SOCKETS

SOCIETAL ENGAGEMENT
WITH KEY ENABLING TECHNOLOGIES

co-creation brief

Engaging innovation eco-system communities to encourage transitions CIRCULAR ECONOMY IN BUILDING AND CONSTRUCTION

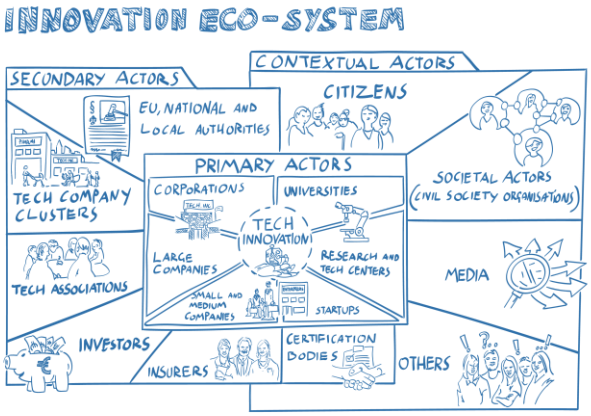


SOCKETS (SOCIETAL ENGAGEMENT WITH KEY ENABLING TECHNOLOGIES)
HAS RECEIVED FUNDING FROM THE EUROPEAN UNION'S HORIZON 2020
RESEARCH AND INNOVATION PROGRAMME UNDER GRANT AGREEMENT NO 958277

TEKNOLOGIRÅDET DANISH BOARD OF TECHNOLOGY · VU · Athena Institute Connecting science and society for a better tomorrow · Airi ASSOCIAZIONE ITALIANA PER LA RICERCA INDUSTRIALE · tecnalia Inspiring Business · DANISH TECHNOLOGICAL INSTITUTE · ecsite EUROPEAN NETWORK SCIENCE CENTRES & MUSEUMS · MUSEO NAZIONALE SCIENZA E TECNOLOGIA LEONARDO DA VINCI · AHHAA · CRA

SOCIETAL ENGAGEMENT TO CO-CREATE INNOVATIONS

Early and continuous societal engagement is the key to improve quality, desirability, and sustainability of innovations.
With this belief, the SocKETs project held six Labs across Europe to explore and co-create inventive solutions based on Key Enabling Technologies, in three application fields: circular economy, eHealth, industrial automation.
We used a stepwise approach consisting of a mapping of innovation ecosystem made by desk analysis and interviews, followed by a series of workshops and interactions in-between:



- ✓ **Co-design workshop**: explore the innovation ecosystem and design initial technology scenarios along the building and construction value chains, with representatives of business, innovation and research
- ✓ **Maturation & prototyping workshop**: discuss environmental, social and ethical aspects and integrate them into the identified tech scenario, with business, innovation, research, local authorities and civil society organizations
- ✓ **Celebration workshops** (2): deepen the technology scenarios in everyday life, by discussing with citizens from two different social housing neighbourhoods, one old (with restoration issues) and one recently built (with applied KETs).

The Italian Lab lasts for about 8 months, engaging over 70 stakeholders, of which 28 citizens.

SocKETs Italian lab:
Discuss ideas, visions, and strategies on the application of advanced technologies in urban planning, buildings design, renovation, and restoration.

WHY THIS SECTOR

We chose the building and construction sector due to its large contribution to waste, emissions, use of non–renewable resources, social impact, and limited use of new and emerging technologies. It also offers relevant opportunities such as:

- large sectoral policy investments on sustainability aspects;
- key role for advanced materials, manufacturing systems, such as ICT, IoT, AI, blockchain;
- increasing need for human-centred, user-driven innovation.

The goal of the Lab was to:

- co-create innovative solutions, prototypes and alternatives aligned with societal need and challenges;
- facilitate co-creation among innovators, researchers, procurers, policy-makers, and citizens.

Participants have been engaged/recruited thanks to facilitators' networks. Selected participants helped identifying new connections: industry ones gave links to other professionals in the sector, and NGOs helped to involve citizens.
During the Lab we used different societal engagement methods, including the Walt Disney, I like I wish What if, World Café, online survey, and Importance/Difficulty matrix.

OUTCOMES

We developed two value chain scenarios on KETs deployment, agreed amongst all stakeholders involved as a valid method to define shared strategy for growth, innovation, and sustainability:

- New ways of organizing and living cities and neighborhoods;
- Key industrial value chains and their interaction.



Italian SocKETs lab

The new technologies identified cover the manufacturing phase, i.e. enhancing industrialisation and automation with AI and additive manufacturing or 3D printing, the management phase, increasing durability thanks to advanced materials and digital twins, and the remanufacturing or demolition phase, improving materials reuse and recycling with adaptive machines, IoT integration, and the use of robots for selective demolition.
A strong and constant interconnection between value chain stakeholders is needed to promote circular economy approaches, with technologies such as Building Information Modelling, Internet of Things, Blockchain, and smart tags based

What stakeholder say:
«Circular economy is too often connected to recycling, which should be instead the last option. Better approaches, such as reuse, sharing and service-as-a-product should be promoted as new business models, because when there is an increased producer responsibility on end-of-life then there is also increased potential possibilities for reuse». (SocKETs interviews)

Listen our stakeholders on the SocKETs youtube

OUR RECOMMENDATIONS ON SOCIETAL ENGAGEMENT

- Anticipation & flexibility to manage multi-stakeholder complexity
- Balancing stakeholder heterogeneity
- Context analysis, above all regarding citizen participation (specific enough to affect the decisions of actors)
- Set the objective: themes, level of impact, innovation eco-system stakeholders
- Create a safe space
- Design and facilitation matters
- No right or wrong tools, only tools that are useful

Read more on our Guide on tech Innovation and societal engagement!

on RFID allowing data storage, analysis, sharing in real time.

LEARNINGS ON KETS DEPLOYEMENT IN THE SECTOR

- **Strengthen cooperation** of the stakeholders along the innovation eco-system: research, industry, professionals, local authorities.
- **Support SMEs and artisan** in the technological and sustainable transition, by training and incentives to adopt new solutions.
- **Improve info and data management** on the material flows of resources along the entire supply chain.
- **Favour synergies with other value chains** to reach proximity of resources, integration of services and circularity (e.g. new materials supply, reuse of construction waste, etc.).

LEARNINGS ON SOCIETAL ENGAGEMENT

- Civil Society organizations, and advocacy groups could help to recruit citizens, and to offer them a closer and familiar space to hold activities.
- Industrial associations, technology and innovation clusters, might be easier to engage, and could provide more relevant insights compared to single companies, as they have a broader view of the sector
- Science museums are key partners in terms of design, recruitment, and facilitation of the participatory process.
- Knowledge and interest of lay people might be limited, and thus they could be unable to react to specific topics, and lack motivation, but once engaged they could bring genuine and new insights.

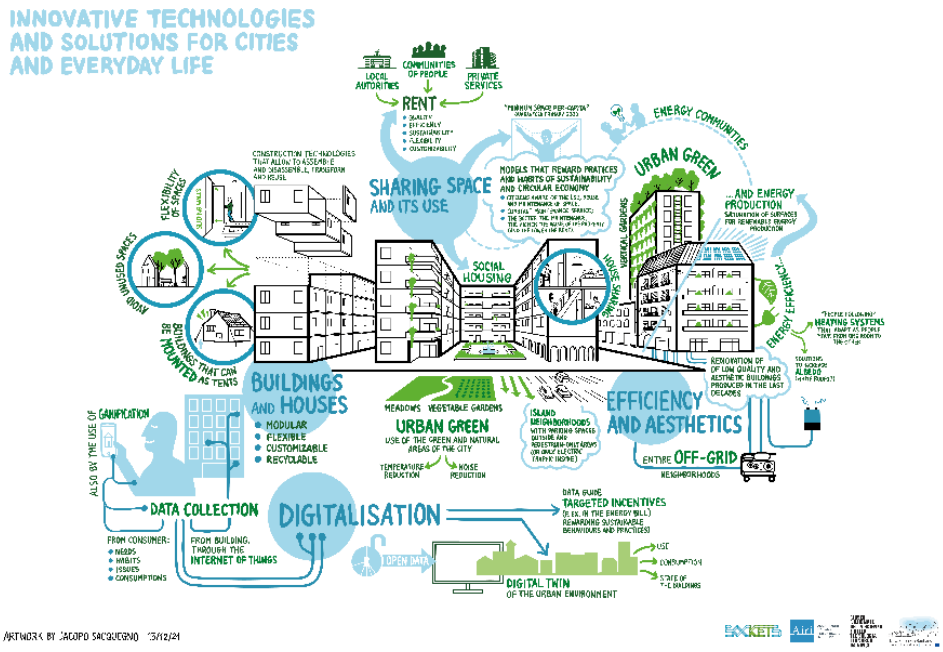
- Innovation scenarios created and developed along the co-creation process, using graphic recording techniques, helped in many ways: to offer a visual, easy to understand summary of information to participants; to grant continuity and consistency of the different activities carried out; to facilitate dissemination and attract participants in the various workshops.

CONCLUSIONS

The impact of innovation in Italy can be huge. There is an interest in the topic but still little practical application, with most of the cases of innovative technologies use being at an experimental stage. To trigger the change, sharing and networking of operators to active synergies and start innovation processes are fundamental. The Lab helped creating a network of national players interested and active in the issues of technologies for circularity, which will take action to promote these proposals and strategies at various levels.

Main authors of the brief:

Andrea Porcari, Olmo Guagnetti
Airi – Italian Association for Industrial Research
www.airi.it LinkedIn Twitter



Example of an innovation scenario developed with stakeholders and citizens during the SocKETs Italian lab

SOCIETAL ENGAGEMENT
WITH KEY ENABLING TECHNOLOGIES

CLICK TO READ MORE

Our societal engagement guide

Our Let's tech together online exhibition & game

Our video interviews with stakeholder

sockets-cocreation.eu