



Operationalising RRI through CO-VALUE pilot experimentation at Alicante Science Park

1. Introduction and problem statement

European policies have increasingly emphasised on societal relevance in research and innovation¹. Yet translating the normative ambitions of Responsible Research and Innovation (RRI) into reproducible operational practice (particularly within company-led innovation and knowledge valorisation) remains challenging. In many EU innovation ecosystems, citizen involvement is still limited to regional policies connected with smart specialisation strategies or to local consultative exercises with little impact on design decisions. Such approaches risk becoming merely symbolic, extracting information from participants without generating shared value, and reinforcing existing imbalances of power in defining problems and distributing benefits.

The CO-VALUE project (Horizon Europe) has set out to test a contrasting model: “co-valorisation”, an approach that treats citizen participation as an integral, decision-relevant element of knowledge valorisation. CO-VALUE explicitly aims to operationalise RRI principles in everyday innovation workflows so that citizens are not merely informants or end users but active co-creators whose inputs shape product, service and governance choices. Alicante Science Park (PCA), with the guidance of Stickydot (a Brussels based company with expertise on multi-stakeholder engagement in research and innovation), led the experimentation of five pilots (involving 7 actors) in Alicante that applied a common methodological framework, documented outcomes and tested incentives, governance protocols and facilitation models that enable genuine co-creation between companies and citizens.

2. Research questions

The experimentation was guided by three closely connected research questions.

1. **Legitimacy and fairness.** Under what governance arrangements does citizen involvement in company innovation move beyond simply providing

¹ See Commission Recommendation (EU) 2024/736 of 1 March 2024 on a Code of Practice on citizen engagement for knowledge valorisation. Official Journal of the European Union.

feedback and become genuine co production, where citizens have real influence over how problems are defined and how benefits are distributed?

2. **Institutional engagement and sustainability.** How can companies and intermediary organisations, such as the Local Development Agency of Alicante and the industrial association of Atalayas industrial area, be meaningfully involved so that the process generates tangible value for them? In particular, what conditions are required to ensure that co creation produces results that are useful for their strategic objectives, thereby guaranteeing the continuity of the model and enabling future exercises beyond the lifetime of the CO VALUE project?
3. **Evaluation and impact.** Which indicators and documentation practices make co production visible, credible and useful for companies, intermediaries and policy makers, without reducing complex social learning processes to narrow and performative metrics?

These questions informed the selection of pilots, the design of facilitation practices and the systems used to measure and document outcomes in each case.

3. Empirical setting and method

3.1 Empirical setting: pilot portfolio and ecosystem actors

The experimentation took place in the premises of the Atalayas industrial area and in a building of the University of Alicante located in the city center. PCA coordinated five pilot projects with companies representing diverse sectors and technological profiles: *Aguas de Alicante* (water utility/digital services), *InferIA* (AI/data services), *Golden Owl* (digital services), *Weitec* (precision agriculture/IT), and a joint pilot on circular economy involving the spin-off companies FYCH Technologies (recycling) and Solublion (sustainable plastics), with the support of EGM Atalayas (industrial area management). The portfolio intentionally balanced circular economy and emerging (data) technologies to test methods across distinct industries.

Key intermediary partners included a company with expertise on multi-stakeholder engagement in R&i from Belgium *Stickydot* (method design and leading experiments), *ImpulsAlicante* (local development agency) and the entity managing the industrial area EGM Atalayas. This multi-actor configuration mirrors the quadruple helix model and provided institutional pathways for potential uptake.

3.2 Research design: participatory action research and mixed methods

CO-VALUE followed a participatory action research logic: pilots were simultaneously experimental interventions and sites of knowledge production about co-creation practice. The methodological toolkit combined:

- **Workshops and co-creation sprints:** three-phase sequences (exploration, co-design, validation) delivered in mixed citizen-company sessions.
- **Decision logs:** structured documentation that recorded the concrete design, governance and commercial decisions that were altered as a direct consequence of citizen input.
- **Playbooks and artefacts:** facilitator playbooks, consent scripts, persona maps, scenario cards and prioritisation matrices created during workshops were collected as operational outputs.

3.3 Selection and recruitment of citizens

Participants were selected to ensure diverse lived experiences relative to the pilot challenges (age, socio-economic background, education, neighbourhood). Recruitment was mainly done with a professional company combined with an open call done by EGM Atalayas among its companies. Participants were rewarded with 40€ for each workshop of 2'5 hours.

4. Early findings (interim patterns)

The experimentation produced several interim patterns that clarify how RRI can be put into practice and sustained within a local innovation ecosystem. These findings show that putting RRI into practice in company contexts is both possible and beneficial. However, it requires early engagement, professional facilitation, clear governance commitments and a realistic focus on the types of innovation challenges where citizen co creation can genuinely add value.

4.1 Strong local acceptance, conditional on professional design and facilitation.

There is clear and sustained acceptance of the co creation process among the municipality and other local intermediaries, including the EGM Atalayas. Their support, however, depended on the process being professionally designed and executed. In our case the co-creation methodology by Stickydot and the role of the facilitation team were decisive.

4.2 Companies value direct engagement but need space for conflict.

Spin offs, startups and SMEs generally welcomed the method because it helped them design products and services better aligned with citizens' needs. The workshops produced practical design inputs that firms could act upon. At the same time, we observed a tendency during workshops to converge too quickly on superficially comfortable solutions. To avoid easy agreements and surface genuine trade offs, most pilots followed a three-workshop cycle, but in the cases of Aguas de Alicante and Weitec a fourth workshop proved necessary.

4.3 Greater usefulness when the product directly affects citizens.

The process yielded the most immediate and tangible benefits for companies that were designing products or new applications that directly affected daily life. For

example, the applications for saving water consumption of Aguas de Alicante, InferIA's product focussed on explainable AI and consent design, and Weitec's urban surveillance application required detailed public acceptability work. By contrast, the circular economy pilot was more process oriented, and for FYCH and Solublion the workshops were less actionable.

5. Policy implications

The experience in Alicante leads to several practical policy implications for regional and local innovation systems. They suggest that citizen co creation at company level is viable and valuable, but its long term sustainability depends on institutional support, appropriate funding mechanisms and continued professionalisation of facilitation practices.

5.1 Citizen engagement at company level is feasible and productive

The experimentation demonstrates that it is possible to establish structured citizen engagement processes at the micro level, that is, directly within companies. When the process is professionally designed, properly facilitated and carefully documented, it produces tangible results. Tracing decisions and recording how citizen input influences product or service design increases credibility and effectiveness. Policy frameworks should therefore recognise that meaningful participation does not need to be confined to large public research projects; it can operate successfully within SMEs and startups when supported by appropriate governance and facilitation structures.

5.2 SMEs value structured co creation

Even small companies appreciated the process. They reported that structured interaction with citizens helped them clarify needs, detect blind spots and refine their value propositions. For all firms (except Aguas de Alicante), this was the first time they had engaged citizens in a systematic and moderated setting rather than through informal feedback or market testing. Public policy should therefore incentivise SMEs to adopt such structured engagement models, recognising them as part of innovation support services rather than as optional corporate social responsibility activity. This process provides and additional sources of competitive advantages with better designed processed or products using the strength of the EU civil society.

5.3 Sustainability beyond project funding remains uncertain

A critical open question concerns financial sustainability. Each workshop costs approximately one thousand euros, and a full cycle of three to four workshops may cost between three and four thousand euros. It is not yet clear whether companies will be willing or able to cover these costs independently, or whether citizens will consistently contribute without compensation. There are other costs of the professional facilitator, the recruitment agency, the venue, overall management, a catering for the short break, etc.

If citizen co creation is to become a permanent feature of innovation systems, funding models must be identified. This may include regional innovation vouchers, municipal co funding schemes, integration into incubation services or partial cost recovery models. At the same time, the process itself must become cheaper to be more efficient and cost effective in order to remain viable after the end of grant funding.

5.4 Reinforcing the democratic link between civil society and innovation

Structured citizen engagement strengthens the connection between public research and innovation policies and the citizens. By involving citizens directly in the shaping of products and services, potential conflicts can be addressed early. This is particularly relevant in sensitive areas such as the use of personal data, artificial intelligence and green economy transitions, where mistrust or misperceptions can generate resistance. Participatory co creation therefore functions not only as an innovation tool but also as a mechanism for preventing conflict and building social legitimacy.

6. Limitations and future work

Although the pilots delivered valuable lessons, several limitations remain and shape our plans for further operationalisation. First, the experiments were bounded by time and project resources, which constrained some interventions. To increase impact, we are removing early-stage preparatory sessions and testing a more direct route into co creation, reducing the number of preliminary meetings and entering sooner into co design. This shift aims to lower costs while preserving rigorous facilitation and documentation.

Second, we have expanded the participant profile to include in the future not only established startups but also entrepreneurial projects that have not yet incorporated as companies. This extension recognises that pre company initiatives based on science and innovation can derive even greater benefit from citizen engagement when shaping their minimum viable product. The formal request to include pre entrepreneurial projects in the 2026 pilot call explains this rationale and the expected comparative learning value.

Third, financial sustainability is unresolved. Each pilot with three to four workshops amounts to approximately €3,000 to €4,000. It is not yet clear whether firms will cover these costs. Future work will test a range of business models and funding sources and will experiment with streamlined facilitation formats to reduce per workshop cost while maintaining quality.

Fourth, longitudinal evidence on adoption, firm competitiveness and social equity is still pending. We will carry out follow up evaluations to track whether co created solutions progress to market, to assess their commercial performance and to measure social outcomes such as trust and civic engagement. These evaluations will inform whether early entry into co design and the inclusion of pre company projects increase the probability of sustainable uptake.

Finally, the process has shown important civic and governance benefits. Structured citizen engagement strengthens the link between civil society and research and innovation policy, operationalises the quadruple helix designs, creates transparency around sensitive issues like data use and privacy, and helps to avoid or resolve misperceptions about green economy initiatives. In practice, early and transparent negotiation of governance safeguards reduced tensions in data intensive pilots and improved public acceptability. Future work will therefore continue to emphasise the design of auditable governance measures so that these democratic benefits are consolidated as a lasting feature of the local innovation infrastructure.