Prototyping Innovation Policies with(in) cities

Innovation Area:
Reimagining Deep-Tech

Rotterdam, Netherlands



How does "prototyping..." work?

This City Case Description is the outcome of a policy prototyping exercise within a city ecosystem. Once the ekip research team has explored a policy area and its connection to cultural and creative industries (CCIs) and innovation, we ask: what would this mean in a local city context?

Together with local stakeholders, we test how a draft policy recommendation might stimulate innovation. Using Portfolio Sensemaking, stakeholders simulate an innovation portfolio, analyse the strengths and gaps of the local support system, and identify what resources are needed to realise the portfolio.

Rotterdam & Deep Tech

Rotterdam is considered as a forward thinking city. It is a city known for its architecture, and also for experiments and innovation.

Deep-tech is increasingly recognised as a key driver of innovation, economic competitiveness and societal transformation. Rooted in advanced scientific and technological breakthroughs, deep-tech has the potential to address complex challenges in areas such as sustainability, digitalisation, healthcare and industry.

For Rotterdam, deep-tech presents opportunities to build on existing strengths, including its knowledge institutions, entrepreneurial ecosystem and international networks.

This report explores the relevance of deep-tech within the Rotterdam ecosystem and reflects on discussions held during the Upstream Festival, where stakeholders examined the relationship between deep-tech, the cultural and creative industries, and the role of public value and human-centred innovation within open innovation ecosystems.

> *"In deep tech nothing is designed or developed for our use. But we – artists, designers and developers – are challenging and developing deep tech products and services for new use. And that's fun, but also huge value for innovation."*



Portfolio sensemaking

Portfolio

THE PUBLIC VALUE, HUMAN PERSPECTIVE AND VALUES; *OR*:
WHERE THE DOMAIN OF DEEP TECH AND CULTURAL AND CREATIVE INDUSTRIES INTERSECT

Main idea / Scope

The draft portfolio explores the intersection between deep-tech and the cultural and creative industries (CCI), as well as the opportunities this creates within open innovation ecosystems.

What can both domains can gain from one another? How might EU innovation policy strengthen these connections? As the discussion evolved, public value, human perspectives and societal values emerged as central themes. The workshop highlighted the importance of ensuring that technological innovation not only drives economic competitiveness, but also responds to societal needs and creates meaningful value for people and communities.

The ecosystem

There are two systems that needs to be integrated: a deep tech system and a CCI-ecosystem. The deep tech system is international and this development is not dependent on local key figures. Their resources are limited and not accessible. There are no programmes, workshops, space, infrastructure that is designed to be accessible. They are mainly accessible through contacts and networks and for own use only.

Innovation Character

A lot in this innovation area is still uncertain and needs therefore to be further explored. Clarity and direction can come from mission-oriented innovation: policy, frameworks and missions.



> *We need deep-tech actors to recognise the value of engaging with the CCI sector. When we co-dream a few steps ahead we see the need of developing ecosystems at European level and city scale to make sure CCI's are structurally involved and embedded in innovation, policy and technological development.*



Intertwining the tremendous potential of deep-tech with the inherent nature of the Cultural and Creative Industries offers a unique opportunity for mutual positive contribution. CCI are accustomed to operating in an environment where impact often takes time to be perceived. It frequently manifests as intangible value, which can challenge conventional recognition but whose profound social and economic contribution, particularly through extensive spillover effects across various layers of our system, is undeniable.

This intrinsic understanding of long-term value generation aligns closely with deep-tech's own paradigm. As a result, mutual benefits arise: on one hand, advanced technical capabilities can significantly accelerate CCI activity by enabling them to deliver their innovative purpose more effectively, especially given that they often fall behind in infrastructure investment and digital upgrading (Hsu et al., 2023).

On the other hand, CCI possess the unique ability to translate complex deep technologies into relatable, engaging, and socially relevant applications, thereby accelerating public acceptance and adoption across diverse sectors and social niches through human-centred design and compelling storytelling.

This positions CCI not merely as beneficiaries, but as essential collaborators that can act along with deep-tech towards solutions serving broader human and societal goals, fostering innovation across various ecosystems to reinforce a more competitive society and Europe (DTTI, 2025).

Analysis

WHAT IS NEEDED IN THE INNOVATION SUPPORT SYSTEM?

1. Artists as technological and conceptual innovators

Artists and scientists are increasingly collaborating in experimental constellations and pushing the boundaries of these. Artists continuously question technology regarding humanity, ethics, and use. Exemplary projects demonstrate that art can help rethink systems (logistics, borders, European context). In this context, creativity is viewed as a fundamental innovative force, not as an 'extra layer' .

2. AI and the shift in creative work

Proposition: AI changes work processes rather than completely replacing jobs. Artists see more opportunities than threats and hope to use AI to work faster and more effectively. At the same time, AI remains limited: after all, it currently works with averages and lacks taste, intention, and context. Key point of tension: AI is built on human creation without clear feedback on ownership.

3. Tension between systems: KPI's vs experiment

Tech and policy work with KPIs, end results, and MVP logic (Minimum Viable Product), while artists work with process, experiment-ation, and open outcomes. These worlds can clash, but they can also reinforce each other if KPIs are relaxed. Innovation arises precisely in unoptimized space.

4. Europa, policy and systems

Issues such as European identity and regional differences play a role in innovation policy. A risk is that standardization can suppress local creative diversity. Alternative: a decentralized approach via cities as a scale level. Cities are seen as ideal innovation ecosystems: scalable yet human.

5. Fair pay and fair practice for artists and designers

Artists are often underpaid and work systematically without compensation. They are occasionally asked for advice or involved in discussions, but have little decision-making power.

Ideas:

• Structural income, for example during artist in residence-programmes;

• Percentage on ideas or spin-offs; • More/better support in administration, grant applications, and business.

Major problem: artists often lack institutional support without losing their autonomy.

6. Knowledge, open source and ownership

Big Tech companies often keep knowledge, software, and patents closed. The opportunity lies in open source approaches or public investments in creative Intellectual Property. Patents are expensive and difficult for individual creators to defend. Idea: cities or public institutions could co-finance or protect creative ownership.

7. Education and creativity

Art and creativity are still insufficiently integrated into education, even though they should be recognized as basic skills alongside analytical subjects. The combination of art, mathematics, and playful experimentation strengthens problem-solving abilities and is essential for innovation.

Conclusions

According to the participants the biggest challenge is not the lack of ideas, but the lack of a structured system in which artistic, cultural and public values are equal to decisions in policymaking and technological development. Therefore the following is needed:

1. Budget & manpower

A fair support system for CCI's for their position in this non-temporary system. So no more short term investment in pilots, one-offs and experiments, but structural, trust- and value based and long term funding.

2. Frameworks

Structural frameworks and a non-temporary system with a fundamental collaboration between art, tech and policy. With shared language, shared currencies and equal positions.

By running this portfolio case, it shows the important power and necessity of:

- Arts and culture as structural engine for innovation;
- The leverage of AI for creative output and experiment;
- Ecosystems in European cities;
- New models for a fair support system for CCI's;
- Open source and public investment in creative approaches, development and knowledge; A
- consistent and supportive system for art in education and innovation policy.

Next steps

The outcomes of this workshop will contribute to the development of EKIP policy recommendations and provide insights into how cities and regions can better support creative and innovative ecosystems.

Who was there?

A BROAD MIX OF STAKEHOLDERS CO-CREATED THIS CASE

INDEPENDENT ARTISTS AND DESIGNERS

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Our methods

THE INNOVATION PORTFOLIO POLICY CANVAS

The Prototyping Workshop Methodology and the Innovation Portfolio Policy Canvas guide local stakeholders to analyse their local ecosystem, make an inventory of actors and resources, identify and create a potential innovation portfolio and analyse their local innovation support system.

THE OPSI MODEL

The OPSI-model (Open Public Sector Innovation OECD) is adapted to analyze the innovation character of the policy area. Participants explore whether the policy involves new legislative measures or is more exploratory in nature, allowing for a deeper understanding of how the policy might influence the local ecosystem

THE LIEPT MODEL

The Lund Innovation Ecosystem Portfolio Tracking (LIEPT) model is a tool that provides a framework for tracking changes in innovation portfolios in ecosystems where impact and growth happen not in one organisation but in many. This relies on collaborative efforts by many stakeholders.

What is ekip

The ekip partnership funded by the European Commission consists of 5 universities, 4 consultancies, 4 creative and cultural organisations and 4 cities. Together we develop innovation policies for the cultural and creative industries in Europe. We do that in various ways: through research, consultations and interaction with people in the sector at policy labs and focus groups and assessments in city ecosystems.

Want to know more? Want to do it in your city?

Would you like to explore the topic of Deep Tech? Visit the ekip website, where you'll find relevant policy posters, presentations, videos, and articles.

You can even host your own session in your city! It's an empowering and insightful way to bring together local stakeholders across sectors and disciplines for a focused discussion on a topic of shared importance. The ekip method and approach are open for anyone to use including a Facilitator's Guide and templates available in the ekip Knowledge Bank under *Tools and Methods*.

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Disclaimer:
Each City Case Description reflects the views of workshop participants. It is a perspective from one city context, intended to inspire and ignite action

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