SOCIETAL ENGAGEMENT
WITH KEY ENABLING TECHNOLOGIES

Recommendations on tools for industry

Note to the readers: This document is an extract of *D2.2 Case reports and recommendations on tools for industry to work co-creatively with publics on developing KETs for solving societal challenges* written byJavier Mendibil, Raúl Tabarés, Ana Arroyo, Izaskun Jimenez – Tecnalia. The full report can be downloaded here: Full report

After recapping the experiences of the six SocKETs Labs deployed across Europe (Bulgaria, Denmark, Estonia, Italy, Serbia and Spain) into particular KETs dealing with circular economy, eHealth and industrial automation, we explain some of the recommendations that are based on the empirical evidence produced by the Labs. Our aim with this set of recommendations is provide some hints and guidelines that can be of help for industry to work co-creatively with society on developing KETs for solving societal challenges.

1. Choosing the right safe space

As we have observed during the development of SocKETs Labs, choosing a place for hosting a workshop during this co-creation process has been one of the first and most important decisions that Lab teams have faced. Selecting a particular space (virtually or physically) also shaped the way that activities were developed and how participation was formatted (Kelty, 2020). In this regard, COVID-19 has been an important constraint, pushing many Labs to host their events through virtual events and through digital platforms such as Zoom or Microsoft TEAMS. These platforms allowed to involve a significant number of participants that would not have been possible to involve with other in-presence conditions, but at the same time these platforms are also characterized by their limited interaction possibilities. In addition, events under these platforms were usually reduced in time to not cause "zoom fatigue" to participants as this has been one of the backlashes that happened during the push for digitalization that brought COVID-193.

3 See for instance https://news.stanford.edu/2021/02/23/four-causes-zoom-fatigue-solutions/

Apart from this matter of virtualization imposed by the pandemic restrictions at place in many territories across Europe during 2021 and 2022, we should also indicate that the Labs have opted for different ways for engaging stakeholders and citizens into the Labs. Some of them decided to host the workshops into their facilities (DTI, CRA, CPN), whilst others opted for going into public spaces (TECNALIA, AHHAA) or reaching community-managed spaces (AIRI).

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Different strategies were developed, with different objectives in mind and leading to different outputs. The spaces selected by the Labs shaped the way that the Labs were developed. In this regard, when we speak about societal engagement it is important to understand what our objectives are and what kinds of engagement activities we look for. "Open door days" promoted by research institutes and oriented to engage students in particular KETs should be more convenient to be hosted at their own facilities to help these young citizens to familiarizes with spaces, organizations and procedures that are at in place at these institutions. In contrast, approaching to a broader public like families and kids should be, probably, more convenient to be done throughout another space such as a science museum that is a "hub" for promoting societal engagement. Other possibilities that the Labs have explored in the development of SocKETs project, such as urban labs, social cooperatives or public foundations, are also important spaces for holding societal engagements activities around KETs and where minorities or communities could be easier to reach than in other spaces.
Choosing a particular space also has implications for setting up a climate of trust, empathy and cooperation. These ingredients are of paramount importance for setting up a social Lab, as these kinds of spaces demand to establish certain conditions for creating a safe space for different stakeholders and their different interests and motivations (Engels et al., 2019; Tabarés Gutiérrez & Bierwirth, 2019). Employing a space that can be neutral for different stakeholders (not political nor business connotations), where modularity is allowed (chairs and tables can be moved for different configurations) and that can promote a nice working environment for Lab participants (a bubble into everyday life routines) are some of the conditions for enabling successful stakeholder collaborations.

2. Facilitation matters

Most of the Labs hired facilitation services or involved specific profiles within their organizations with facilitation experience in co-creation and/or societal engagement. It is important to emphasize that companies or research institutes that want to engage citizens into KETs development or discuss future KETs implications may need particular profiles that can facilitate these processes. Facilitation skills combines a set of techniques that need to be deployed into particular contexts, but it also demands significant experience in facilitating these encounters. This experience is of utmost importance for dealing with an heterogenous set of stakeholders that can be activated when activities are not being deployed in the way that were planned and designed. It is also a kind of art, as personality traits are also important

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characteristics to consider for a facilitation team and different facilitation situations. In this regard, facilitators can employ different tools that were not planned or designed and that can help the group to reach a particular situation when things are not working as they should. Facilitation profiles and experiences are critical for deploying successfully societal engagement activities around KETs. Facilitators develop a significant number of activities oriented to establish a climate of trust, empathy and cooperation that are necessary conditions for developing "lab work". The activities carried out by a facilitator can be shared with people with different profiles such as lab managers and assistants, but the facilitator leads the way in which the activities are developed and controls the rhythm of work that is done in the lab. He/she can calm down the rhythm or accelerate it if needed. Her/his role is like an orchestra director but at the same time similar to a gardener, as he/she pays attention to cultural particularities or minor details that can affect the way that the group evolves.

It is also important to stress that co-creation and societal engagement are two completely different processes and demand different skills and competences. Co-creation is pre-supposed to have a different set of stakeholders that actively and collaboratively work together to a particular objective through different stages. It is also usually considered under the open innovation paradigm and has significant instrumental connotations. Societal engagement, in contrast, is oriented towards engaging citizens into particular implications of science, technology and innovation into a different set of formats (science cafés, dedicated workshops, public talks, etc.) and under a set of characteristics (the five requisites that were framed into a SocKETs previous report: normative, substantive, inclusive, timing and feasibility) (Willems et al., 2021). Societal engagement should not have instrumental connotations and it can be enclosed into the science and society literature. However, and at the same time, co-creation can be used to promote societal engagement as the majority of the labs have shown in their activities, engaging participants through different tools.

In this regard, setting specific objectives, concrete examples and inspiring stories that can help the facilitation team to design and plan specific agendas, methodologies and exercises to meet the proposed goals is of utmost importance. In WP2, TECNALIA team collaboratively developed with SocKETs Labs teams to produce a Lab Manual (Mendibil et al., 2021) oriented to help them during the experimentation stage for setting up the Labs. This was an important piece, but during the experimentation many doubts and questions were also addressed in follow-up sessions hosted on a monthly basis with the Labs. These sessions also helped to Lab teams to reach their own objectives and deploy their pursued activities. SocKETs experimentation stage has aimed to embrace co-creation for enabling contextualized societal engagement that have taken into account socio-cultural particularities regarding innovation

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ecosystems. In this regard, facilitation is a key component of co-creation and societal engagement, and it must be at the forefront of interventions.

3. There are no right tools, only tools that are useful for the development of the lab

SocKETs WP3 aims to develop a toolbox for promoting societal engagement into industry. WP1 and WP2 are providing theoretical and empirical evidence on which tools are more suitable for industry and KETs researchers that want to promote societal engagements around R&I. However, as the different Labs have shown, there are no right tools or convenient tools for particular technologies, innovations or fields of knowledge. Much of the tools employed in the Labs are related with different social dynamics that have occurred during the lab stages. Some of these tools are needed for establishing connections with people, exploring synergies between participants, listening to participants, helping them to work collaboratively, building social capital, etc. The setting up and development of the SocKETs Labs employed many tools oriented to ice-breaking, listening, brainstorming, idea clustering, collective reflection, consensus making, building future scenarios, prototyping or experimenting among other techniques. All of these "soft technologies" are widely used and known in the literature of co-production, social innovation and Responsible Research and Innovation (RRI) (Edwards-Schachter, 2018; Murray et al., 2010; Owen et al., 2021; Voorberg et al., 2015) to cite a few examples.

In particular, several projects funded by the EC during the last years around RRI such as RRI Tools (https://rri-tools.eu/search-engine), New HoRRIzon (https://newhorrizon.eu/rri-ex/), Sparks (https://www.ecsite.eu/sites/default/files/sparks_toolkit.pdf) or PRISMA (https://www.rri-prisma.eu/rri-toolkit/) have produced significant catalogues and toolboxes that can be easily accessed and used by researchers and technologists that want to promote societal engagement around particular innovations and technologies. These tools are far from being highly elaborated nor complicated. Most of them have a limited set of instructions and requirements that confer to them a really practical hands-on approach. In this regard, we encourage future and curious practitioners of societal engagement to start with simple tools in these participatory process as this is the best way to familiarize with them. It is important to not overburden participants, managers or facilitators with complex dynamics and exercises, but it is also important from a facilitation perspective to gain confidence with particular tools to start using new ones. Tools are intrinsically intertwined with facilitation skills and facilitation

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experience, and this should be stressed when implementing new tricks, tools or techniques into the Lab.

In this regard, tools commonly known by the lab teams that are in charge to facilitate societal engagement activities should be the primary ones to be chosen at first stages. Of particular importance is to understand the contexts in which these processes will be developed as particular tools could be tricky to develop under particular circumstances (cultural particularities that shaped social capital, too formal environments, etc.). The context many times delineates what it is possible and what it is not in a societal engagement process, and this is why SocKETs Labs started with studying the cultural particularities of the innovation ecosystems where they wanted to act. This diagnosis depicted important information for setting up the Labs and their activities and setting up the ground for the experimentation stage and choosing, hand in hand with participants, the most appropriate tools.

4. Anticipation, flexibility and responsiveness as guiding principles

Participatory processes cannot by controlled nor steered by lab teams to a particular direction when participants are not willing to reach that point. These processes demand flexibility and a high degree of anticipation to prevent and to react to unexpected issues that can occur at any time. Most of the Labs have been struggling with COVID-19 mobility restrictions (DTI, CRN, AHHAA, CRA) but at the same time have been able to provide virtual or hybrid solutions to deal with these challenges. In addition, most of the Labs reported the generous amount of time that was demanded to plan the workshops and different events into the lab. Recruitment processes were in some cases really challenging and commonly outdated planning's made at the beginning of the experimentation stage. These unexpected events and efforts demanded a high degree of flexibility to anticipate and reorient already planned strategies for the labs.

Participatory and experimentation work enabled by the SocKETs Labs also demanded responsiveness by facilitators and managers to attend demands or petitions posed by participants. In this regard, most Labs had to deal with challenges brought to the Labs by participants as well as other issues that were not included in the Lab's agenda. Deciding "what is into the lab" and "what is out of the lab" (Tabarés Gutiérrez & Bierwirth, 2019) demands anticipation, flexibility and responsiveness. Dealing with different interests from stakeholders, tensions that can arise between participants, expectations that could not be met by the Lab and other issues related with the process itself required of anticipation, flexibility and

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responsiveness at the core of the Lab management. At the same time, these principles cannot be converted into a "blank check". The objectives of the lab should be ambitious and must be pursued since the beginning of the experimentation, though the lab team have to deal with unexpected events and non-foreseen petitions and interests from lab participants. Lab teams should be able to provide "carrots and stick" to participants, but at the same time reinforcing the sense of group identity and collective motivation that can help to guide the group to a particular desired direction based on group-consensus.

5. Balancing stakeholder heterogeneity

Designing, creating and maintaining a balance with different stakeholders of the quadruple helix approach (academia, business, public administration and civil society) (Leydesdorff, 2012) is of vital importance for the heterogeneity of the lab, but it is also a reason for its sustainability and success. Many of the participants that took part in SocKETs Labs appreciated the great opportunity to have a diversity of stakeholders in a single room, which cannot be found elsewhere (CRA, TECNALIA, AIRI, CRN). This heterogeneity is also of utmost importance for balancing interests, drivers and motivations that can play an important role in the way that Lab work is pursued and carried out. It is important to involve public and private actors to counterweight its interests and motivations, but also CSOs or associations that can offer alternative visions that are commonly overlooked in expert groups and decision-making public processes.

Some of the Labs dealt with market-driven interests of industry for showcasing their KET-based innovations in a technology-push driven communication (DTI, AIRI). Others, in contrast, experienced a major interest of actors towards public awareness around societal challenges (CRA, CPN).

It is important to stress that having different interests and motivations into the lab is what defines a social lab, as this is intended to represent the complexity and fragmentation that characterize today's society (Hassan, 2014). Preparing the ground for hosting different voices and interests into the same space is critical for the value that can be offered to participants throughout the setting up of the Lab. This work of balancing different opinions, interests and motivations is critical for the success of the lab, but also how to deal with different interests brought to the lab by a variety of stakeholders (Tabarés Gutiérrez & Bierwirth, 2019).

Of particular importance, it is to include CSOs, associations, think tanks, citizen platforms, foundations and other kind of actors representing civil society that usually are not included in

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R&I debates. They usually have less resources to take part in these events in comparison with big companies, public administrations or educational institutions, they are not usually in the same networks, and they are not used to take part in these kind of formats with common R&I stakeholders. They are also generally far from industry and for this reason it is important to involve them.

6. Early citizen contextualization

The last recommendation that we want to emphasize in this document is that when promoting societal engagement activities is of utmost importance to have a direct connection with citizens associations or organizations that work directly with citizens. Most technological partners involved in the experimentation lacked these connections and were forced to establish synergies with other associations or organizations to access citizens (AIRI, TECNALIA, DTI, AHHAA). This was commonly done at later stages in the process and shaped the way that the Labs engaged with citizens.

Those organizations that already had those connections were able to mobilize them earlier in the process than others. This is one of the main shortcomings that advanced industry face when it aims to promote societal engagement. Its distance with citizens and CSOs is a significant barrier that usually shapes the way that the engagement process is delivered. Moreover, some industries usually have different interests than public society and they try to frame these processes in ways that are not productive for having meaningful societal engagement processes (Blok & Lemmens, 2015).

Citizens should be involved early in the process for incorporating their voices into technology development, to call into question potential implications of technology and innovation, as well as for advancing future technologies with great societal transformation power. In this regard, it is important to pay attention to appropriate timings and feasibility of these engagements (Willems et al., 2021). To this aim, familiarizing societal engagement practitioners with the context at play can help to understand what kind of engagements can be facilitated and what of these could be out of scope.

Most of the Labs spent a considerable amount of time defining what kind of citizens should be the ones to be involve in their labs and this took much more time than initially planned. For instance, in eHealth technologies patients were some of the primary publics, but the development of the Lab lead to nurses as another important public for societal engagement. In the case of industrial automation, students were in the agenda from the very beginning, but

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unemployed people and retired people raised during the process as a very important public for societal engagement in the last stages of the Lab.

Another of the common themes that have been observed in the development of the labs is related with the need of thinking in promoting societal engagement with an intergenerational solidarity vision.,. Innovation is a window to our future and KETs researchers can provide some guidance about what can be achieved or what can be not achieved in future generations. Nowadays, society faces a great number of challenges from climate change to poverty, massive migration or a potential third world war. These challenges will demand R&I to be solved, but also political will and societal engagement that can support, legitimate and empowered dramatic socio-technical transformations (Robinson et al., 2021; Sachs et al., 2019). These problems demand of systemic thinking for taking into account perspectives from older generations that have lived through similar experiences in past years (and are a growing majority in aging western societies), but also from younger generations that will suffer climate change impacts. We face a major need for promoting sustainable and responsible development and this demands of intergenerational solidarity that cannot compromise the future of next generations.

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