifactory: Be part of the solution to healthcare. Shaping together the future of healthcare. Co-creation for a sustainable and inclusive healthcare.	After mapping interesting stakeholders/orga nisations, author and distribute a press release / communication document with general introduction to the journey.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Distribute it via mailing list

Table 21: Polifactory action plan

6.2.3. Underbroen

6.2.3.1. About the lab

Underbroen is a membership-based makerspace and urban innovation laboratory for local, sustainable and digital production in Copenhagen. Underbroen was co-founded by the non-profit association Maker and BetaLab with the core objective to support maker communities and fab lab activities, and to promote design methodologies and collaborative tools and practices to a broader audience. Underbroen works to build and secure cross-sectorial collaboration platforms and a strong network of makers, private companies, policy makers, and the public sphere in Denmark and the Northern countries through strategic and cross-sectorial collaboration and hands-on projects with various partners. Underbroen currently counts 38 active members with expertise in various fields (i.e. industrial design, software engineering, interaction design, etc.). Apart from Underbroen, Maker organizes the annual Maker Faire ‘Copenhagen Maker Faire’ where a diverse audience has the chance to meet the Danish and international maker community.

6.2.3.2. Situation analysis

The challenge

Underbroen’s challenge is to **exploit how to co-create better and more liveable cities through circular production and digital prototyping in Copenhagen**. The current lack of proper legislation, ecosystems and business models supporting makers and micro entrepreneurs hinder the development of a landscape that can foster circular economies. During its co-creation-journey, Underbroen will experiment and co-create new circular ecosystems and services (or products) around selected recycled fractions of material.

Internal and external landscape

Underbroen reach and collaborate with a vast and diverse group of peers in Copenhagen and Europe. Working with the challenge to develop and prototype an ecosystem and supply chain of stakeholders around recycling, processing and (re-)using waste material fractions, we have currently identified and conceptualized the following main stakeholder groups to be actively engaged in both co-designing and co-producing the system, around function in the system in the local innovation landscape around the Co-creation challenge:

Generators: stakeholders that produce excess waste fractions and could potentially benefit from developing its business model to offer this as a valuable resource. This group counts the city’s recycling centres (that are run in a partnership between the Dep. of Technology and Environment and the private company ARC in Copenhagen), SMEs and industry in the

field of hardware manufacturing and product afterlife handling services, and of course the cluster of makerspaces, fab labs and collaborative workshop spaces in Copenhagen.

Recyclers: stakeholders that already have, or have the potential resources and capacity (technological, infrastructural, organisational) to process the waste fractions into new products ready for use in the further process. This group counts start-ups, SMEs and potentially the group of makerspace actors.

Producers: stakeholders with a demand for sustainable materials and will be the consumers of said materials, or stakeholders who could potentially benefit business-wise from using sustainable materials. This group counts small scale designers/makers and manufacturers. This group plays an important role in the project, since they are the “guinea pigs” of the produced goods, and those who will test and evaluate the quality and usefulness in their existing design and manufacturing portfolios and practices. This group counts both small scale designers/manufacturers, i.e. working ads both designers and manufacturers of their own products, but also stakeholders working in one of the two roles, either in product design or offering manufacturing services. This function also serves to produce goods from the service and as a KPI for impact – something than can be used for validation and improvement, but also as promotion of the actual products that come out of the journey.

Resellers: SMEs that resell, or could potentially benefit commercially, from reselling niche designer goods in Copenhagen. Some of the designers/makers in Underbroen’s network already have this kind of arrangement with small physical and online shops in Copenhagen. Some manage their own commercial platforms. This is an important KPI of the system impact and health, and means promotional and branding activities.

End-buyers: finally, to end the value chain, we identify a group of citizens as end-users and buyers of the produced, circular and responsible goods in the output end of the system. This group counts citizens already conscious about the circular and sustainability agendas.

Finally, two stakeholder groups remain: *system experts* and of course *policy makers*. Underbroen is going to consult experts in understanding the general and local innovation landscape (i.e. from technology, resources, infrastructure to systems design) and to derive best practices from the global innovation field around circular systems. The *policy and decision makers* play an important role in facilitating access to the recycling centre administrator (ARC), as subject matter experts on data, existing policy and potential

opportunities when understanding and reframing the problem, as well as gatekeepers and facilitators in the implementation and prototyping of the developed systems.

Besides Danish and international makerspaces and fab labs, Underbroen has collaborated with the Danish Technological Institute (a government run R&D institute for business, industry and private citizens specialized in fields like material innovation, production, business and science) and network organisations with large networks in the fields of urban development, design, tech (e.g. Bloxhub, MADE, Danish Industry, Danish Architecture Centre). With regards to Policy Makers, Underbroen has the potential to reach officers and decision-makers in the different departments including the Dep. of Culture and Leisure and Dep. of Technology and Environment in the City of Copenhagen. Maker has had a good relationship and collaboration with both departments since the opening of Underbroen. We are currently active in another EU project (CIRcuit) coordinated by the Dep. of Technology and Environment on regenerative urban development, and are working on building good relations to the newly elected Mayor of Culture and Leisure in Copenhagen. Also, represented in Maker's Board of Directors are influencers on senior and executive level from the Dep. of Culture and Leisure, Danish Design Centre, MADE (Manufacturing Academy of Denmark).

Experienced with various topics (Fab City Agenda, Urban development, Micro entrepreneurs, Open Innovation, Design Thinking and Prototyping, etc.), Underbroen also has a vast knowledge in different public engagement formats, including workshops, network and knowledge events and facilitated development and co-creation processes.

Working with the development of circular economies in Copenhagen, Underbroen's journey can benefit from an already well-functioning waste sorting system in Copenhagen, both as system per say and as a culture, since Copenhagen's citizens have demonstrated good practices and interest in waste recycling and sustainable management. This allows for potentially well sorted and high quality resources from waste materials, and therefore better source material and systems for prototyping. The City of Copenhagen has also been working actively, on a policy level, on reducing the amount and sorting of waste, among others with the recently closed co-creation project 'Guldminen' where makers and creatives were given access to the material fractions at the recycling station to develop products, services and business models. Following these results, The City of Copenhagen will open a new recycling centre – "Recycling Centre Sydhavnen" – in the spring 2019 where they will work on promoting sorting among the centre's users (citizens and commercial users/SMEs)

as well as experiment on new ways and processes for recycling and reusing waste fractions in collaboration with local entrepreneurs, designers and makers. At the same time, Denmark has a proud history of cooperatives, which is a social and cultural mentality that potentially can support and develop a circular productive agenda/model.

The circular economy and fab city principles (i.e. reuse, reduce, recycle) are already present and broadly supported in Denmark at large, and especially in Copenhagen. All domestic residents in Copenhagen are currently recycling 5-6 fractions on their premises (plastic, metal, cardboard, paper, organic waste, and some larger pieces of furniture), and it is something that is generally actively supported. The City of Copenhagen is promoting sorting by campaigns on billboards and on the actual recycling trucks, as well as consciously developing a way-finding system at the recycling stations to make it easier for people to navigate the fractions and sorting principles. Underbroen experiences this themselves when facilitating a citizen-driven hackathon for the City of Copenhagen on prototyping design solutions around an organic waste basket that was introduced to citizens in 2017. The City of Copenhagen is actively working on a strategic and policy level. In their ‘Resource and waste management plan’, the Dep. Of Technology and Environment set out a goal to reduce the amount of waste that is incinerated by 20% and to increase the amount of waste that is reused (recycled, reused, etc.) by 45% in 2018, as part of the City’s vision of evolving into a “City without waste” by 2050. The goals from the before mentioned plan indicate that the policy and decision makers in Copenhagen are clearly ready to engage and invest in an initiative such as Underbroen’s co-creation challenge, with one of four main goals to better waste treatment, with a self-appointed flagship of reducing and reusing plastics. Especially, since the key efforts will be on getting more commercial residents (i.e. SMEs, constructions industry, etc.) to recycle more. The City of Copenhagen is also working actively to support and secure growth in the creative sector, including the maker/designer field.

Environmental organisations such as Plastic Change have been gaining attention, especially among private citizen, but also among SME/industry cooperation and organisations. Combined with the political attention, we are confident that there are many SMEs and commercial operators motivated by the idea of becoming more circular, as the grave consequences of not reducing our negative impact on the planet has become quite clear, generally agreed upon and supported over the past years.

It is always a challenge to catch the attention of the media, and the circular economy and sustainability agenda is not too visible in the broad media landscape (i.e. the bigger public service media networks). However, the challenges of climate change, and the following need for societal change, has been covered on/off by the bigger Danish newspapers, as well as smaller independent online newspapers that are especially read by the supporters of green and circular initiatives.

Potential risks or barriers and responses

Risks/Barriers	Responses
It is difficult to engage and on-board Lab community.	<u>Lab will:</u> finance (some or all) time spent on co-production tasks regarding development and prototyping. Do open calls. Make the different co-producer roles clear (i.e. taking part as generator, recycler, producer), and make it optional to be active in one or more (aligning the scope to their resources).
It is difficult to engage and on-board Start-Ups and SMEs.	<u>Lab will:</u> facilitate maker meet-ups and network events. Partner up with gatekeepers to reach and convince (they communicate the project), like Bloxhub, Danish Engineers Association, Danish Architecture Centre, etc. Partner up with said gatekeepers for match-making and contact.
It is difficult to engage and on-board Industry players.	<u>Lab will:</u> Partner up with gatekeepers to reach and convince (they communicate the project, co-hosting events), MADE, DI. Partner up with said gatekeepers for match-making and contact.
It is difficult to engage and on board Resellers.	Use developed goods as vehicles for demonstrating value. Go through existing relations between makers/designers and their resellers as the initial break through.
It is difficult to reach Subject Matter Experts.	Offer commercial compensation for time spent. Creating ownership through an advisory board, co-writers/producers of intent statements. Frame inquiry tapping into their agendas. Offer to share results and journey.
It is difficult to reach and engage policy makers (officers).	Creating ownership through an advisory board, co-writers/producers of intent statements. Frame inquiry tapping into their

Risks/Barriers	Responses
	agendas. Offer to share results and journey.
It is difficult to reach and engage policy makers (decision makers).	A dedicated communication strategy and plan on how to keep policy makers informed and involved throughout the project (reaching from press releases, one-pagers, to 1-to-1 meetings).
Project partners leave the project.	Underbroen will make sure to engage more partners (where possible) for prototyping than needed for the success of the project throughout (also as a dissemination and exploration activity), so that if one or more leave the project, we can engage new ones.

Table 22: Risks and barriers for Underbroen communication, dissemination and engagement

6.2.3.3. Strategy

Key messages

- Future proofing our societies: Shaping policies together.
- Ready to co-create?
- Do it! Science, Technology and Innovation by all!
- Co-creating future cities with careful consideration and the harmonization of the needs of the people, nature and the economy.
- We all have the right to live well, be healthy, successful and happy.
- A better Copenhagen for all of us.
- Co-creation as a solution to the cities' everyday problems.
- A better city requires cooperation between everyone: including you!
- There is no future for business in societies, in which natural resources are indiscriminately used.
- Innovations, technological development and sustainable business operations are the foundations for future societies.
- Your commitment, experience and knowledge are precious resources for the reimagining the future of our city!

Stakeholders and scope

	Stakeholders group	Preliminary mapped organisations	Scope
Engage	Lab Community: Makerspaces Fablabs Collaborative workshops	Underbroen community.	To engage labs' own community in co-designing and developing the prototype.
		Vallekilde Højskole (designers/makers).	To engage producers to evaluate evaluate recycled materials + produce goods (outcomes).
		Fablab Nordvest (designers/makers).	To engage producers in the testing and evaluation of recycled materials and produce goods, and to potentially engage them as providers (access to facilities to develop and prototype processing services).
		BetaLab & BetaFactory.	To engage Beta Lab and BetaFactory as to gain access to waste fractions, and to engage them on the testing and evaluation of recycled materials and produce good).
		Fab Lab RUC.	To engage producers in the testing and evaluation of recycled materials and produce goods, and to potentially engage them as providers (access to facilities to develop and prototype processing services).
		"Roberto" Material Lab.	To engage stakeholders as providers (access to facilities to develop and prototype processing services) and to co-design and develop the prototype.
	Start-ups and SMEs	Von Plast.	To engage stakeholders as providers (access to facilities to develop and prototype processing services) and to co-design and develop the prototype.
	Start-ups and SMEs	MatKon.	To engage stakeholders as providers (access to waste fractions) and to co-design and develop the prototype.

	Stakeholders group	Preliminary mapped organisations	Scope
Engage	Start-ups and SMEs	Makershirt.	To engage stakeholders as providers (access to waste fractions) and to co-design and develop the prototype, to test and evaluate materials and produce goods. To engage stakeholders as to gain access to their network and ecosystem for textiles.
		BloxHub Community (hub for sustainable urbanization).	To engage stakeholder as mediators between project and their members (Start-Ups and SMEs in design/construction)
	Industry	Zyxel (MatKon customer).	To potentially engage stakeholder as co-producer.
		ARC (City of CPH Recycling solution partner).	To engage stakeholders as providers (access to waste fractions) and to gain access to data and knowledge on management, processing material fractions
		<i>MADE - Manufacturing Academy of Denmark.</i>	To engage stakeholder as mediators between project and their members (<i>Industry</i>)
	Subject matter experts	Fablab TI.	To engage stakeholder as to access to data, knowledge, best practice and solutions
		MakeWorks (EU project).	To engage stakeholder as access to data, knowledge, best practice and solutions from the project
		Dep. of Tech and Environment, City of Cph (project officers).	To engage stakeholder as access to data, knowledge, existing and previous projects and their results
		Danish Technical University.	To engage stakeholder as access to data, knowledge, best practice and solutions
	Policy Makers	Dep. of Tech and Environment, City of Copenhagen (project officers).	To engage stakeholder for understanding of existing policies and the co-creation of and future policy, strategies and initiatives.

	Stakeholders group	Preliminary mapped organisations	Scope
Engage	Policy Makers	Councillors (elected citizen representatives).	To engage stakeholder on co-designing potential policy solutions and support. To engage stakeholders as ambassadors in the departments and City representative
		Confederation of Danish Industry (DI).	To engage stakeholders as ambassadors and facilitators between project and their members (large industry)
		Plastic Change.	To access to data, knowledge, existing and previous projects, policy initiatives and their results To engage stakeholder as project ambassadors
Disseminate	Lab community, Start-Up/SME	Underbroen, Vallekilde Højskole (and potentially more from Underbroen's network in the Lab community).	Disseminate the project and showcase results through hands-on events.
	Resellers		Disseminate the project outcomes through reselling products and promote agenda.
	Policy Makers and elected	Municipality of Copenhagen, Dep. of Tech/Environment and Dep. of Culture/Leisure.	To disseminate the fab city agenda and circular models of production, for the development of agile legislation fertile ecosystems with the project as a vehicle and example.
	Industry	MADE, DI.	To disseminate results and promote circular production models. To diffuse a culture of co-creation and cross-sectoral collaboration.

	Stakeholders group	Preliminary mapped organisations	Scope
Disseminate	Civil Society/NGOs	Associations involved with waste management and circular economy.	To disseminate co-creation methodology as a tool to develop new models and products with circular economy practices. To disseminate the circular ecosystem co-created during journey for uptake and replication.
	Scientific and research community	Researchers and experts in the field.	To disseminate and further develop co-creation and circular economy approaches in research and innovation.
Communicate	Policy makers, lab communities, industry, projects, civil society and other organisations working with circular economy, citizens, the media, and formal and informal education communities.		To promote the actions, values & outcomes of Underbroen's co-creation journey and SISCODE project in general.

Table 23: Matrix of Underbroen stakeholders and scope

Communication channels

	Reach (as of Dec 2018)	Target audience								Post Frequency
		Policy makers	S & R community	Industry/ innovation	Education communities	Lab communities	NGOs	Citizens	Media / Press	
Website	Unique visitors: 15.000 Visits: 17.400 Page views: 32.200	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	1-3 / wk (the amount going up as results start to happen)
Press Releases & Newsletters	Newsletter signup not started yet.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Press release: with every intent statement (one per phase) + when notable results happen Newsletters: monthly
Twitter	Followers: 215	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	1-3 / wk (the amount going up as results start to happen)
Facebook	Followers: 1.735	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	1-3 / wk (the amount going up as results start to happen)
LinkedIn	N.A	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1-2 / month
Instagram	Followers: 584	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	1-3 / wk (the amount going up as results start to happen)

Table 24: Underbroen communication channels

6.2.3.4. Action plan

Phase and Activity		Stakeholders	Objectives in terms of communication, dissemination or engagement	Barriers on reaching stakeholders	Key messages	Action	Channels									
							Website SISCODE	Website Lab	Facebook	Twitter	LinkedIn	Instagram	WikiFactory	Mailing List	Direct Email	Other
Phase 1. Analyse Context	1.1 Mapping of technologies and relevant systems	Subject matter experts, policy makers (Dep. Of Tech and Environment), lab community Start-ups & SMEs.	<u>Engage</u> practitioners in Phase 1 as to gain knowledge, inspirations, and understanding of needs.	Lack of stakeholders to draw from lab’s existing networks. Lack of availability (time and interest) and interest in take contributing to the research.	Your commitment, experience and knowledge are precious resources for the reimagining the future of our city!	Review existing literature to map interesting researchers to contact. Map “blank spots” in necessary contacts. Direct contact to stakeholders inviting them to contribute to research. Follow up calls & personal meeting.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Other strategies for contacting: calls, referrals, etc.
	1.2 Mapping of best practices															

Phase and Activity		Stakeholders	Objectives in terms of communication, dissemination or engagement	Barriers on reaching stakeholders	Key messages	Action	Channels									
							Website SISCODE	Website Lab	Facebook	Twitter	LinkedIn	Instagram	WikiFactory	Mailing List	Direct Email	Other
Phase 1. Analyse Context	1.5 Begin to create & establish stakeholder relationships & engagement	Lab community, researchers, industry & policy makers.	<u>Disseminate</u> outcomes of Phase 1, including intent statement #1 and data & info visualisations.	Access or contact to key players.	Co-creation meanings creating future cities with careful consideration and the harmonization of the needs of the people, nature and the economy.	Map key players. Produce & distribute communiqué with main findings and intent. Statement #1 direct contact. Online actions.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Calls, referrals, etc.
	1.5 Begin to create & establish stakeholder relationships & engagement	All.	<u>Communicate</u> the launch of journey, highlighting challenges, values & stakeholders involved.	Access to a broad number and diverse group of individuals, including media outlets.	Co-creation as solution for the cities' everyday problems.	Author and distribute communiqué (lay language). Actions on social media Media contact.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	

Phase and Activity	Stakeholders	Objectives in terms of communication, dissemination or engagement	Barriers on reaching stakeholders	Key messages	Action	Channels									
						Website SISCODE	Website Lab	Facebook	Twitter	LinkedIn	Instagram	WikiFactory	Mailing List	Direct Email	Other
Phase 2. Reframe	2.1 Transferring knowledge (Feedback Sessions)	Stakeholders engaged in Phase 1.	Re-engage stakeholders for a 2-way information exchange (their participation in meetings and workshops).	Fall out (time, interest, relevance for stakeholders).	Your commitment, experience and knowledge are precious resources for the reimagining the future of our city!	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Personal meeting and other direct contact
	2.1 Getting feedback (Workshops)														
	2.2 Informing (Newsletters and Maker Meet ups)	Lab community.	Disseminate the co-creation journey, and engage with more members of the community.	Makers hard to engage due to lack of time / financial motivations.	Co-creation for solving the cities' everyday problems.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Personal contact at events

Phase and Activity		Stakeholders	Objectives in terms of communication, dissemination or engagement	Barriers on reaching stakeholders	Key messages	Action		Channels								
							Website SISCODE	Website Lab	Facebook	Twitter	LinkedIn	Instagram	WikiFactory	Mailing List	Direct Email	Other
Phase 2. Reframe	2.3 Recruiting and engaging stakeholders (workshops)	All strategic stakeholders.	<u>Engage</u> new individuals to actively participate in the co-creation journey.	Lack of representative s of mapped organisations. Lack of availability &/or interest.	Co- creating future cities with careful consideration and the harmonization of the needs of the people, nature and the economy.	Invest on existing contacts and collaborators. Direct contact. Authoring and distribution of communiqué. Possible one-on-one meetings if necessary. Online actions.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Personal meeting and other direct contact

Phase and Activity		Stakeholders	Objectives in terms of communication, dissemination or engagement	Barriers on reaching stakeholders	Key messages	Action	Channels								
							Website SISCODE	Website Lab	Facebook	Twitter	LinkedIn	Instagram	WikiFactory	Mailing List	Direct Email
Phase 2. Reframe	2.6 Contact Plastic Change	Representatives Plastic Change.	<u>Engage</u> : Access to data, knowledge, previous projects, policy initiatives. Create project ambassadors – potentially doing campaign.	Lack of availability &/or interest.	Your commitment, experience and knowledge are precious resources for reimagining the future of our city!	Invest in existing connections, reinforcing the relevance of their involvement and how their participation can benefit their own work.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	One-on-one meetings

Phase and Activity		Stakeholders	Objectives in terms of communication, dissemination or engagement	Barriers on reaching stakeholders	Key messages	Action	Channels									
							Website SISCODE	Website Lab	Facebook	Twitter	LinkedIn	Instagram	WikiFactory	Mailing List	Direct Email	Other
Phase 2. Reframe	2.7 Establishing an advisory board (AB) for the project	Representatives from: makers community, the Technical Environmental dep., MADE, MatKon, Von Plast & BloxHub.	<u>Engage</u> key individuals as to assure their participation in the AB.	Lack of availability &/or interest.	Your commitment, experience and knowledge are precious resources for the reimagining the future of our city!	Invest in existing connections, reinforcing the relevance of their involvement and how their participation can benefit their own work	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	One-on-one meetings	
	End of Phase 2	Lab Community, Researchers, Industry & Policy Makers.	<u>Disseminate</u> outcomes of Phase 2, including intent statement #2 and descriptive value web.	Access or contact to key players.	Co- creating future cities with careful consideration and the harmonization of the needs of the people, nature and the economy.	Map key players. Produce & distribute communiqué with Intent Statement #2. Direct contact. Online actions.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Calls, referrals, etc.

Phase and Activity	Stakeholders	Objectives in terms of communication, dissemination or engagement	Barriers on reaching stakeholders	Key messages	Action	Channels									
						Website SISCODE	Website Lab	Facebook	Twitter	LinkedIn	Instagram	WikiFactory	Mailing List	Direct Email	Other
Phase 2. Reframe	End of Phase 2	All.	<u>Communicate</u> : continue narrative of journey, highlighting reframed challenge, values, & new stakeholders involved.	Access to a broad number and diverse group of individuals, including media outlets.	Co-creation as solution for the cities' everyday problems.	Author and distribute communiqué (lay language). Actions on social media. Media contact.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	

Phase and Activity		Stakeholders	Objectives in terms of communication, dissemination or engagement	Barriers on reaching stakeholders	Key messages	Action		Channels									
							Website SISCODE	Website Lab	Facebook	Twitter	LinkedIn	Instagram	WikiFactory	Mailing List	Direct Email	Other	
Phase 3. Envision	3.1 Ideation	Makers Community, designers (within Underbroen members and community), co-producing stakeholders from the identified stakeholder landscape: companies.	<u>Engage</u> stakeholders as for the active and intense participation in the co-creation journey, including in hackathons, match-making sections & prototyping. Blue print.	Lack of availability &/or interest.	Your commitment, experience and knowledge are precious resources for the reimagining the future of our city!	Invest in existing connections, reinforcing the relevance of their involvement and how their participation can benefit their own work.											
	3.2 Refine concepts						<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		
	3.3 Selection of ideas																
							Direct contacts: calls, one-on-one meetings, etc.										

Phase and Activity		Stakeholders	Objectives in terms of communication, dissemination or engagement	Barriers on reaching stakeholders	Key messages	Action		Channels								
							Website SISCODE	Website Lab	Facebook	Twitter	LinkedIn	Instagram	WikiFactory	Mailing List	Direct Email	Other
Phase 3. Envision	End of Phase 3	Lab Community, researchers, industry & policy Makers.	<u>Disseminate</u> outcomes of Phase 3: Values, concept system & key performance indicators.	Access or contact to key players.	Co- creating future cities with careful consideration and the harmonization of the needs of the people, nature and the economy.	Map key players. Produce & distribute communiqué with findings, focusing on information that could be applied to other chains. Direct contact. Online actions.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Calls, referrals, etc.

Phase and Activity		Stakeholders	Objectives in terms of communication, dissemination or engagement	Barriers on reaching stakeholders	Key messages	Action	Channels									
							Website SISCODE	Website Lab	Facebook	Twitter	LinkedIn	Instagram	WikiFactory	Mailing List	Direct Email	Other
Phase 3. Envision	End of Phase 3	All.	<u>Communicate</u> : Continue narrative of journey, highlighting implementation plan and possible outcomes: “Imagine all the possibilities”.	Access to a broad number and diverse group of individuals, including media outlets.	Co-creation as solution for the cities’ everyday problems.	Author and distribute communiqué (lay language). Actions on social media. Media contact.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
	4.1 Implement 1st iteration of co-creation journey 4.3 Testing (access)	Makers & designers (members and community), engaged companies, NGOs and other stakeholders (MatKon, Von Plast, etc.).	<u>Engage</u> stakeholders in the implementation of plan designed in Phase 3.	Lack of availability &/or interest.	Your commitment, experience and knowledge are precious resources for the reimagining the future of our city!	Invest in existing connections, reinforcing the relevance of their involvement and how their participation can benefit their own work.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Direct contacts: calls, one-on-one meetings, etc.

Phase and Activity		Stakeholders	Objectives in terms of communication, dissemination or engagement	Barriers on reaching stakeholders	Key messages	Action		Channels								
							Website SISCODE	Website Lab	Facebook	Twitter	LinkedIn	Instagram	WikiFactory	Mailing List	Direct Email	Other
Phase 4. Develop and Prototype	4.2 Disseminate & Communicate	All.	<u>Communicate</u> the journey and outcomes to broad number of stakeholders, investing in end users.	Access to a broad number and diverse group of individuals, including media outlets.	Co-creation as solution for the cities' everyday problems.	Author and distribute communiqué (lay language). Actions on social media. Media contact. Presentation in public events.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	

Table 25: Underbroen action plan

6.3. Science Centres and Museums

6.3.1. Cube

6.3.1.1. *About the lab*

Continium and Cube are part of Stichting Museumplein Limburg, a foundation in Kerkrade (The Netherlands) that also includes Columbus Earth Centre. Together these three venues tell the story of Earth, sustainability, science and technology, and design in the context of mankind, industry and education. **Cube** is a museum about design and development aimed at an international public that is interested in the process of design and design for human needs and ambitions. Within Cube's design labs, students are encouraged and enabled to approach the process of design not in a solo manner, but based on an analysis of needs, possible materials or technologies, production possibilities, and market opportunities. In this way, Cube approaches the design process through a chain concept of market demand, innovation, and knowledge transfer. In the design labs visitors are encouraged to participate in the co-creation process as end users.

6.3.1.2. *Situation analysis*

The challenge

Meaningful social interactions are a common need of all individuals, but with age come limitations in terms of mobility, income, and healthcare to name a few. Cube's challenge is **to tackle the trials of aging, especially loneliness, through co-creation**. With a growing number of elderly persons living more independently there is a need for so-called 'lifetime proof' environments. Furthermore, society has become more individualist and living alone means that people who are less mobile or have less social capabilities have a bigger chance of suffering from loneliness. Through its co-creation journey, Cube will investigate ways of increasing the quality of life of people living and growing up in an ageing society and more specifically, fight loneliness through an approach which brings together people from different ages, cultural backgrounds, socioeconomic status, walks of life, and more.

Internal and external landscape

Cube Design Labs work together with a team of experienced coaches in the fields of design thinking, research, graphic design and product design. It has also built (and keeps on building) a network of professionals, researchers, and local/regional policy makers to continuously strengthen its knowledge base and regional anchoring.

Continium and Cube have an extensive experience in the management of complex projects, in particular developing and designing new venues/museums, and creating (travelling-) exhibitions around topics such as science, design, innovation and sustainability. This includes developing activities and events in which visitor participation is the central aim. More specifically, Cube Design Labs have more than three years of experience in developing and coordinating design challenges that address human needs and ambitions and in which co-creation with museum visitors and other stakeholders takes centre stage.

As part of Stichting Museumplein Limburg network, Cube, together with Continium Discovery Centre and Columbus Earth Experience, consolidate a solid knowledge in engagement activities, i.e. hackathons, design challenges, co-creation sessions, etc. Depending on the topics, goals, expected outcomes, leading organisation, and target groups, the activities are chosen and ran by experienced teams who continuously exchange expertise and experiences.

Cube has a dedicated communication team with staff members specialized in online and offline communications. For the SISCODE project, Cube has assigned a team of senior communicators who participated in the SISCODE co-creation journey workshops and are aware of the structure of the activities and topics addressed in the project. They are responsible for the communication and dissemination of processes, outcomes and results and will use Cube's regular online and offline channels to communicate with professional stakeholders, students and citizens. Cube's communication team has ample experience in communicating projects from Cube's co-creation Design Labs, and thus are highly qualified to deal with the challenges of multi-stakeholder engagement projects.

Further, students at Cube Design Labs play an active role in communicating the labs' co-creation projects. Communication students from universities within Cube's network are invited to come with new ideas for innovative communication methods, channels or products. Lastly, visitors to the Design Labs are actively informed about the project via an internal communication network of screens and an interactive video wall.

The local traditional media landscape is formed by a regional daily newspaper, local weekly newspapers, and a regional TV station. On a national level there are six to eight daily newspapers, TV stations and radio stations. Cube will also make use of engaged stakeholders as multipliers, employing their communication channels to communicate their involvement, outcomes, activities, etc.

Museumplein Limburg is located in South Limburg, an area with low scientific and cultural awareness, and low educational levels. From its heavy-industry past, the area is still transitioning to a greener leisure industry, more suitable to the knowledge economy. This setting challenges the process of stakeholder and citizen engagement when it comes to participatory and co-creation activities.

Although there has been a flourishing of projects where first experiments in co-creation are taking place, co-creation isn't really high on the agenda of local policy makers and civil servants. The need for this approach is more urgent than ever, as South Limburg has an aging society and regional and national government push for more societal participation and more self-reliance from citizens. Within the media, there is a moderate awareness of citizen participation and co-creation although they are aware of the necessity.

Potential risks or barriers and responses

Risks/Barriers	Responses
Policy makers are hard to reach and engage, as they have their own agenda. They don't see the advantage of citizens' involvement & co creation.	Cube's action will start with personal contacts and networking to convince policy makers of the importance of participating. Cube will implement a dedicated communication strategy and plan on how to keep policy makers informed and involved throughout the project (reaching from press releases, one-pagers, to 1-to-1 meetings).
Politicians who think in "election terms" and four year periods.	Cube will offer policy makers possibilities to show their concern for the wellbeing of the citizens in their city. Cube will invest in demonstrating the importance and value of bottom up approaches.
Lack of awareness of the challenge in the city.	Work with citizens' awareness on the challenge topic.
The danger of stigmatisation as target groups or citizens who may want to participate in the project can feel stigmatized for taking part in activities around aging society and loneliness.	Cube will work in dissemination and engagement actions that destigmatize the topics of the challenge.
Not enough time.	Narrow down Cube's initial question/challenge.
Researchers are not willing to participate.	Cube will invest in finding alternatives or narrow down the time researchers are expected to contribute to the project. Work with students.

Table 26: Risks and barriers for Cube communication, dissemination and engagement

6.3.1.3. Strategy

Key messages

- Be part of our co-creation journey!
- Come invent with us!
- Come meet your neighbour.
- Would you be my neighbour?
- Building better futures for ageing societies.
- Become part of your future care.
- Co-design for better work conditions (practices).
- Let's co-create our own future care.
- Connect the dots: Communities-scientists-policy makers co-creating Science Technology and Innovation.
- Shifting paradigms: Co-creating science, technology and innovation with society.
- You are an essential part of our research.
- Future-proofing our societies: shaping policies together.
- Innovation for better living.
- Thinking with society: real life experiments for policy makers.
- Understand-Ideate-Prototype: shaping the care of future societies together.

Stakeholders and scope

	Stakeholders group	Preliminary mapped organisations	Scope
Engage	Policy makers	Politicians and civil servants from the city or regional government, including Province of Limburg.	To engage policy makers in the co-creation journey as to understand local landscape and together co-design possible solutions, and for its implementation.
	Social care organisations	Organisations involved in the identification of needs, delivering mental or physical care or working on prevention programs, including local initiatives and community neighbourhood centres.	Engage organisations with knowledge of ongoing projects, of final users and the regional landscape, with the aim of gaining insight (including final users map of needs), engaging them throughout the co-creation journey.

	Stakeholders group	Preliminary mapped organisations	Scope
Engage	Policy makers	Politicians and civil servants from the city or regional government, including Province of Limburg.	To engage policy makers in the co-creation journey as to understand local landscape and together co-design possible solutions, and for its implementation.
	Citizens	Final users: local citizens affected by loneliness and other age related issues.	Closely engage with citizens throughout the all journey phases, understanding their needs, their perspectives, and their insights - co-designing and testing solutions together.
		Family & friends of lonely citizens (and other local citizens).	
	Housing organisations	Organisations that build, manage, or rent housing estates and are developing new strategies for their tenants.	By closely collaborating throughout the journey with housing organisations, Cube can gain access to citizen's needs, developments in new products and services, and local landscape. The housing organisations are in the middle of change and are aware of their responsibilities broader than only renting out living space.
	Care organisations	Organisations responsible for (mental-)health care.	Engage mental health organisations as to gain scientific and social input for the definition of the challenge and cooperation during the design process.
		Elderly homes.	Engage practitioners for their input in definition of the challenge and cooperation during the design process.
		Insurance companies & suppliers of seniors' aids & devices.	Engage insurance companies as consultants gaining the perspective of service providers.

	Stakeholders group	Preliminary mapped organisations	Scope
Engage	Scientists & Researchers	Behavioural scientists, social scientists, etc. Including NEIMED (research institute on demographic changes).	Engage with scientists and researchers in phase one of the co-creation journey, gaining access to their knowledge, and validating findings throughout the journey.
Disseminate	Policy makers	Politicians and civil servants from the city or regional government + national government.	Disseminate co-created solutions for their uptake and replication (possibly on national level). Disseminate the culture of co-creation in policy making.
	Citizens	Finals users and their support systems.	To disseminate the proposed solutions, promoting uptake and disseminating the value of citizens co-creating solutions for aging population.
	Practitioners	Working with mental health patients & elderly.	To diffuse the culture of co-creation and uptake of new process of user engagement and products.
	Civil Society & NGOs	Social care organisations, housing organisations, organisations responsible for (mental-)health care.	To disseminate the journey's outcome and processes, and diffuse the culture of co-creation and citizen engagement in the work with elderly / patients.
	Providers	Service and products providers.	To diffuse the culture of co-creation and uptake of new processes of user engagement.
	Scientific and research community	Researchers.	To raise awareness of co-creation methodologies, promoting their uptake in local science and innovation practices.

	Stakeholders group	Preliminary mapped organisations	Scope
Communicate	National government, media, cultural organisations, pension funds, employees, public transport companies, HORECA (food service industry), NGOs, lab communities, designers & creative practitioners, formal and informal education, industry, care providers, researchers, and citizens.		To promote the actions, values & outcomes of Cubers's co-creation journey and SISCODE project in general. To promote the de-stigmatisation of, and a better life for, citizens struggling with loneliness and outcomes of aging.

Table 27: Matrix of Cube stakeholders and scope

Communication channels

	Reach (as of Jan 2019)	Target audience								Post Frequency
		Policy makers	S & R community	Industry/ innovation	Education communities	Lab communities	NGOs	Citizens	Media / Press	
Website	Unique visitors: 235.000 Visits: 295.000 Page views: 580.000	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
Mailing lists	13.350	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	6 / year
Twitter	Followers: 1.500	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Facebook	Followers: 10.000	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
LinkedIn		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Instagram	Followers: 2.000	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	

Table 28: Cube communication channels

6.3.1.4. Action plan

Phase and Activity	Stakeholders	Objectives in terms of communication, dissemination or engagement	Barriers on reaching stakeholders	Key messages	Action	Channels								
						Website	Website Lab	Facebook	Twitter	Instagram	LinkedIn	Mailing Lists	Direct emails	Other
Phase 1. Analyse Context	1.2 Research - data collection	Policy makers, social care organisations, citizens (patients and their families), housing organisations, care organisations, service providers.	<u>Engage</u> stakeholders as understand and map needs of target groups and stakeholders, size/scope/impact of the problem, causes of the problem, etc.	Lack of contact and access to stakeholders' representatives, especially patients (elderly) , Lack of interest, time, availability to engage.	Come invent with us (citizens). Building better futures for aging societies (professionals).	Using outcomes of activity 1.1, invest in direct contact with organisations, existing networks, etc. Online actions.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
	1.3 Data synthesis and analysis	Researchers.	<u>Engage</u> researchers on the interpretation and validation of data collected.	Lack of interest, time, availability to participate.	Shifting paradigms: co-creating science, technology and innovation with society.	Engage existing research partners and organisations such as NEIMED with clear benefits they could gain.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

Phase and Activity	Stakeholders	Objectives in terms of communication, dissemination or engagement	Barriers on reaching stakeholders	Key messages	Action	Channels								
						Website	Website Lab	Facebook	Twitter	Instagram	LinkedIn	Mailing Lists	Direct emails	Other
Phase 2. Reframe	2.2 Reframe the problem.	Policy makers, social care organisations, citizens (patients and their families), housing organisations, care organisations, service providers.	<u>Engage</u> key stakeholders to explore different frames together.	Fall out of participants of ongoing participants. Procurement and involvement of key stakeholders.	Come invent with us. Building better futures for aging societies. You are an essential part of our research.	Direct contact and invitations.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
	2.3 Frame opportunities	Policy makers, care organisations, house organisation.	<u>Engage</u> and <u>disseminate</u> new perspectives and possible opportunities.	Fall out of engaged stakeholders. Lack of access to key players to disseminate the findings.	Future proofing our societies: shaping policies together. Innovation for better living.	Reinforce the importance of the research stakeholders. Direct contact. Online actions.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Phase and Activity		Stakeholders	Objectives in terms of communication, dissemination or engagement	Barriers on reaching stakeholders	Key messages	Action	Channels							
							Website	Website Lab	Facebook	Twitter	Instagram	LinkedIn	Mailing Lists	Direct emails
Phase 3. Envision	3.1 Generate (many) ideas. 3.2 Refine and select ideas. 3.3 Generate 2 or 3 concepts.	Policy makers, social care organisations, citizens (patients and their families), housing organisations, care organisations, service providers.	<u>Engage</u> stakeholders in the in the co-design processes.	Fall out of stakeholders, lack of access to elderly population, lack of existing contact base & availability from stakeholders.	Come invent with us. Building better futures for aging societies. You are an essential part of our research.	Map within existing contacts possible collaborators. Map existing organisations locating new contacts & new collaborators. Direct contact inviting stakeholders to be part journey.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
	3.3 Generate 2 or 3 concepts.	All.	<u>Communicate</u> this key moment of the co-creation journey.	Access to broad and vast audience.	Come invent with us!	Online Messages. Press actions.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	

Phase and Activity	Stakeholders	Objectives in terms of communication, dissemination or engagement	Barriers on reaching stakeholders	Key messages	Action	Channels								
						Website	Website Lab	Facebook	Twitter	Instagram	LinkedIn	Mailing Lists	Direct emails	Other
Phase 4: Develop and Prototype	4.1 Develop the concept(s)	Policy makers, social care organisations, citizens (patients and their families), housing organisations, care organisations, service providers.	<u>Engage</u> stakeholders in the co-design processes.	Fall out of stakeholders, lack access to elderly population, lack of existing contact base & availability from stakeholders.	Come invent with us. Building better futures for aging societies. You are an essential part of our research.	Map within existing contacts possible collaborators. Map existing organisations locating new contacts & new collaborators. Direct contact inviting stakeholders to be part journey.								
	4.2 Create (a) prototype(s)													
	4.3 Test and evaluate prototype						<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	

Phase and Activity	Stakeholders	Objectives in terms of communication, dissemination or engagement	Barriers on reaching stakeholders	Key messages	Action	Channels								
						Website	Website Lab	Facebook	Twitter	Instagram	LinkedIn	Mailing Lists	Direct emails	Other
Phase 4. Develop and Prototype	4.3 Test and evaluate prototype(s).	All strategic stakeholders mapped during the process.	<u>Disseminate</u> findings and process – possible uptake.	Access to a broad number of stakeholders, access to key players, lack of interest in outcomes.	Future proofing our societies: Shaping policies together. Become part of the elderly care future.	Production of beautiful presentation of findings, invest in direct contact with organisations, existing networks, etc. Online actions.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
	4.3 Test and evaluate prototype(s).	All.	<u>Communicate</u> co-creation journey.	Access to broad and vast audience.	Come invent with us! This is co-creation can do.	Online Messages. Press actions.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	

Table 29: Cube action plan

6.3.2. Pavilhão do Conhecimento, Ciência Viva

6.3.2.1. About the lab

Ciência Viva - the Portuguese agency for the public awareness of science and technology - is a non-profit association of public institutions and research laboratories; it is also a network of 20 science centres across Portugal that includes Pavilhão do Conhecimento (Pavilion of Knowledge), in Lisbon, host of this lab. The agency has extensive experience in engaging the public, researchers, schools and industry in science and society initiatives. Ciência Viva has been involved in several European projects for science awareness, science education, sharing of resources and, more recently, responsible research innovation and open science.

6.3.2.2. Situation analysis

The challenge

Portugal is a coastal country, where the sea plays a key role in the tourism industry and in Portugal's history, mythology and culture; yet leisure activities are relatively uncommon in the country. Pavilhão do Conhecimento - Ciência Viva challenge is **to foster marine leisure activities as a tool to promote ocean awareness and healthier lifestyles**. What concrete measures could help engage the widest range of people in recreational marine activities? What service, equipment or practice can help engaging the public in marine leisure activities, while promoting ocean literacy and awareness, and being accessible to a wide range of users? To try answering these questions, Pavilhão do Conhecimento - Ciência Viva will engage individuals and communities through a processes in which their needs and circumstances are put first in the development of appropriate, adaptable, affordable, and accessible services and products.

Internal and external landscape

Pavilhão do Conhecimento has a well-established network in the general field of its challenge (sea and society) and has amassed a good body of knowledge and resources about ocean literacy and related aspects: climate change, marine litter, sea food, sustainable uses of the ocean including sports and leisure; and has developed an extensive network that covers most areas related with ocean research and governance, uses of the ocean, ocean advocacy, and ocean education.

In regards to methodology, in the last few years, Pavilhão do Conhecimento team has been involved in design, organisation and facilitation of participatory (although not fully fledged co-creation) processes, involving students and school communities, researchers, policy

makers, civil society, NGOs, entrepreneurs and artists, including within different ocean related projects (e.g., EU projects Sea for Society, Sea Change). Through these experiences, the Lab has the opportunity to use engagement processes similar to what we are doing in SISCODE: mapping and recruiting stakeholders, working in co-creation workshops. A big difference now – and probably one of the lab’s biggest challenges – is to keep the stakeholders engaged for a much longer period.

Co-creation is not really well known, let alone practiced in Portugal. Policy makers, especially at the local level, are of course aware of participatory concepts (which they have put in practice in a few cases, through large scale projects, like participatory budgets, municipal and national), but probably not so much of co-creation; and co-creation is certainly absent from businesses’ agendas. Added to this, we can expect some consultation fatigue, meaning that while our stakeholders are not used or even familiar with co-design, they were possibly involved in some sort consultation/debate based exercise.

Potential risks or barriers and responses

Risks/Barriers	Responses
Policy makers are hard to reach and engage.	A dedicated communication strategy and plan on how to keep policy makers informed and involved throughout the project (reaching from press releases, one-pagers, to one on one meetings).
Participants from the public, i.e., “users” will be hard to identify, reach and engage in a long process – for anything more meaningful than a survey.	Start with personal knowledge and networks of the team; there’s no reason to exclude friends, family, neighbours, etc. Map existing community groups that are interested in the issue (activists protecting marine life/beach etc., sports groups already active at the seaside, connecting with schools activity programs etc., local businesses by the coast). Communication in these cases can/should be one-one, message also established on an individual basis.
Consultation fatigue (stakeholders are fed up with participatory processes that amount to “nothing but talk”).	Show from the beginning that this is not just a consultation. Invitations should make clear that participants will be involved in decision-making and creative processes, with strong message about co-design and the possibility of making real change. Connect with other on-going events or happenings by the seaside, or create your own way to celebrate milestones together with your stakeholders.

Risks/Barriers	Responses
A bit different from previous point: fatigue from the co-lab journey itself, considering its long duration.	Keep participants informed about major milestones; but not over informed, only highly relevant information: let's not waste people's time. Acknowledge particularly thoughtful contributions and developments, either personally or through social media. Interactions should reflect and document achievements to create sense of ownership. Let them know of similar successful, inspiring processes.
Co-creation lab won't have direct access to Ciência Viva communication channels (i.e., social networks, newsletter), which have their own agenda and aim to reach the largest audience possible.	Co-lab to create its own dedicated FB/Instagram/Twitter profiles, with total editorial freedom During initial stages of the co-creation journey, the lab will not demand a lot from regular communication of Pavilhão do Conhecimento, instead it will focus on personal networks and make strategic use of main channels for major milestones & results to present and test, and thus not exhaust its main channels.

Table 30: Risks and barriers for Pavilhão do Conhecimento communication, dissemination and engagement.

6.3.2.3. Strategy

Key messages

- Future-proofing our societies: Shaping policies together.
- There is no future for business in societies, in which oceans are indiscriminately used.
- Innovations, technological development and sustainable business operations are the foundations for future societies.
- Your commitment, experience and knowledge are precious resources that assure exploitation and conservation of our sea walk hand to hand.
- Do it! Science, Technology and Innovation by all!
- Co-creating future cities and oceans with careful consideration and the harmonization of the needs of the people, nature and the economy.
- We all have the right to live well, be healthy, successful and happy.
- We cannot separate our lives from the lives of the seas.
- The ocean has an important positive influence on our mental and physical health.

Stakeholders and scope

	Stakeholders group	Preliminary mapped organisations	Scope
Engage	Policy Makers	Lisbon Municipality (director of Sea Working Group, a multistakeholder group to develop the city's maritime economic strategy).	To connect and engage with the strategic department for management of sea activities as to understand the challenge and can debate the problems.
		Lisbon Municipality, department of education (Supervisors of school sports, including programme for water sports).	
		Parish councils Pavilhão's neighbourhood (Olivais).	
		Environment department of Olivais parish council .	
	Citizens	Local and interested citizens from Pavilhão's neighbourhood – potential users.	To procure and engage citizens to consult their needs, opinions, perceptions, etc. and reframe the problem together.
	NGOs & civil societies	Local advocacy and associations already working in the regeneration of the neighbourhood, leisure activities, mobility and environment (i.e. Seawoman & SOS).	To procure and engage citizens to consult their needs, opinions, perceptions, etc. and reframe the problem together.
	NGOs & civil societies	Association to foster engagement of women of all ages in water sports, based near Parque das Nações.	To procure and engage citizens to consult their needs, opinions, perceptions, etc. and reframe the problem together.
	Formal and informal education	Local school community.	To re-engage with local school and teachers responsible for water sports in high school programmes as to gain insight into their experience and to co-create solutions together.

	Stakeholders group	Preliminary mapped organisations	Scope
Engage	Researchers	Invited researchers with experience & expertise in water & ocean matters; socio-cultural research; and participatory processes.	To engage existing network of researchers as to assure their participation in desk and field research; ethnography; interviews; focus groups, quantitative and qualitative data analysis: compiling and “translating” results, and assisting in identifying possible collaboration between stakeholders.
	Business	Local businesses related with water activities including water sports schools; maritime tour operators; private marina, etc.	To procure and engage network of local business as to gain access to their perspectives, needs and to, together her, work on defining and reframing challenge.
	Media	“Notícias do Parque”, neighbourhood newspaper who has featured several articles on challenge’s subject and whose director is involved in water leisure activities.	To engage local newspaper as to gain insights and help debate and reframe the challenge.
Disseminate	Policy Makers	Local and national authorities related to sea, education and sports.	To disseminate journey’s outcomes for uptake and scaling up of solutions, demonstrating the value of co-creation in policy making.
	Citizens	Final users of journey outcomes.	To uptake solutions, new values, including participation in decision making, final outcome. To participate in ocean leisure activities becoming more conscious of sea preservation and leading a healthier life.
	NGOs & Civil Societies	Organisations working with, leisure activities, mobility and environment, especially sea related.	To disseminate final outcome and processes. Demonstrate the value of co-creating solutions. To demonstrate the potentiality of leisure activities for citizens’ sea advocacy and education.

	Stakeholders group	Preliminary mapped organisations	Scope
Disseminate	Industry (Companies, SMEs and Start-ups)	Working with water sports; maritime tools operations and private marinas.	To scale up of final outcome (possibly). To demonstrate the value of co-creating solutions.
	Researchers	In the fields of water & ocean matters & socio-cultural research.	To demonstrate the value of co-creating solutions and processes.
Communicate	Policy makers, scientific and research community, industry/ innovation, education communities, lab communities, NGOs, Citizens, press and media representatives, local authorities.		To promote the actions, values & outcomes of Pavilhão's co-creation journey and SISCODE project in general.

Table 31: Matrix of Pavilhão do Conhecimento stakeholders and scope

Communication channels

	Reach (as of Jan 2019)	Target audience								Post Frequency
		Policy makers	S & R community	Industry/ innovation	Education communities	Lab communities	NGOs	Citizens	Media / Press	
Website	Not available	☑	☑	☑	☑	☑	☑	☑	☑	Occasionally
Mailing lists	Not available	☑	☑	☑	☑	☑	☑	☐	☑	Occasionally
Twitter	Followers: 7.150	☐	☐	☐	☐	☐	☐	☑	☐	Irregular; mostly on special occasions
Facebook	Followers: 48.823 Likes: 49.569	☐	☐	☐	☑	☑	☐	☑	☐	1 / day (more if needed)
Instagram	Followers: 1.613	☐	☐	☐	☑	☑	☐	☑	☐	Less than 1 / day (but more if needed; more flexible than FB)
Newsletter	Not available	☑	☑	☑	☑	☑	☑	☑	☑	Monthly

Table 32: Pavilhão do Conhecimento communication channels

6.3.2.4. Action plan

Phase and Activity	Stakeholders	Objectives in terms of communication, dissemination or engagement	Barriers on reaching stakeholders	Key messages	Action	Channels							
						Website SISCODE	Website Lab	Facebook	Twitter	Instagram	Mail	Other	
Phase I. Analyse Context	1.2 Do research	Local representatives: residencies, parish council, residents' associations, environmental associations & relevant local business.	<u>Engage</u> stakeholders as to collected knowledge & engage them as in research.	Lack of contacts within stakeholders' group. Lack of availability (time and interest) of existing stakeholders' network.	Ready to co-create? Your commitment, experience and knowledge are precious resources to assure exploitation and conservation of our sea walk hand to hand.	Map and contact associations and business (reach residents via associations). Invest in personalised contact with individuals, calls meetings etc.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Direct contact

Phase and Activity	Stakeholders	Objectives in terms of communication, dissemination or engagement	Barriers on reaching stakeholders	Key messages	Action	Channels						
						Website SISCODE	Website Lab	Facebook	Twitter	Instagram	Mail	Other
Phase I. Analyse Context 1.3 Analyse data	Researchers & local authorities.	<u>Engage</u> stakeholders as to involve them in the analysis of data collected during activity 1.2.	Lack of availability (time and interest) of existing stakeholders' network.	Co-creation meanings creating future cities and oceans with careful consideration and the harmonisation of the needs of the people, nature and the economy.	Engaged with existing network of researchers & local authorities Direct contact highlighting possible benefits and gains.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Meetings, calls, etc.

Phase and Activity	Stakeholders	Objectives in terms of communication, dissemination or engagement	Barriers on reaching stakeholders	Key messages	Action	Channels						
						Website SISCODE	Website Lab	Facebook	Twitter	Instagram	Mail	Other
Phase 2. Reframe	2.1 Visualise & interpret data	All.	<u>Communicate</u> the data compiled, presenting it to different stakeholders to promote the journey and engagement with it.	Access to a broad number and diverse group of individuals from stakeholder groups.	Future-proofing our societies: Shaping policies together. Co-creation meanings creating future cities and oceans with careful consideration and the harmonization of the needs of the people, nature and the economy.	Author and distribute communiqué with accessible language. Direct contact with key individuals.	☒	☒	☒	☒	☒	☒

Phase and Activity		Stakeholders	Objectives in terms of communication, dissemination or engagement	Barriers on reaching stakeholders	Key messages	Action	Channels						
							Website SISCODE	Website Lab	Facebook	Twitter	Instagram	Mail	Other
Phase 2. Reframe	2.2 Reframe problem	Local representatives: residencies, parish council, residents' associations, environmental associations & relevant local business.	<u>Engage</u> stakeholders with the aim of together reframing the challenge / problem and with it promote ownership of the journey.	Lack of availability (time and interest) of existing journey's stakeholders. Not all necessary stakeholders engage.	Your commitment, experience and knowledge are precious resources to assure exploitation and conservation of our sea walk hand to hand.	To assure the participation of stakeholders in meeting (debates), invest personalised emails, phone calls, production of visual appealing material.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Direct contact

Phase and Activity		Stakeholders	Objectives in terms of communication, dissemination or engagement	Barriers on reaching stakeholders	Key messages	Action	Channels						
							Website SISCODE	Website Lab	Facebook	Twitter	Instagram	Mail	Other
Phase 2. Reframe	2.3 Frame opportunities	Parents associations, Government authorities in education environment and port authorities; media (local newspapers and sport channels).	<u>Disseminate</u> ideas and journey to further possibility of collaborations between stakeholders.	Lack of access to key players.	Future-proofing our societies: shaping policies together. Co-creation meanings creating future cities and oceans with careful consideration and the harmonization of the needs of the people, nature and the economy.	Distribute research results via a communiqué. Map and direct contact with key stakeholders.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Direct contact

Phase and Activity		Stakeholders	Objectives in terms of communication, dissemination or engagement	Barriers on reaching stakeholders	Key messages	Action	Channels						
							Website SISCODE	Website Lab	Facebook	Twitter	Instagram	Mail	Other
Phase 3. Envision	3.1 Generate ideas	Strategic.	<u>Engage</u> stakeholders as to generate ideas.	Fall out of engaged stakeholders or missing new stakeholders.		Re-establish contact with engaged individuals (Phase 1 & 2) Engage with social media and existing network.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Direct email
	3.2 Refine and select	Local representatives: residencies, parish council, residents' associations, environmental associations & relevant local business.	<u>Engage</u> stakeholders as to select and prioritise ideas.	Fall out of engaged stakeholders or missing new stakeholders.	Your commitment, experience and knowledge are precious resources to assure exploitation and conservation of our sea walk hand to hand.	Re-establish contact with engaged individuals (Phase 1 & 2).	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Direct email

Phase and Activity	Stakeholders	Objectives in terms of communication, dissemination or engagement	Barriers on reaching stakeholders	Key messages	Action	Channels						
						Website SISCODE	Website Lab	Facebook	Twitter	Instagram	Mail	Other
Phase 3. Envision	3.3 Generate concept	All.	<u>Communicate</u> journey's ideas and concept – <i>Strong communication moment.</i>	Access to a broad number and diverse group of individuals.	Your commitment, experience and knowledge are precious resources to assure exploitation and conservation of our sea walk hand to hand.	Author & distribute communiqué, online actions, (use of lay language) Present next steps, creating a narrative of possibilities.	☒	☒	☒	☒	☒	☒

Table 33: Pavilhão do Conhecimento action plan

6.4.1. Science Gallery Dublin

6.4.1.1. About the lab

In 2008, a forgotten corner of Trinity College Dublin was transformed into a living experiment called Science Gallery Dublin (SGD). Through a cutting-edge programme that ignites creativity and discovery, where science and art collide, SGD encourages young people to learn through their own interests. Since its opening, more than three million visitors have experienced 43 unique exhibitions, ranging from design and violence to light and love and from contagion and biomimicry to the futures of the human species and play. SGD's focus is on providing programmes and experiences that allow visitors to participate and facilitate social connections, always providing an element of surprise.

6.4.1.2. Situation analysis

The challenge

SGD challenge is to **develop mental health and well-being management with young people in Ireland**. Life in the digital age of social media, rising uncertainty about world leadership, and climate change are among the factors that affect the mental health of young people in a negative way. Focusing on young people between 15 and 25 years old, SGD will investigate what is the most important issue of youth today that needs to be heard and together with them and many stakeholders prototype tangible solutions.

Internal and external landscape

The success of SGD initiated the establishment of a global Science Gallery network, with six members across four continents: Dublin, London, Melbourne, Bengaluru, Venice, and Detroit, with the goal of establishing a network of 8 Science Gallery nodes worldwide by 2020. Access to the global network has a strong impact on SGD'S communication reach, as teams can share knowledge, collaborate in transnational projects, and multiply resources. More importantly, a common identity allows for strong brand recognition that came to mean quality and edginess when it comes to science engagement.

SGD has a strong media presence, at a national and global level. In 2017 it returned an increased level of national coverage, in line with previous years, with over 210 mentions in broadcast media and 516 mentions in Irish online/print media. Their target audience is aligned with the challenge and it is linked with SGD's dedicated education programmes and community outreach. Further, the unique placement within Trinity College Dublin means the lab has access to the young people, and therefore, will be able to make use of societies

and other links within the college to invite final users to participate in the co-creation journey.

In regards to its connections to other key stakeholders groups, SGD enjoys access to a wide network of researchers and professionals who are working in area of the lab's chosen challenge. Being located in a city that is growing to be a tech hub of Europe, SGD can engage a dynamic value-chain of stakeholders in a participatory innovation approach as this already exists in the immediate area. Lastly, SGD's experience with exhibition design and the nature of their programme puts the lab in close contact with designers and other creative professionals.

SGD develops an ever-changing programme of exhibitions and events fuelled by the expertise of scientists, researchers, students, artists, designers, inventors, creative thinkers and entrepreneurs. The challenge "mental health and well-being in young people" has strong ties with previous and upcoming exhibitions, allowing the lab to build on existing relationships as well as foster new ones. For example, their current exhibition INTIMACY, has a number of possible journey collaborators. For example, First Fortnight as part of *First Fortnight – European Mental Health Arts & Culture Festival 2019*, which included *Mental Health Uploaded* - a day of tech-related events exploring the relationship between tech and mental health.

When considering the external landscape is important to highlight how co-creation appears to be on the agenda of Irish policy makers. In 2015, the Irish government published the report 'National Strategy on Children and Young People's Participation in Decision-Making 2015-2020'. The early thinking in the development of the 2015-2020 strategy was to base its priorities on the everyday lives of children and young people, who make up a considerable percentage of the Irish population. It is a key priority of this strategy that children and young people who are usually seldom-heard are enabled to take part in decision-making. This is particularly critical in the case of children living in the care of the State or in receipt of child protection and welfare services. This strategy sets a strong precedent for co-creation of SGD's challenge.

Moreover, the prevalence of mental health difficulties in Ireland is significant. The most recent census data (2016) shows that the percentage of people with a psychological or emotional condition increased by almost 30%, between 2011 and 2016. The Healthy Ireland survey reports that almost 10% of the Irish population over age 15 has a 'probable mental health problem' (PMHP) at any one time. The situation is more severe for children and

young people, with almost 20% of young people aged 19-24 years having had a mental health disorder and 15% of children aged 11-13 years also having experienced a mental health disorder.

Mental health is a priority for the Irish people. A report by Mental Health Reform found that a large majority of the population are in support of increasing funds for mental health services. The 2019 Budget allocation gave €55 million additional funding for mental health to a total of €105m, but there is currently no breakdown of adult and young people mental health spending. This outlines a strong interest in mental health in young people, by both the government and the general population, to co-create solutions for problems in this area.

Potential risks or barriers and responses

Risks/Barriers	Responses
Policy makers are hard to reach and engage.	A dedicated communication strategy and plan on how to keep policy makers informed and involved throughout the project (reaching from press releases, one-pagers, to 1-to-1 meetings), explaining how the project can be of value to them.
Researchers/ professionals and students can have limited availability, so an open discussion with all parties may be hard to arrange.	Decide on dates for Phase 3 as early as possible to facilitate people who are interested in attending. Make sure they are not during national holidays or the university exam period.
The communications department has recently been restructured in 2019, resulting in the loss of a staff members and a reduced marketing budget.	Actions will be taken to focus on maximising the dissemination power of stakeholders directly involved with the co-creation journey.
A new communication manager has started who is unfamiliar with the project.	Meet with new communication manager to debrief on what the project is and what our needs are in terms of communication.

Table 34: Risks and barriers for SGD communication, dissemination and engagement

6.4.1.3. Strategy

Key messages

- Future-proofing our societies: Shaping policies together.
- Ready to co-create?
- Do it! Science, Technology and Innovation by all!
- Shifting paradigms: Co-creating science, technology and innovation with society;
- Co-creation meanings creating societies with careful consideration and the harmonization of the needs of the people, the environment and the economy.
- We all have the right to live well, be healthy, successful and happy.
- Designing better societies requires collective thinking
- You have a saying on your body and health
- You are part of your own health care
- A better world is possible, be part of designing how it should look like
- Patients are valuable partners in co-creating the future of mental health care
- Shifting paradigms: Co-creating the future of mental health care
- Join this opportunity to build new connections and learning
- Rethinking mental healthcare together

Stakeholders and scope

	Stakeholders group	Preliminary mapped organisations	Scope
Engage	Citizens	Young People in secondary school affected by mental health issues.	To actively engage youth with mental health problems and their families in all phases and processes of the co-creation journey.
		Young people out of school affected by mental health issues.	
		Family of those afflicted.	

	Stakeholders group	Preliminary mapped organisations	Scope
Engage	Researchers from Trinity College Dublin and University College Dublin	Researchers in the area of neuroscience, (i.e. Global Brain Health Institute), or technology that could be used to treat mental health challenges), including Robotics.	To engage researchers working in relevant fields as consultants & co-designers.
	Policy Makers	Policy makers at variant levels, locally and nationally.	To engage policy makers as consultants & co-designers.
		Ignite (Public Patient Involvement Board at Trinity College Dublin).	To engage policy makers as consultants & co-designers.
	Formal and Information education	Teachers & Educators.	To engage formal and informal professionals involving them in Phase 1, Phase 3, Phase 4 , also gaining access to their experience of dealing with young people's mental health.
		Mediators - SGD Casual Staff.	
		School Board Principles.	To engage principles as to gain their insights on the challenge and existing landscape.
	NGOs & Civil Society	Youth Groups (Stain Andrew, SWAN).	To actively engage youth associations in all phases of co-creation journey.
		Mental Health Groups who work with young people with mental health challenges: i.e. Pieta House, Jigsaw.	To engage mental health organisations as consultants and depending on prototype Mental Health Groups could become involved as strategic stakeholders or providers.
		Citizen science association.	To engage citizen science organisations as consultants and co-designers.

	Stakeholders group	Preliminary mapped organisations	Scope
Engage	Industry	Google and other local tech companies.	To engage with tech companies working together as co-designers and consultants (possible scaling up).
	Makers' Community	MADE- Maker Group for Dublin area , an SFI funded initiative group to knit together the 'maker' scene in Dublin.	Engage with tech companies working together in as co-designers and consultants.
	Practitioners	Mental Health Professionals: Trinity College Dublin peer counsellors and counsellors services.	Engage individuals working in health and in the field of tech, 3D art, theatre, music, VR tech, etc. so together they can co-creation solutions for the challenge.
		Professionals in the fields of tech, 3D art, theatre, music, VR tech, etc.	
		People who work directly in the mental health service and see young people with mental health problems and how the health system could be improved.	Consult with professionals working in mental healthcare as to gain insight to their experience & knowledge and local treatment landscape.

	Stakeholders group	Preliminary mapped organisations	Scope
Disseminate	Citizens	Youth suffering from mental health difficulties, their parents and relatives & other youth (support systems).	To disseminate outcomes and processes to mental health patients as to promote uptake. Disseminate a culture of participation and co-creation in policy making among youth.
	Policy Makers	National and regional policy makers, university policy makers, Irish departments of health (HSE) and education, Trinity College Dublin Provost.	To disseminate outcomes and process as to promote uptake and scaling up of solutions, demonstrating the value of co-creation in policy making.
	Formal and Information education	Teachers and schools principles, school nurses.	To disseminate mental health awareness, outcomes and processes of co-creation journey and the culture of co-creation.
	NGOs and civil society	Patient groups, youth groups, rehabilitation centres, hospitals, caregivers associations.	To disseminate outcomes and process as to promote uptake and scaling up of solutions, demonstrating the value of involving patients in co-creation solutions
	Practitioners	Mental health professionals across Ireland, caregivers.	To disseminate outcomes and processes as to promote uptake and scaling up of solutions, demonstrating the value of involving patients in co-creation solutions.
	Industry	Tech companies based in Ireland.	To disseminate outcomes and processes as to promote uptake and scaling up.

	Stakeholders group	Preliminary mapped organisations	Scope
Communicate	15-25 years old youth, mental health patients, mental health professionals, policy makers, researchers, makers' community, formal and informal education, press.		To promote the actions, values & outcomes of SGD's co-creation journey and SISCODE project in general. Promote youth mental health awareness.

Table 35: Matrix of SGD stakeholders and scope

Communication channels

	Reach (as of Jan 2019)	Target audience								Post Frequency
		Policy makers	& R community	Industry/ innovation	Education communities	Lab communities	NGOs	Citizens	Media / Press	
Website	Unique visitors: Visits: Page views: 866.437	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	2/week
Mailing lists	Subscribers: 15.875	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	1/ week
Twitter	Followers: 32.100	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	1/day
Facebook	Followers: 36.797	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	1/day
Instagram	Followers: 6.958	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	1/day

Table 36: SGD communication channels

6.4.1.4. Action plan

Phase and Activity		Stakeholders	Objectives in terms of communication, dissemination or engagement	Barriers on reaching stakeholders	Key Messages	Action	Channels					
							Website SISCODE	Website Lab	Facebook	Twitter	Instagram	Other
Phase I. Analyse Context	1.1 Prepare research	Researchers and sample focus group of young people (from existing collaborators – Young Leos, TY students).	<u>Engage</u> stakeholders as to involve in the research preparations.	Lack of availability (time and interest) of existing stakeholders’ network.	Shifting paradigms: Co-creating science, technology and innovation with society.	Direct contact to inviting known network to contribute to research.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Phase and Activity		Stakeholders	Objectives in terms of communication, dissemination or engagement	Barriers on reaching stakeholders	Key Messages	Action	Channels					
							Website SISCODE	Website Lab	Facebook	Twitter	Instagram	Other
Phase 1. Analyse Context	1.2 Research	Strategic.	<u>Engage</u> stakeholders as to gain insight in local context and together involve them in the project definition.	Lack of existing contacts within key stakeholders' group Lack of time and interest in engaging with research.	N.A	Map stakeholders' organisations Establish relations with new stakeholders Direct contact to inviting known stakeholders to contribute to research.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Phase and Activity	Stakeholders	Objectives in terms of communication, dissemination or engagement	Barriers on reaching stakeholders	Key Messages	Action	Channels					
						Website SISCODE	Website Lab	Facebook	Twitter	Instagram	Other
Phase 2. Reframe	2.1 Visualise and interpret data	Key stakeholders.	<u>Disseminate</u> (and possible uptake) of Phase 1 findings to relevant stakeholders.	Access to a broad number and key players.	Designing better societies requires collective thinking Ready to co-create? We all have the right to live well, be healthy, successful and happy.	Distribute research results via a communiqué Map and direct contact with key stakeholder, including Phase 1 contributors.	☒	☒	☒	☒	☒
	2.1 Visualise and interpret data	All	<u>Communicate</u> journey - Use data gathered to open the journey's narrative.	Access to a broad number and diverse group of individuals.	We all have the right to live well, be healthy, successful and happy. Do it! Science, Technology and Innovation by all!	Make research available online and share it short intro via social media (use of lay language) Present next steps.	☒	☒	☒	☒	☒

Phase and Activity	Stakeholders	Objectives in terms of communication, dissemination or engagement	Barriers on reaching stakeholders	Key Messages	Action	Channels					
						Website SISCODE	Website Lab	Facebook	Twitter	Instagram	Other
Phase 3. Envision	3.1 Generate ideas	All strategic (mapped for engagement).	Re-engage stakeholders (phase 1 & 2) in the co-creation journey aiming to collaborate in new the creation and selection of ideas, as well as in generation a concept.	Fall out of stakeholders Lack of time and interest in engaging with project.	Designing better societies requires collective thinking Ready to co-create? We all have the right to live well, be healthy, successful and happy.	Invest in personal contact with known stakeholders.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
							<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
	3.2 Refine and select ideas	All key stakeholders groups (disseminate).	Disseminate the finds idea and concepts generated in Phase 3 to create possibilities for uptake & the engagement of other stakeholders.	Lack of access to all stakeholders groups.	You are part of your own healthcare Patients are valuable partners in co-creating the future of mental healthcare.	Map and direct contact with key stakeholder.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	3.3 Generate a concept						<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

Phase and Activity	Stakeholders	Objectives in terms of communication, dissemination or engagement	Barriers on reaching stakeholders	Key Messages	Action	Channels					
						Website SISCODE	Website Lab	Facebook	Twitter	Instagram	Other
Phase 3. Envision	All.	<u>Communicate</u> the next phase of the journey; highlighting possible solutions that concept can bring to the life mental health. patient / youth	Access to a broad number and diverse group of individuals.	We all have the right to live well, be healthy, successful and happy. Do it! Science, Technology and Innovation by all!	Make research available online and share its short intro via social media (use of lay language) Present next steps.	☒	☒	☒	☒	☒	☒

Table 37: SGD action plan

6.4.2. Traces

6.4.2.1. *About the lab*

Acting at the crossroad between participatory science engagement and social inclusion, Traces is a not-for-profit association exploring the relevance of science and knowledge within specific social contexts. In Paris and in Europe, Traces creates spaces in which to reflect, experiment and innovate in the fields of science in society, education and social work. Since 2011, TRACES runs the activities of the Espace des Sciences Pierre-Gilles de Gennes (ESPGG), the science-culture venue of ESPCI Paris and PSL University, a leading French research university covering a wide academic field, well-connected to national research bodies and with a strong innovation-oriented research policy. As a platform between the academic, associative and private spheres and in collaboration with diverse partners, Traces is committed to create a “living lab of scientific culture”, where the frontiers between knowledge production and knowledge sharing become blurred.

6.4.2.2. *Situation analysis*

The challenge

Traces’ challenge is to **explore the relationship between citizens’ right to make informed decisions and the prevailing automated “choice processes”**. During its journey, Traces will investigate how we can enforce our “right to be informed” when automated decision processes that use algorithms are prevalent in everyday life. How can the presence of AI-based supports to professional or everyday life decisions become noticeable and readable for citizens (end users) so they can make informed choices in crucial aspects of their lives? How can we make people more conscious of automated decision processes, services or applications, and of the criteria used by algorithms? How can we make ethical issues explicit and understandable for the generic users? By the end of its journey, Traces outcomes will inform and support policy makers in understanding public visions on the issue while providing tips for the actors of the educational and cultural community so to engage with the issue and to have solid instruments to address it.

Internal and external landscape

In regards to its access and experience working with key stakeholders’ groups, it’s important to highlight ESPGG position within a leading research institution (ESPCI Paris/PSL) and a dynamic innovation ecosystem, recognized by both researchers and the industrial sector, that makes Traces particularly suited for running activities involving several stakeholders.

Traces' core competences relies in innovative methods for science engagement and social inclusion, facilitation of discussion games on socially relevant science and technology issues, collaborative training in RRI, and science in society. In the last 3 years Traces has initiated several projects using living lab approaches, bringing together the science community and other actors from the arts, international cooperation, education, etc. Traces' activities satisfy at the same time the needs of the general public and the needs of the research and innovation community, aiming at combining dialogue approaches of science engagement and living lab methodology and open innovation approach to provide meaningful explorations of science based, socially relevant issues.

An example is the participatory exhibition "Frugal science". The exhibition itself was entirely built during workshops involving very diverse stakeholders (innovators, international cooperation activists, teachers, engineers, students, etc.), all exploring how to hack everyday technological objects to transform them into low cost scientific instruments. Another example is SiS Catalyst, a large scale FP7 MML project that explored and identified the best ways to involve young people in the social, cultural, political, educational and scientific decision-making processes that will affect their futures.

Because it runs the activities of the Espace des Sciences Pierre-Gilles de Gennes (ESPGG), the science-culture venue of ESPCI Paris and PSL University, Traces can enjoy synergies between the three organisations communication channels and opportunities. For example, as part of the exhibition "Choice" (at ESPGG from January to June 2019) there will be around about 20 events, from mini-conferences, talks, and workshops to creative meetings which represent opportunities to engage with audiences and to communicate the co-creation journey not only to the event attendees but also via ESPGG's Facebook, Instagram, and Twitter. The journey will also be communicated via PSL University twitter channel which has 8380 subscribers.

The use of algorithms in automated decision making is quite visible in Parisian (and French) media, as well as AI and new technologies. Articles on ethical algorithms have recently even been published in the Parisian free press, i.e the recent article on Maathics start up¹¹; not to mention internationally with last years' Cambridge Analytica scandal.

At the same time, the demand from citizens to information on the use of their data has been growing. The Commission Nationale de l'Informatique et des Libertés (CNIL) - the French

¹¹ <https://www.20minutes.fr/toulouse/2377267-20181121-algorithme-peut-montrer-injuste-toulouse-chercheurs-font-passer-tests-moralite>

governmental organisation in charge of protecting citizen rights to private data - published a report indicating that in 2018 alone, there were more than 10 000 complains. And although co-creation is part of French policy makers culture (i.e. City of Paris participatory budget), in the research community co-creation processes are understood but not yet recognised as a valuable approach.

Potential risks or barriers and responses

Risks/Barriers	Responses
Policy makers are hard to reach and engage.	Traces will implement a dedicated communication strategy and plan on how to keep policy makers informed and involved throughout the project (reaching from press releases, one-pagers, to 1-to-1 meetings).
Difficult to engage industrial stakeholders.	The lab will invest in promoting a clear and convincing message on the benefits for industry and innovation stakeholders on their engagement. By ensuring that key policy makers are involved in the process, the participation on the co-creation journey will be increased, since they we become an interesting entry point for start-ups.
Hard to engage scientific community in co-creation projects.	Traces will conduct individualised calls for participation to relevant stakeholders of scientific community (research and policy makers).
Lack of dedicated research agenda linked to AI developments and ethical issues.	Traces will benefit from involving specific stakeholders in dedicated Research projects helped by Region Ile de France (DIM Math-Innov and DIM RFS).
Too much competition of similar activities. Paris has a great offer activities, events, labs, etc., which means stiffer competition.	Traces will integrate a personalised approach in communicating with stakeholders.
Difficulty in narrowing down dissemination multiplier and opportunities.	Traces will invest in developing their database of people & organisations which could potentially multiply the communication reach and even assure greater engagement.
For being both a venue for families and children & a culture venue for discussions on research topics, Traces suffer from a double identity which blurs its messages. Often audiences /stakeholders are confused if the activity or project is aimed at them.	Clear messages will be used when communicating, disseminating and engaging. Differentiated messages will be used with different groups.

Table 38: Risks and barriers for Traces communication, dissemination and engagement

6.4.2.3. Strategy

Key messages

- Shifting paradigms: Co-creating science, technology and innovation with society;
- Connect the dots: Communities-scientists-policy makers co-creating Science Technology and Innovation;
- Future-proofing our societies: Shaping policies together.
- Thinking with society: Real life experiments for policy makers;
- Become part of the solution;
- Co-creation: The missing link;
- Shaping science and innovation;
- Ready to co-create?
- Co-creating: Bring-in the communities;
- Join the lab: Be part of the solution to societal challenges;
- Citizenship shapes science policies of tomorrow;
- In this together;
- Do it! Science, Technology and Innovation by all;
- Understand-Ideate-Prototype: Shaping Science, Innovation and Technology together;
- Co-create the science of tomorrow;
- Putting innovation at the heart of society.

Stakeholders and scope

	Stakeholders group	Preliminary mapped organisations	Scope
Engage	Researchers & Academia	École nationale supérieure des Arts Décoratifs, Université PSL, Roxane Jubert, Enseignante Chercheuse.	To engage researcher as to consultant in framing the issue from the point of view do design and visual communication.
		Université Paris-Saclay, Conseil pour l'éthique de la recherche et l'intégrité scientifique (Emmanuel Hirsch, professeur d'éthique médicale à la Faculté de médecine).	To engage researcher as to consultant in framing the issue from the point of view do design and visual communication, and to gain important entry point to the Regional political agenda (he is director of the Regional ethical advisory committee).

	Stakeholders group	Preliminary mapped organisations	Scope
Engage	Researchers & Academia	ESPCI / PSL (François Vialatte Karim Benchenane - ESPCI: laboratoire Plasticité du cerveau / interfaces cerveau – machine).	To gain access to fundamental research on induced memories, and the possibility of influencing decision making from the point of view of neurosciences.
		Université Paris-Saclay (Baptiste Caramiaux, chargé de recherche au CNRS).	To consult Mr Caramiaux gaining insights into the Project Digiscope (Fab Lab and data visualisation).
	Policy Makers	Ile de France region - Président de l'Espace Ethique.	To engage the Ethics department in Paris city region.
		City of Paris - Jean-Louis Missika, Vice major in charge of innovation (someone from his team).	To involve the city policy makers, embedding the idea in the city policy agenda.
		City of Paris - Marie Christine Lemardeley Vice major in charge of innovation (someone from her team).	To involve the city policy makers, embedding the idea in the city policy agenda.
	NGOs	La FING (An organisation which develops innovative projects around open science and good practices in algorithm use).	To engage the network of grassroots and industry based actor -“InfoLab” hubs dedicated to share data and practices in Self Data use.
Disseminate	Industry and Innovation	1er hackerspace européen base à Nanterre, Fondation Orange – programme LORA (Laurent Chivot), hackers, and researchers in hardware.	To disseminate to the hacker community and to industry the importance of making visible where and when we are “being calculated”.
Communicate	General public, the media, policy makers, formal and informal education communities, scientific and research community, industry, civil society/NGOs.		To promote the actions, values & outcomes of Traces’ co-creation journey and SISCODE project in general.

Table 39: Matrix of Traces stakeholders and scope

Communication channels¹²

	Reach (as of Jan 2019)	Target audience						
		Policy makers	S & R community	Industry/ innovation	Education communities	Lab communities	NGOs	Citizens Media / Press
Website	Unique visitors: 79 /day Visits: 80/ day Page views: 350 – 155 unique pages / day	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Mailing lists	5866 Subscribers , of which: 1.662 schools, 1.748 professionals (institutions, researcher, sci. communications), 372 researchers, 46 student associations & 386 press	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Twitter	Followers: 2.689 (Traces) + 3.614 (ESPGG)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Facebook	Followers: 709 (Traces) + 2.151 (ESPGG)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
LinkedIn	(ESPGG – unknown number of followers and followers constitution)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
YouTube	Subscribers: 310	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Slug Mail	+1.000 schools	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Table 40: Traces communication channels

¹² Expected frequency was not established, as it may vary with the changes in journey implementation.

Phase and Activity		Stakeholders	Objectives in terms of communication, dissemination or engagement	Barriers on reaching stakeholders	Key messages	Action	Channels						
							Web	Facebook	LinkedIn	Instagram	Other	Communiques	Mails
Dissemination	Dissemination	National authorities. Media (national and regional level). Public opinion.	<u>Disseminating:</u> Informing & promoting. Building capacity for future implementation. Presenting the value of involvement of varied stakeholders in co-creation process.	Lack of interest.	Good practice of co-creation & cooperation.	Face2Face meetings between providers of potential solutions (based on prototypes) with local authorities. To present the results of the co-creation process with its outputs. To create database of end users. Press releases.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Table 41: Trace action plan

7. Conclusion

As stated previously, the 10 plans presented here are the first version of a live document aimed at facilitating the ongoing relation between the labs and their stakeholders. As the labs' journeys evolve and take place, not only their plans, but the labs engagement, disseminating and communication practices will also evolve and adapt to the reality of the co-creation journeys.

Ecsite will continue to support the labs on their planning and implementation, while allowing them to follow their own practices, since the labs are the best assessors of their own environment. By finding a balance between organisations and the project as a whole - a balance that varies from lab to lab - the dissemination not only of the journey, but of SISCODE values, learnings and outcomes will gain from local, national and pan European perspectives, and truly multiply.

