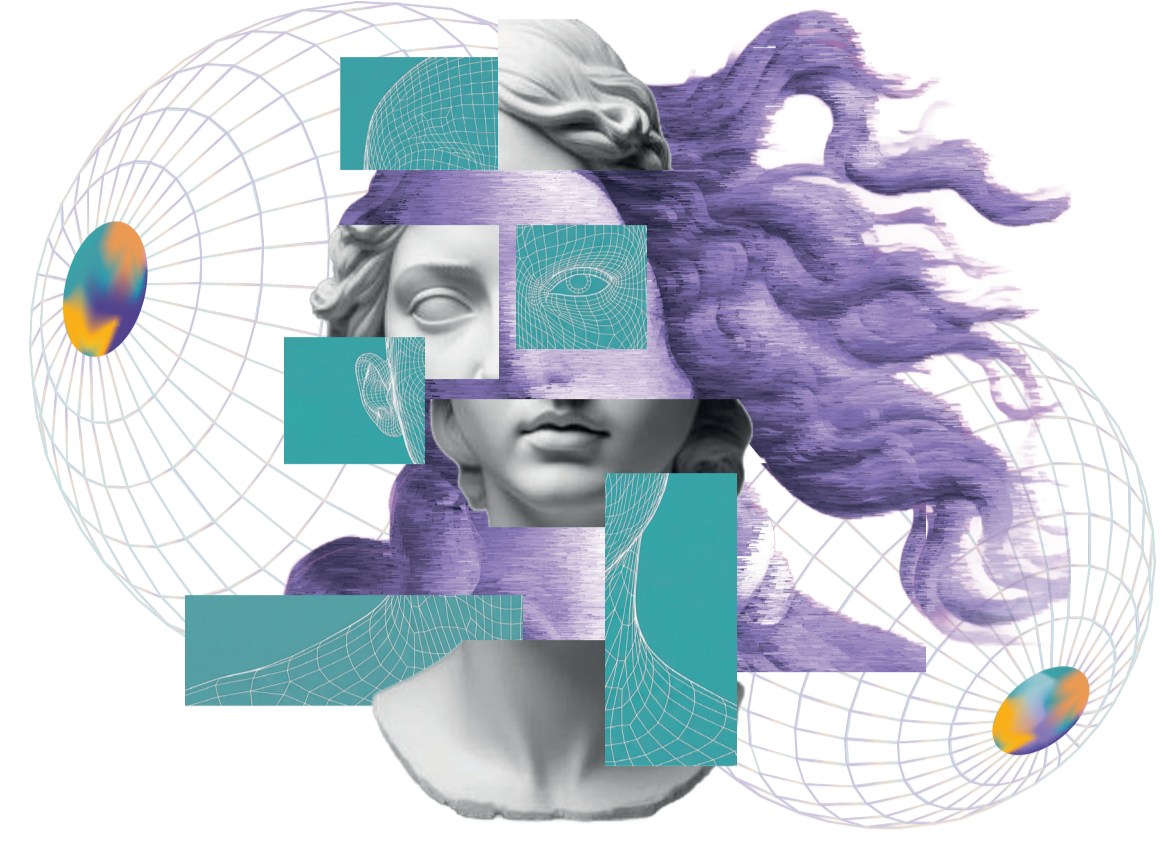


Reimagining deep-tech: what creatives make possible

#deep-tech innovation #technological competitiveness #digitalisation #AI #LLMs #ML #quantum computing #advanced manufacturing #VR #AR #nanotech #biotech #blockchain #corporate engagement #legislation development #democratisation of technology #cultural acceptance

01 BACKGROUND

The EU is increasingly positioning deep-tech as a strategic driver for future competitiveness¹, digital autonomy, and the capacity to address global challenges such as climate change, public health, and societal resilience². Rooted in advanced scientific and technological breakthroughs, deep-tech goes beyond incremental innovation, aiming instead at transformative solutions with long-term impact across industries and society³. At the same time, CCI play a fundamental role in the EU's socio-economic landscape, generating innovation, employment, and cultural value while shaping collective identities and social cohesion⁴. Their focus on intangible value, experimentation, and lasting societal impact makes CCIs particularly relevant collaborators in the development of human-centred technological futures, closely aligning with the deep-tech paradigm and opening opportunities for mutual reinforcement⁵. Advanced technological capabilities can support CCIs in expanding their impact and innovation potential, especially in a context where the sector still faces limitations in infrastructure investment and digital upgrading⁶. Combining technological innovation with cultural, social, and creative perspectives can foster more inclusive, meaningful, and competitive ecosystems, strengthening both economic prosperity and societal wellbeing⁷.



02 CHALLENGES

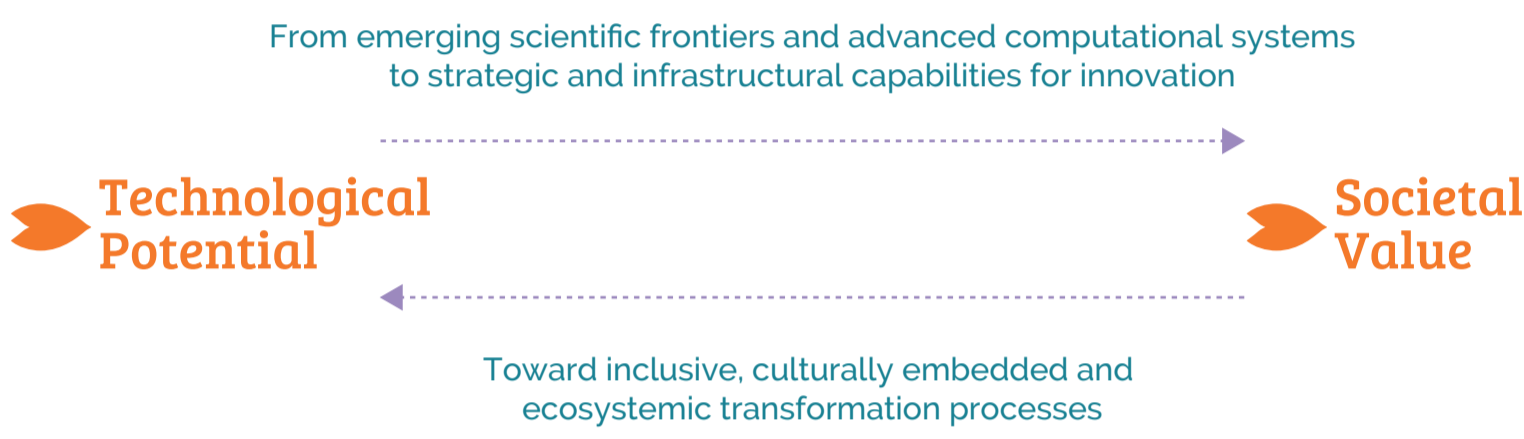
- **Fragmented innovation ecosystems:** Limited collaboration across creative, technical, and research communities constrains knowledge exchange and innovation scaling.
- **Interdisciplinary and skills gaps:** Differences in cultures and shortages in hybrid creative-digital competences hinder effective collaboration and technology uptake.
- **Unequal access to resources:** CCI stakeholders face uneven access to data, infrastructure, tools, and experimentation environments.
- **Limited inclusion in technology design:** CCI perspectives are insufficiently integrated into the development and governance of emerging technologies.
- **CCIs as adopters rather than shapers:** CCI sectors are too often positioned as end users rather than active co-creators of deep tech innovation.
- **Low understanding and trust:** Emerging technologies are often perceived as risks rather than opportunities due to uncertainty and limited societal awareness.

03 OPPORTUNITIES

- **Integrating CCIs in early-stage deep tech strategies:** Help define societal relevance and inform mission-setting and direction of emerging technologies.
- **Embedding CCIs in human-centred deep tech development:** Translate technical breakthroughs into human-centred propositions through co-creation and prototyping.
- **CCIs as enablers of deep tech diffusion:** Support uptake beyond specialist ecosystems through literacy, cross-sector applications, and societal engagement.
- **Shared innovation ecosystems for CCIs and deep tech actors:** Integrated environments enabling cross-sector collaboration.
- **Strengthening interdisciplinary capabilities and societal engagement:** Foster collaboration, communication of complex technologies, and societal reflection.

Why are deep-techs relevant for CCIs and society?

A two-way dynamic linking deep-tech capabilities and CCIs ecosystems, enabling culturally embedded and socially oriented value creation.



04 EMERGING CONVERSATIONS AMONG PRACTITIONERS

CCIs act as essential innovation translators, bridging the gap between technical capability and purposeful distribution by embedding a human layer that transforms Deep Tech into a reflective, intentional system shaped by society rather than one that merely shapes it.

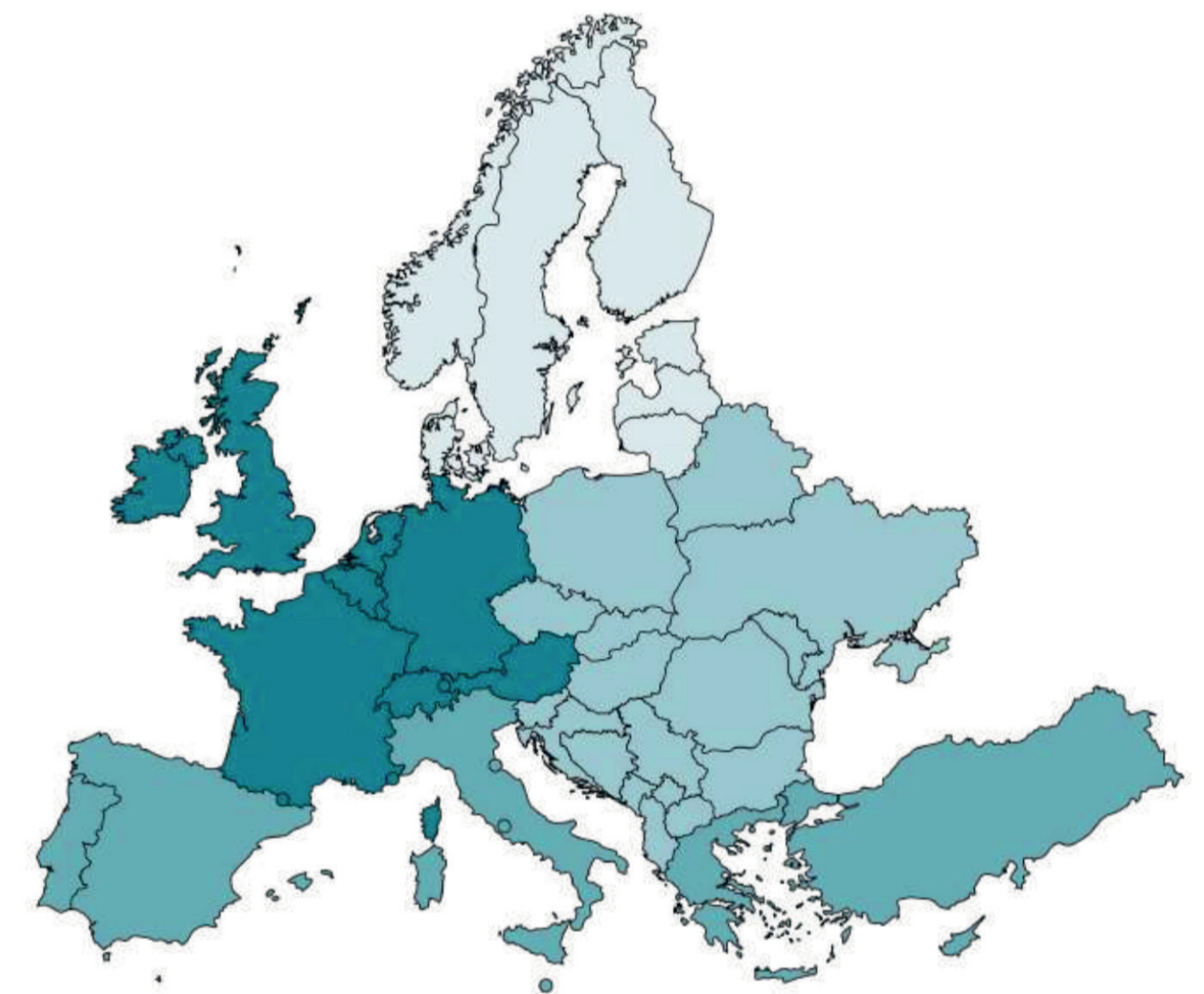
Most affected CCIs

- Book & Publishing
- Visual Arts
- Audiovisual
- Education

Rising conversation in the last 6 months



Which countries are most actively reimagining deep tech in CCIs?



The Regional Relevance showcases the most to least associated regions to the examined conversation cluster, determined by the origin of analysed profile. Top CCIs reflects the industry distribution of contributing profiles, displayed as percentages across the considered industries. Data regarding the analysed ekip community over the past six months is based on a mapping of conversations on research-access platforms and forms part of a broader mixed-method data collection framework.

KLISBio is an Italian biomedical startup that transforms raw silk into medical devices using advanced technology.

Biomedical Startup, Southern and Turkey

What role do artists and cultural institutions play in shaping advanced technologies? Could they be central to delivering innovation that truly serves the public interest?

Design University, Western

I guess that's the real problem, in a capitalist society, there's no incentive for LLM companies to have people who care about art train the machines. A world where these algos are useful for making beautiful art might be possible, but in "this" world the money rots everything.

Writer, Western

The challenges of working with artificial intelligence are not only technical, but also deeply human. They require people to reflect on their own assumptions, biases, and learning processes – which is both inspiring and liberating.

Library, Central and Eastern

05 EXISTING POLICY RECOMMENDATIONS

Centre for Quantum and Society | QDNL⁸

The Centre is a knowledge and co-creation hub dedicated to enhancing the societal value of quantum technologies. It aims to advance the understanding of the social, ethical, and governance implications of quantum developments while supporting their responsible integration across sectors. The Centre fosters interdisciplinary research on ethical, legal, and communication dimensions of quantum technologies and supports the development of tools and frameworks enabling organisations to identify and address both opportunities and risks associated with emerging quantum applications. Through structured stakeholder engagement, foresight activities, and awareness-raising initiatives, the Centre contributes to the development of shared visions and governance approaches aligned with societal values. It also supports mission-oriented innovation processes within the quantum ecosystem.

AI Factories⁹

AI Factories are dynamic ecosystems that foster innovation, collaboration, and development in the field of artificial intelligence (AI). They bring together computing power, data, and talent to create cutting-edge AI models and applications. They foster collaboration across EU, linking supercomputing centres, universities, small and medium sized enterprises (SMEs), industry, and financial actors. AI Factories serve as hubs driving advancements in AI applications across various sectors such as health, manufacturing, climate, finance, space, and more. AI Factories leverage the supercomputing capacity of the EuroHPC Joint Undertaking to develop trustworthy cutting-edge generative AI models.

Virtual Worlds Association | VWA¹⁰

Virtual Worlds (VW) is jointly driven by industry and academia, with a non-profit mission to develop an innovation ecosystem that enables the realization of virtual worlds, contributing to the EU economy and society. VW represent a transformative convergence of physical and digital realities, creating persistent and immersive environments in which users can interact, collaborate, learn, simulate, and engage in social, professional, and recreational activities. Enabled by three-dimensional and extended reality (XR) technologies – including Augmented Reality (AR), Virtual Reality (VR), and Mixed Reality (MR) – these environments integrate physical and digital elements in real time, supporting new forms of design, experimentation, and experience. Their development is increasingly enhanced by the integration of emerging technologies such as Digital Twins and Artificial Intelligence, which expand their capabilities for representation, analysis, and interaction. As socio-technical infrastructures, VW offer significant potential across a wide range of sectors, including industry, education, commerce, entertainment, and public services, fostering innovative ways of connecting people, data, and spaces.

06 CASE STUDIES AND RELATED INITIATIVES

DAFNE+ | Europe¹¹

DAFNE+ develops a decentralised platform for the fair and transparent distribution of digital creative content, enabling artists and content creators to explore new models of creation, co-creation, distribution and monetisation through blockchain technologies, digital tokens and NFTs. It provides intuitive tools that integrate with existing creative workflows, allowing creators to use these technologies without requiring specialised technical knowledge. The initiative also promotes community-based governance through a Decentralised Autonomous Organization (DAO), in which token holders participate in defining platform rules and content distribution mechanisms.

Digital Catalput | UK and Europe¹²

Digital Catalput is a deep tech innovation organisation. It accelerates the practical application of deep tech innovation to equip the UK to be future ready. It bridges the gap between industry, government, investors and academia to unlock commercial opportunities and create new market pathways for startups with pioneering solutions that drive sustainable economic growth. Enabling the organisations partner with to think differently, build resilience and achieve success by challenging purposefully and using expertises to equip them with the deep tech capabilities they need for the long-term.

Rare Effect | Lisbon¹³

The Rare Effect festivals represent Europe's first major crypto-art and NFT-focused cultural events. Primarily the events are designed to bridge the gap between the physical and digital art worlds while educating the public about decentralised technologies. The festival combines digital art exhibitions with live music, workshops, and panel discussions on Web3, blockchain, and AI. It explores society's relationship with art through the lens of crypto-economics. A key goal is to support grassroots cultural associations and provide a platform for both local and international artists to learn how to use emerging technologies like NFTs and crypto wallets.

AMSilk • Balenciaga | Germany¹⁴

A pioneering collaboration between biotechnology, manufacturing, and luxury fashion demonstrating the market readiness of advanced biomaterials. AMSilk's bioengineered silk protein yarns were integrated into Balenciaga's Spring 2026 collection, marking the transition from laboratory innovation to large-scale commercial adoption. The case highlights how deep-tech ecosystems can accelerate sustainable material innovation, strengthen regional production capacity, and enhance supply-chain resilience through high-performance, biodegradable alternatives to conventional textiles.

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