ekip Policy Lab #7

Cross-innovation with performing arts

Scoping Paper

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1 Short introduction

This scoping document explored the domain of cross-sectoral innovation with performing arts. Composed as part of the ekip project, the document focuses on the interrelation between the practice of performing arts and innovation while acknowledging performing arts as a subsector of Cultural and Creative Industries CCIs and a sector in its own right.

The document studies the current policy landscape especially for *cross-innovation with performing arts*, delivering a policy vision for strengthened opportunities for actors of the performing arts sector to actively participate in open innovation ecosystems and also instigate innovation processes together with other sectors and fields of activity. To this aim, the document starts with recognizing and articulating main policy problems and challenges that such cross-sectoral collaborations for innovation with performing arts characterize.

2 Policy Problem

2.1 Cross-innovation and performing arts: defining the relationship

According to the analysis conducted by the German federal expertise centre on cultural and creative industries cross-innovation allows to be described as building upon "open knowledge transfer and creative combination of innovation methods aimed at developing novel products, services, processes, and social innovations" (Kompetenzzentrum Kultur- und Kreativwirkschaft 2022, 4–5.). The key is indeed in the transfer of knowledge and solutions, procedures that have been further detailed as inside-out, outside-in, and coupled processes to discern between flows of innovation especially in corporation context. **Innovations that emerge from exchange between two, or more, fields of different activities** are often connected further with the notions of **spillover and crossover effects**.

In the context of CCIs, spillover effect would refer to a process where the influence and impact yielding from the CCI sector transfers to other sectors through applications of ideas, skills, knowledge, and concepts. While spillover effects would describe as more accidental and unintended outcomes, the notion of crossover effect refers to deliberate and intentional processes that channel knowledge and skills from the CCIs to interlink with those from other sectors to generate innovation.

The joint field of performing arts and R&D raises the expectation that such dialogue and crossover will inspire the development of the **intersection between artistic exploration/expression and scientific research, merging creativity with research and technology for innovation**.

2.2 The role of the performing arts in an open innovation ecosystem

How do performing arts professionals see themselves as actual and potential innovation actors in cross-sector innovation projects (the spillovers)? There is some evidence that they contribute to health and well-being (including the development of new therapeutic treatments); help increase competitiveness and harmonise organisational cultures (innovative business ideas, entrepreneurial and managerial solutions, organisational change); promote citizen engagement (including audience engagement with science through experience); stimulate and cultivate critical reflection (understanding technology, stimulating critical thinking, subversion, raising ethical questions); make innovation more inclusive (involving unheard voices and precarious communities in scientific development).

At the meta-level of the creative industries, 'knowledge spillovers' have been extensively discussed as a means of transferring value within and between sectors through the instrumentalisation of the creative industries. This also encompasses critical perspectives on the 'threats to autonomy' of arts professionals and their practice, with the arts being viewed as the most multiple values-driven and fragile core of the cultural and creative sectors. (O'Connor 2024, Vickery 2024). As we see from some interviews with experts (ekip 2025, WP5), there is also a so-called 'fear of contamination' of the arts and its freedom of expression by political or economic power factors that threatens trust in cross-innovation conversations.

The concept of innovation spillovers entails the dissemination of knowledge and creative capital that transcends individual projects or institutions, contributing to broader societal and economic advancements. See, for example, Bakhshi (2008, 2013, 2016, 2021); Galloway and Dunlop (2007), Frontier Economics (2023), and McDonald, Jordan and Hitchen (2024.)

Rarely are performing arts discussed as a specific sub-niche of this broader view of how the creative industries collectively contribute to open innovation. However, as with all the creative industries, innovation spillovers from the performing arts represent a critical area in understanding the dynamics of creativity, economic growth, and collaborative networks.

Of particular value is Potts and Cunningham's 'Four Models of the Creative Industries' which describes four conceptual models for the creative industries: welfare, competition, growth, and innovation (2008, p. 233.). With the 'innovation' model, rather than treating the creative industries as a public good (as argued by Galloway and Dunlop (2007)), a competitive industry the same as any other, or a special driver of growth which percolates out into other sectors, Potts and Cunningham propose that the creative industries act as a higher-order system which coordinates innovation, novelty and change across multiple sectors: "…this is the same model as proposed for the effect of science, education and technology in the national systems of innovation approach. Creative industries, in this view, originate and coordinate change in the knowledge base of the economy. In consequence they have crucial, not marginal, policy significance" (ibid, p. 238.). This voice is supported by Jonathan Vickery a contributor to ekip-coordinated academic session, who sees the innovation-culture nexus as embedded in the social landscape of people, work, institutions and enterprises.

Innovation and culture have a significant history of both symbiosis and antagonism, and both terms navigate highly developed policy fields that are "discursively positioned as two separate spheres of knowledge, and so policy, application and stakeholders". However, innovation is internal to the dynamics of social development and like culture, it is "a 'product' of modernity", and therefore the 'culture-innovation nexus' requires a critical perspective to understand its complexity and to imagine their potential synergies, collaborations or integration. What matters especially in the light of the cross-innovation, dialogues potential of performing arts, it's the common structural features of innovation and culture that is Knowledge Production. Culture and innovation point to interconnected human capacities to think through transformation. As Vickery points out, there is a contradiction in terms of capitalist economy, yet 'culture-innovation' together promise "a unity of two essential forms of intellectual labour - creativity and imagination; expression and symbolic value; design, manufacturing and industrial production"

(Vickery 2024, 19). He proposes structuring a more adequate theoretical methodology on the topic of the 'Culture-Innovation nexus', that can help in finding the core points of arts and innovation dialogue. 4 themes can stand as structural features of the nexus as discourse: (1) Resource Allocation and Organisation; (2) Infrastructure and Ecosystem; (3) Skills and Capabilities; (4) Productivity, Impact and Outcomes.

In a tabulation proposed by Vickery, these themes could stand in for a conceptual mapping of the 'Culture-Innovation nexus' as a cultural discourse of knowledge production (Vickery 2024: 15-17). He sees several potential synergies, collaboration or integration than can be given also as exemplary modes or themes of a dialogue of the cross-innovation with performing arts, that encounters 4 abovementioned themes as structural features, with the 4th as probably the most in tune with the performing arts capabilities:

1: Resource Allocation and Organisation

(i): Developing Public pedagogy, engagement and events.

(ii): R&D-based investment style funding.

(iii): Integration of design, technology, spaces and places.

(iv): Impact pathway facilitation.

2: Infrastructure and Ecosystem:

(i): Training and skills (not just in production, but management and organisation);

(ii): Institutional support, recognition and facilities;

(iii): New spaces, labs, hubs, portals (infrastructure for new production methods, techniques and technologies);

(iv): Research methodology and strategy development;

(v): International and global economy.

3: Skills and capabilities:

i): Historic-institutional discourse (shared knowledge and language).

(ii): Shared Knowledge grounding in design, measurement, craft, materials, construction, sustainability, etc.

(iii): Project and organisational management for dynamic systems of production.

(iv): Professional frameworks for knowledge and skills evolution through changing institutional and economic landscape.

(v): Advocacy, representation, diplomacy, economic strategy.

4: Productivity, Impact and Outcomes:

(i): Critical and Cultural analysis – especially developing public discourse;

(ii): Transdisciplinary learning, and methodology development;

(iii): Knowledge codification, theory-building, data and evidence-building, assessment, reviewing and evaluation frameworks.

(iv): Space, place, brand, performance and markets.

There is evidence of the added value of performing arts practices and methodologies in cross-innovation processes. Specifically, we talk about the added value of embodied practices and experiential situations, for example in prototyping, forecasting, trending, fostering engagement in uncertain and volatile times. The discussion on the **outcomes and impacts of the performing arts in open innovation ecosystems (in cross-innovation practice) is situated in several societal domains**, for example: cultural, economic, social, ecological or organisational:

- The **cultural domain** refers, e.g. to the development of new insights, knowledge, perspectives; the fostering of creativity; new experiences for audiences. The integration of technology into performing arts practices has opened new avenues for collaboration. For instance, Yan et al. explore how brain-computer interfaces can enhance audience engagement in performances, demonstrating the potential for technological innovation to reshape the performing arts landscape (Yan et al., 2016). Similarly, the work of Han et al. on linking audience physiology to choreography illustrates the exciting possibilities that arise when artists and researchers collaborate to explore the intersection of technology and performance (Han et al., 2023). These and related projects are "…providing new ways to explore the invisible link between audience and performer" (ibid.) Such technologies could lead to new developments, for example, in how performing artists assess audience experiences as part of broader means for evaluating impact; they could lead to new types of audience interaction for incorporating audience data into live performances; they could raise critical reflection questions about the nature of privacy and invasiveness of data capture in performance and broader artistic settings; and they could potentially lead to new forms of artistic inquiry in other domains (such as using the data in arts-led health research or arts-led healthcare programmes in community settings.)
- The **economic domain** includes developing new business or employment opportunities. Performing arts have a vital role to play across other industry sectors through fostering experimentation, risk-taking and sparking new creative ideas, encouraging effective collaboration, fostering emotional intelligence and reflective practice, and enhancing adaptability and responsiveness to changing circumstances (Saha, Mukherjee, and Sharma 2023, 1414). Indeed, some businesses may not even recognise when their techniques for cultivating creativity and innovation (such as rapid prototyping, which could be considered a form of improvisation, or storyboarding, which is a frequently used technique for developing scripts and performance prompts) emerge from performing arts disciplines. Businesses like global design firm IDEO have popularised such techniques on a global scale (ibid.) These kinds of performance techniques may form part of an invisible layer of innovation infrastructure within organisations, where the performance contributes to but is not an explicit element of a final product or service.

  A more explicit example of how the performing arts contribute to developing new business innovations is the growth in VR-based psychotheraputic interventions such as Soulhacker1 and the AVATAR clinical trials (Garety, Edwards, Jafari, et al, 2024). Using a mixture of dramaturgy, role-play and customisable visual design, these interventions attempt to add novel therapeutic treatment modalities for conditions ranging from anxiety and depression to schizophrenia and bipolar disorder. These treatments are being instrumentalised through health-care startups like French firm C2Care2. Scaling these techniques outside traditional clinical practice settings will require further exploration of their efficacy and careful attention to ethical ramifications such as patient data capture.

- The **social domain** includes, for example, improving health and well-being; more inclusive practices and accessibility for artists and audiences; civic engagement; more human-centred approaches to (technological) innovation processes… all co-created through the tools of the performing arts. Fortier and Coulter propose a conceptual framework for creative cross-sectoral collaboration that emphasizes partnerships between the arts (including performing arts-based practices), health, and well-being sectors (Fortier & Coulter, 2021). This framework underscores the potential for the arts to contribute positively to public health, a concept supported by Sonke et al., who highlight the proliferation of arts programs in healthcare settings, and their associated health benefits (Sonke et al., 2021). The role of performing arts practices focused on interpreting and critically reflecting on lived experiences in order to develop "ethical storytelling" (ibid.) for reframing strategies to promote health and to reach underserved communities was a particular highlight of this research.

  One example of the performing arts acting as a direct catalyst for social change is Estonia's well-documented "singing revolution" 1987-1991 (Ellis and Wood, 2014). Estonians used their long tradition of song festivals in the Estonian language as the foundation of preserving Estonian culture under Soviet occupation, acting as a significant means for fostering social cohesion, civic engagement, and shaping national identity during the occupation period. "Estonian choral music and singing during the Soviet collapse not only rekindled a notion of "Estonian-ness," but also provided a platform for many individuals who were otherwise not politically active to engage in social and governmental protest" (ibid.) In today's fractious political climate, similar politically engaged performance initiatives can be seen through Ukranian-Canadian immersive folk opera Counting Sheep, performing globally since 2016 to raise awareness about the Ukraine occupation by Russia (Fisher, 2016) and Northern Irish rap group Kneecap, whose performances in the Irish language have drawn the ire of British policymakers, with public funding to the group being withheld, then granted, now potentially again withheld (Wood and Fleck, 2025). While all these examples are "ground-up," policymakers could also build on such principles as a proactive means of participatory citizen engagement focusing on desired core values and priorities.
- The **ecological domain** is exemplified by more environmentally sustainable performing arts practice or behaviour. In 2021, leading up to CoP26 in Glasgow, the Marine Alliance for Science and Technology for Scotland commissioned a new musical work from data models describing the impact on atmospheric and ocean conditions as a consequence of diminished Arctic Sea ice[3]. The purpose of this work was to represent scientific data about the measurable impacts of climate change through a means that would engage audiences' senses. The Black Glass Ensemble accompanied composer Michael Begg for several performances of the work across Scotland prior to and following CoP26; one such performance is available as part of the Ocean ARTic Showcase[4]. An album of the work, including extensive commentary from scientists and artists involved in the creation of the music, is available on Begg's label Omnempathy Records[5]. Begg subsequently joined the crew of HMS Protector in the Antarctic as Musician in Residence in January 2025, allowing him to gather a range of field recordings to begin the process of creating new works that will complement the pieces created during earlier residencies with the European Marine Board and the Ocean Arctic Partnership[6].

Describing a foresight engagement with the UK's Department for Environment, Food and Rural Affairs (DEFRA) in 2006, practitioner Victoria Ward outlines the value of embodied techniques. Practitioners of foresight know well, from experience, that much of the impact comes from participating in a collaborative, co-owned, structured, imaginative, visual, process. The folk memory of that social, convivial work carries forward as much as any reified artefacts. Shared experience does a great deal to shape a shared language, and carry those artefacts forward, advocate for them, and activate them into places where they can be fruitfully disruptive (Ward 2024, 298.). Ward outlines that "...embodied memories of participants on their hands and knees sorting all the pinboard cards out" serves dual purposes: acting as a great leveller for redistributing power in futures settings, opening up new possibilities, and creating an enduring 'folk memory' which sets a shared sense of direction towards a joint desired future (ibid., 299.) Ward particularly highlights the value that embodied practice can add in "how to equip policymakers to sit at the edge of their commissioning comfort zone" (ibid.): moving policymakers beyond the "unglamorous, relationally demanding" day-to-day work of policymaking into a space which opens possibilities for "chang[ing] engrained practices, sticking their necks out to oppose...existing culture" (ibid., 300.)

This echoes findings from Arawana Hayashi's Social Presencing Theatre (SPT) methodology "for making visible current reality and exploring emerging future possibilities" (Hayashi, n.d.) Social Presence Theater uses three primary techniques for non-verbal communication which "make visible both current realities, and the deeper–often invisible–leverage points for creating profound change" (ibid.) The primary technique, the Stuck Exercise, involves practitioners moving from a sculpture representing the current, "stuck," reality into a new sculpture representing an emergent future. 4D Mapping, a second technique of SPT, involves participants collectively representing a current systemic reality and seeking new possible futures. The final technique is a freeform dance designed to synchronise practitioners' bodies and minds. Examples of SPT in practice include a "speculative AI-powered learning garden" devised with students, educators and administrators in the German higher education system on the cusp of introducing generative AI technologies into their working environments (Rafehi 2024.) Through its 'Learn, Create, Engage' programme, the county of Skåne in Sweden is offering cultural and creative industries practitioners the opportunity to learn how to apply embodied futures methodologies in their own work (Mediaevolution, n.d.)

2.3 Challenges & opportunities

Even prior to the establishment of its current, well-established arts programme in 2010, CERN, the European Laboratory for Particle Physics in Geneva, had long drawn the interest of creative practitioners, including choreographers, composers, dancers and opera singers: "Artists have been attracted to CERN since it first opened in 1956, both as tourists and as personal guests of the CERN scientists. They came seeking inspiration as well as collaborations, cachet and potential funding from being connected with the institution" (Koek 2017, 346.).

In her article outlining the foundations and development of the current programme, Arts at CERN founder Ariane Koek describes the challenges of initiating cross-collaborations between artists and scientists:

- Without a significant, consistent, and bounded time commitment on both sides, frustrations and resentments grew between collaborative partnerships. Scientists felt "exploited by the artists' lack of consistent time commitment… as if their brains had been picked to no reciprocal advantage" (ibid., 347.) Equally, artists felt frustrated by the lack of programmatic structure leading to confusions and mismatched expectations about project work, causing difficulties with integrating into the scientific community. This created difficulties for devising the "tight-knit collaborations [which] are at the heart of CERN's existence" (ibid.)
- Detailed technical discussions of their respective disciplines could be alienating for both the artists and physicists. A curatorial programme carefully matching scientists' and artists' interests to mutual benefit, with a focus on equality of expertise between artists and scientists, focused on relationship-building and outreach to overcome these barriers of alienating jargon (ibid., 348).
- The physical environment at CERN comprises hundreds of buildings spread across multiple countries housing multiple vast experiments, computing facilities, and a collection of the world's most advanced physics experimentation equipment. Artists were "beguiled… not to say in awe" of the scientists and the complexity of their research (ibid., 347).
- Some scientists believed that "surely anybody could be an artist," (ibid., 348) contributing to a sense of inequality of the value of work produced by the scientists compared to their artistic counterparts that could have undermined the purpose of the programme as fundamentally concerning cross-collaboration between the artists and scientists, not being a mere translation exercise from the scientists out to a passively receptive public, "simply to communicate and illustrate the science" (ibid. 353).
- "Why did CERN need to employ a cultural specialist at all?" (ibid. 349) Scientists within and potential funders without CERN asked this question repeatedly. While some key leadership figures within the institution were excited by "the equation arts + science + technology = culture," many remained sceptical about the purpose of devising an arts programme.

And yet, to Koek it was clear that despite these barriers there was great potential to improve the collaborative environment between artists and scientists at CERN. Her core success factors, from which policymakers could learn when providing funding and resources for other cross-innovation initatives, include:

- Instantiating a curatorial or producer role to act as a broker between artistic and scientific languages, and as a feasibility checker for what would be realistically possible (ibid. 347)
- Siting the artists on-site and integrating them as deeply as possible into lab life, just as the scientists collaborate with one another on-site (ibid.)
- Induction visits to familiarise artists with the physical campus and with the technical language of CERN, and to devise collaborative partnerships between the scientists, artists and producers (ibid.)
- A public lecture and blog series co-led by the artist and their scientific collaborators to facilitate knowledge exchange and public engagement with the usually invisible creative process (ibid.)

- A rigorous selection process for the participating artists, "regarded as an equivalent to the peer-review process in science," in order to address any misconceptions on the part of the scientists or the wider public that 'anybody can be an artist', giving equal weight to the techniques and methodologies of artistic disciplines and scientific disciplines in these collaborations (ibid. 348.)
- Paying the artists equivalent to their scientific peers, to further underscore the equal value of science and arts in the Arts at Cern collaborative process. (ibid. 349.)

Crucially, the role of Arts at CERN is not only to communicate scientific concepts to a wider public, but also to help scientists communicate their aims and deepest truths *to themselves,* as exemplified by Julius von Bismarck's "kidnapping of 30 scientists, holding them hostage underground in the pitch black, asking these seekers of the invisible what they saw in their minds' eyes" (ibid. 351.) Furthermore, a key aim of the programme is to act "fundamentally [as] an artists' research exercise, derived from knowledge exchanges between artists and the scientists, and focused exclusively on the creative process, not on 'product', 'outreach' or timed goals" (ibid. 353.) This programme truly exemplifies the role of cross-collaboration between arts (including performing arts) and science, acting as a beacon and a guidebook for what can be achieved when science and arts are given equal weighting in collaborative processes.

In their article about the exchange of knowledge in collaborative initiatives across sciences and creative practices Groth et al. (2020) analysed through expert interviews which elements would contribute to fruitful collaboration. The authors started from the observations that, along the recent decades, "general research policies guide researchers towards actively solving material, societal and global challenges through problem-oriented, solution-focused and collaborative research strategies" (Groth et al. 2020, 328) and that many of those active in the "creative fields" are also advocated to work across disciplinary borders, which has led to "a new convergence between creative and scientific research" and the topicality of "discussions on the possible challenges and benefits of fundamentally different epistemologies meeting" (ibid., 329).

The authors make use of the expression 'creative practices' that refers to "arts, craft, design and related research" whereas 'science' denotes "biology, chemistry, physics and biotechnology" (ibid.) Clearly, the article does not explicitly cover performing arts but addresses the matter of differing epistemic frameworks on a more general level. Based on the expert interviews it was found that in addition to epistemic differences, or, entailed to those, attitudes varied. For example, Groth et al. Report (2020, 334) that it was common among the interviewed 'scientists' to hold the attitude that the "creative fields bring new ways of disseminating scientific research results", which, from the perspective of 'creatives' would easily appear as shallow understanding about how the arts can contribute: "most creative practitioners were frustrated that their partners did not understand their contribution beyond a functional purpose such as dissemination or illustration".

On the other hand, it is apparent that different disciplines can fuel and give impulse to teach other and that interaction and communication lead to the phenomena of joint learning and 'knowing together'. "There was consensus that building trust and solid communication in collaborative research requires regular presence and common activities: opportunities of *knowing together* [italics as in orginal text] require people to work in the same space or facilities and engage in the research hands-on and/or through discussions on a regular basis" (ibid., 335).

As factors that help experiential knowledge transfer between sciences and creative practices Groth et al. listed the following (336):

1. Close practical collaboration and intellectual exchange: the importance of working hands-on in the same premises.
2. Motivation to solve the same research problem: the importance of using one's own expertise in mutually new contexts.
3. Trust, personal chemistry and the ability to leave one's own comfort zone: the importance of mutually educating each other and building a common language.
4. Knowledge production: the importance of being open to multiple perspectives.

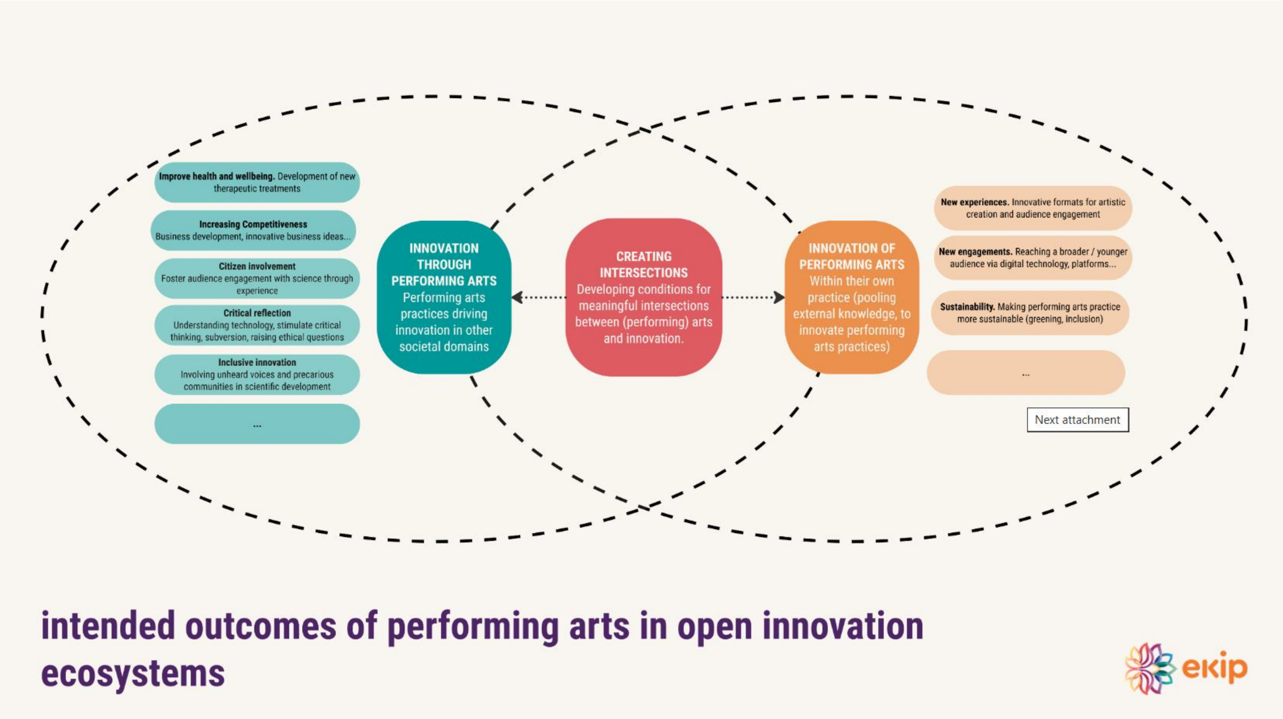
Also, the article named several factors that can harm collaboration (ibid., 340). These included: lack of time for working together; unwillingness to understand each other's language or an attitude of not being open for collaboration; not acknowledging each other's work effort and its value. Such factors easily lead to: miscommunication; feeble personal connection and trust; no shared language; appropriating or stealing outcomes of the work efforts; applying hidden agendas; exploitative use of power or control. Pointing to future research needs the article finally concludes that operational and funding structures can have an important effect on how multi-, cross-, inter-, or transdisciplinary collaborations (for these different approaches see p. 329) may succeed: [- - -] funding might shape collaboration according to whether it is obtained by scientists or creative practitioners, and how this might affect power structures within the group or the continuity of the research (ibid., 342).

Opportunities

Across Europe, we encounter diverse types of cross-innovation projects with performing arts: collaborations between individual artists, companies, and festivals with universities and research centres; partnerships with hospitals and healthcare professionals; joint initiatives with schools and training institutions; and experimental work with businesses, technology firms, or civil society actors. Some of these remain largely within research labs or residencies, where networks and methods are nurtured behind the scenes. Others take public shape through performances, exhibitions, installations, conferences, and dedicated programme lines in cultural venues.

Potential outcomes of involving performing arts actors in open innovation ecosystems can be categorised in three different areas:

- **Innovation of performing arts**: pooling external knowledge to innovate performing arts practices both on- and off-stage.
- **Creating intersections**: developing conditions for meaningful intersections between (performing) arts and innovation.
- **Innovation through performing arts**: Performing arts drive or disseminate innovations in other societal domains.



Innovation within the performing arts sector itself often results in new experiences and insights, new ways of engagement with audiences or more ecological and social sustainability practices. Developing meaningful intersections between the performing arts and other sectors to drive innovation leads to the development of cross-sectorial networks and exchange of knowledge, skills and perspectives. Innovation through performing arts can bring about critical reflection on the impact of practices, experiential citizen science through practices and knowledge, improved product or service development, inclusive innovation in scientific development and innovative businesses ideas and sustainable organisations.

The diversity of cross-innovation projects with performing arts illustrates that cross-sectoral innovation can both quietly build long-term ecosystems of trust and collaboration and generate visible outcomes. Both relate to the specific qualities that performing arts can bring to innovation ecosystems. Performing arts organisations bring distinct and valuable perspectives to research and innovation ecosystems. Their practices are rooted in **embodied knowledge, improvisation, and live interaction**, which foster critical, speculative, and creative thinking. The inherently **collaborative and iterative nature** of performing arts enhances concept development and opens new pathways for valorisation. A key strength of performing artists lies in their ability to **think holistically and intuitively about complex issues**, moving beyond more narrow scientific or technological frameworks. Their involvement allows researchers and industry partners to explore questions that may not yet be considered, and to **engage with emotional, ethical, and experiential dimensions of innovation and technology**. Performing arts spaces can also serve as laboratories for **speculative futures**, where societal challenges such as AI ethics, bias, and gender dynamics can be explored through narrative, movement, and performance. Moreover, performing arts can help to bridge the gap between research and society, by translating abstract scientific and technological concepts into **compelling, emotionally resonant experiences**. This not only enhances public engagement but also supports the uptake and understanding of innovation in more inclusive and meaningful ways[1].

Challenges

Despite existing evidence of the added value of performing arts practices and methodologies in cross-innovation processes, such practices remain far from mainstream. Their added value for cross-innovation is less widely recognised and even less systematically embedded in research and innovation frameworks. **Cross-sectoral innovation with performing arts still faces many challenges**. On the one hand, the performing arts sector faces internal barriers: it is labour-intensive, highly competitive, and underfunded, leaving little room for experimentation, risk-taking, or long-term collaboration. On the other hand, other sectors and broader innovation ecosystems display limited openness towards artistic practices. Also explicit innovation policies that integrate the performing arts remain exceptional.

To unlock the systemic potential of cross-innovation, a cultural shift is needed on both sides of the collaboration. It is crucial that leaders in the performing arts and in other societal domains — business, academia, healthcare, civil society — develop a shared awareness of the benefits of collaboration and cross-innovation. Sustained networks, trust-building, and mutual understanding of each sector's logics, values, and expertise are prerequisites for meaningful partnerships. Intermediaries and (cultural) brokers are crucial to bridge divides, translate across professional languages, and facilitate equal cooperation. Policymakers, at local, national, and EU levels, can play a decisive role in creating the enabling conditions for this systemic openness.

3 Policy landscape & trend analysis

While cross-innovation as a topic has been popular for the good part of the 21st century so far, European, national, or regional policy documents or strategies focussing specifically on performing arts and cross-innovation are not easily found. However, several projects have already been implemented or are currently taking place. Some of the good practice examples of overcoming barriers and unlocking potential of performing arts in cross-innovation collaborations relate to different examples of activities such as networks, residencies, labs, creative hubs made possible by funding programmes, co-productions, Creative Europe or Horizon projects or private donations. The project-based initiatives and the more established frameworks at the city level exemplify a shift towards collaborative, citizen-centric approaches especially in urban development. Results and further experience of these projects thus would allow to collect some advice for planning policies that would specifically focus on performing arts.

Cities and cross-innovation

Among the examples of city based cross-innovation initiatives is **Amsterdam's Cross-Innovation Framework** that evolved through 2010s and operates since 2024 as 'Amsterdam InChange'. It is an open innovation platform that fosters collaboration among administration, knowledge institutions, social organizations, and innovative companies to address challenges and shape a sustainable future for the Amsterdam region and beyond. The framework was earlier called 'Amsterdam Smart City' but the name was changed to better reflect its mission of tackling complex societal challenges through

[1] European Commission: Directorate-General for Research and Innovation. IDEA Consult. (2022). *Fostering knowledge valorisation through the arts and cultural institutions*, Publications Office of the European Union, 2022, **https://data.europa.eu/doi/10.2777/377987**

collaborative and human-centered innovation. Indeed, the framework's focus expanded from technology-driven innovation to a broader cross-sectoral innovation model that includes social innovation, sustainability, and public value creation.
https://www.amsterdaminchange.com/

Similar initiatives can be recognised from other places, such as the **Medialab Matadero** in Madrid, Spain. It is a citizen lab and cultural centre dedicated to fostering collaborative innovation at the intersection of art, science, technology, and society. It has been established already in 2000 by the Madrid City Council and it has evolved into a leading hub for participatory design and digital commons. Medialab Matadero operates on principles of openness, collaboration, and experimentation. It aims to create a space where individuals from diverse backgrounds can co-create projects addressing contemporary societal challenges. The lab emphasizes facilitating connections between different actors through cultural mediation programmes, encourages experimentation and supports the initial phases of new ideas via collaborative workshops. It also aims to promote the use of open-source tools and publishing content under open licenses and participate in local and international collaborations to share and exchange practices.
https://www.medialab-matadero.es/en/

'Torino City Lab' by the city of Turin. While attention is more on technology, the logic is to serve as a platform for urban innovation, offering an open laboratory for testing frontier technologies such as autonomous vehicles, drones, IoT, 5G, artificial intelligence, and robotics. The project aims to enhance the quality of life and promote environmental and social sustainability within the city.
https://torinocitylab.it/en/

EU policy initiatives and programmes

The 2022 launched EIT (European Institute of Innovation and Technology) **KIC (Knowledge and Innovation Communities) for Culture & Creativity** is the EU's flagship initiative to empower innovation in the creative and cultural industries. It aims to support interdisciplinary and cross-sectorial collaborations between innovation, business, research, culture, and education across all sub-sectors of CCIs. Instead of project schemes EIT CC looks to co-finance long-term partnerships that would contribute to competitiveness of European CCIs also at global level.

S+T+ARTS (Science + Technology + Arts) is a European Commission initiative specifically committed to providing structural support to cross-collaborations between arts, science and technology. It promotes artists, scientists, engineers, and researchers to together drive innovation addressing social, ecological, and economic challenges. S+T+ARTS holds different activities aiming to integrate artistic perspectives into technological development, fostering human-centred innovation, including 1) residency programmes that allow artists and technologists co-create projects, exploring topics like sustainability, digital transformation, and urban resilience; 2) an annual award (S+T+ARTS Prize) recognizing outstanding projects at the intersection of science, technology, and the arts, highlighting their impact on innovation; 3) initiatives that focus on specific societal challenges, fostering interdisciplinary approaches and educational activities; 4) networks (Regional Centers and Digital Innovation Hub) that support local collaborations and disseminate knowledge across Europe.
https://starts.eu/

Funded through the Creative Europe programme, the **European Theatre initiative** maintains an ongoing conversation between the European Commission and the theatre sector. It strategically strengthens the sector by working on identified sectoral challenges, network development in the European theatre scene, support in innovation development and initiations of cultural-political dialogues. During the European Theatre Forum in 2020 the first official dialogue between performing arts actors and EU policymakers was initiated, resulting in The Dresden Declaration[2], the result of a seven-month collaborative process, that articulates a shared vision for the future of theatre and performing arts in Europe in response to the aftermath of the COVID-19 crisis. In 2023, the second edition of the European Theatre Forum took place, resulting in the Opole recommendations[3], a high-level policy document consisting of recommendations that reflect the voice of the wide European theatre sector. Half of the six policy priorities consist of cross-sectoral topics, related to innovation.

Examples of EU funded projects

Performing arts and innovation have increasingly intersected across Europe through various projects and initiatives. Projects spanning dance, theatre, circus, and music such as Perform Europe, ACuTe, and Next Stage have leveraged digital technologies, interdisciplinary collaboration, and new models of cultural and social engagement. These initiatives have provided structured frameworks and funding for experimentation, cross-border collaborations, digital transformation, and sustainability in the performing arts. Indeed, innovation in the performing arts is being driven not just by new technologies, but also by systemic change—emphasizing accessibility, sustainability, and cross-sector impact.

- **Perform Europe** supports innovative, low-impact touring methods for dance and theatre. It is a funding scheme specifically for the European performing arts sector and it promotes through its calls sustainable touring practices, a balanced geographical circulation of performing arts works and initiatives that prioritise underrepresented voices.
  https://performeurope.eu/

- Launched in 2021, **Next Stage** aims to foster innovation in the opera and dance sectors by funding transformative projects focused on Sustainability, Equality, and Digital Transformation. Among other things, it has supported integrating XR technologies into opera and ballet. Next Stage is a collaboration between Opera Europa, an organisation for professional opera companies and opera festivals in Europe, and FEDORA, the European Circle of Philanthropists of Opera and Ballet, with support from Creative Europe. FEDORA leads the fundraising efforts from both public and private sources, while Opera Europa contributes as a key expert partner, working alongside specialists in sustainability, inclusion, and digital innovation.
  https://opera-europa.org/next-stage

- **DanceMap**, funded by Horizon Europe, is a three-year project that focuses on dance heritage in Europe. It aims to develop a cross-sectoral strategy for safeguarding and promoting Europe's rich dance heritage. The project not only emphasizes innovation through digital means but also the development of equitable working conditions and inclusive participation models. DanceMap pays special attention to dance heritage in Europe. One of the goals is to secure that dance would be included in the common European data space for cultural heritage (ECCCH) as a use case for other embodied practices.
  https://bureau-ritter.de/en/project/dancemap/

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[2] *The Dresden Declaration*. (z.d.). https://www.europeantheatreforum.eu/page/the-dresden-declaration-of-the-european-theatre-forum

[3] European Commission, Häusler, G., European Theatre Convention, & Wiley, H. (2023). ETF 2023 Opole Recommendations. In *European Theatre Forum*, via: https://culture.ec.europa.eu/cultural-and-creative-sectors/performing-arts/european-theatre-initiative

- **ACuTe, Culture Testbeds for Performing Arts and New Technology**, funded through the Creative Europe programme 2021–27, offers an example of a large, European innovation project that explores application of not only emerging technologies but also new ways of cultural collaboration and competence development.
  The project builds on an interdisciplinary approach and aims to integrate digital technology and co-creation methodologies. This is experimented during the project through 'culture testbeds', experimental theatre productions prototyping new technologies within performing arts productions. The initiative heads to deliver innovations on how stories are told on stage, how they are produced, and the way audiences interact and engage with them. Other activities include a residency scheme to support prototyping, knowledge transfer events, workshops and both online and face-to-face activities advocating capacity building for the deep integration of technology in theatre production processes.
  https://acuteproject.eu/

- **BETA CIRCUS** is a European cooperation project co-funded by the Creative Europe Programme aiming to explore and promote new trends in contemporary circus arts. The project addresses the lack of high-level training opportunities for emerging artists, particularly in countries where circus arts are underrepresented in the contemporary arts scene. It serves as a capacity-building platform for emerging circus artists across Europe and focuses on innovative disciplines such as 'participatory circus', offering artists the chance to develop new skills, engage with diverse audiences, and collaborate internationally. 'Participatory circus' integrates local communities into the creation and performance of circus arts, often in unconventional spaces. This innovative approach has been explicated in the recent publication 'Shared Stages – A comprehensive guide to participatory circus' offering a look into the methodologies, creative processes, and key learnings from the innovative participatory experience. The guide is intended to artists, producers, and cultural professionals, and it explores how participatory practices can shape the future of contemporary circus, outlines the project's methodology, draws conclusions, and offers a best-practice manual to support replication across Europe and beyond.
  https://betacircus.eu/

4 Future trends

The performing arts sector is evolving rapidly, embracing a future shaped by hybrid formats, technological innovation, and cross-sector collaboration. Artists are increasingly experimenting on the intersection of live and digital experiences, creating participatory environments where audiences become co-creators rather than passive spectators. This shift is redefining the relationship between stage and audience, fostering deeper emotional, intellectual, and physical engagement. Emerging technologies such as VR, AR, and gesture-controlled media are expanding the boundaries of performance, while small-scale, experimental projects are driving innovation in live experience design. Touring practices are being redesigned with a focus on socio-environmental sustainability, fairness, and local cultural connection, transforming mobility into a tool for systemic change.

Looking ahead, performing arts are ready to play a role in shaping interdisciplinary research, education and professional development. Artistic methodologies are increasingly applied into fields like mental health, robotics, and business innovation, offering tools for empathy, critical thinking, and embodied learning. Hybrid programmes that blend artistic methodologies with STEM, business, and social innovation are emerging and create new models of interdisciplinary education.

Artistic research is gaining attention and support as a means to explore complex human behaviour and alternative forms of sense-making. As algorithmic curation dominates digital culture, human curatorship and cultural literacy are being revalued, positioning artists as qualitycontrollers, tastemakers and facilitators of collective authorship. The rise of immersive and co-created experiences signals a future where the performing arts not only reflect transitions in society but can actively contribute to them.

5 Concluding remarks

Several of the recent and ongoing initiatives that combine performing arts and innovation hold technologic or digital advancement as priority. Other interests, typically increasing community or audience access or participation in performing arts and respective processes are also included in such projects. Reflections upon the relation between performing arts and open innovation, or the roles performing arts and experts could have in open innovation processes, are to date rather few, although Faludi's (2015) study on examples of open innovation in contemporary dance and theatre productions offers a valuable analysis of innovation process within the sector.

However, more often than not, performing arts are in the position to adopt new capacities and skills to apply technologic or digital innovation in the sector's activities or to otherwise work as an instrumentalised platform for other causes than those directly connected performing arts' core activities or expertise. Against this background, the S+T+ARTS initiative is significant due to its different activities that specifically aim to integrate artistic perspectives into technological development and foster more human-centred innovation. The findings about experiential knowledge exchange in collaborative research as presented by Groth et al. (2020) would give further advice on supporting multi-and cross-disciplinary innovation practices.

Critical artistic reflection reminds (Rousi 2017, 8) that even scientific research activities allow to be reviewed as performances that take place on different "stages", namely the laboratory; scientific texts and respective platforms (e.g. academic journals with the related performative practices); and associated events such as seminars and conferences. This perspective can be freely applied also to innovation processes, which easily invokes the application of performing arts to study or even dismantle an innovation process to better understand the different parts, roles, modes of interaction, or even plot lines that are involved.

References

Bakhshi, H. (2016) 'Putting Creativity on the Map: Classification, Measurement and Legitimation of the Creative Economy', in Cardiff: Creative Capital Symposium. Cardiff: Nesta. Available at: https://media.nesta.org.uk/documents/putting_creativity_on_the_map.pdf

Bakhshi, H. (2021) 'How can we measure the creative economy? The Cunningham Project', Media International Australia, 182(1), pp. 21–27. Available at: https://doi.org/10.1177/1329878X211043905

Bakhshi, H., Freeman, A. and Higgs, P. (2013) A Dynamic Mapping of the Uk's Creative Industries. London: Nesta. Available at: https://eprints.qut.edu.au/57251/1/57251.pdf

Bakhshi, H., McVittie, E. and Simmie, J. (2008) Creating Innovation: Do the creative industries support innovation in the wider economy? Nesta. Available at: https://media.nesta.org.uk/documents/creative-innovation.pdf

Ellis, J. and Wood, K. (2014). 'Revolution by Song: Choral Singing and Political Change in Estonia,' Remembrance and Solidarity Studies. Available at: https://enrs.eu/article/revolution-by-song-choral-singing-and-political-change-in-estonia

Faludi, Julianna. (2015.) Open innovation in the performing arts. Examples from contemporary dance and theatre production. *Corvinus journal of sociology and social policy* 6(1), pp 47–70. Available: https://doi.org/10.14267/cjssp.2015.01.03

Fisher, Mark. (2016.) 'Interview: Counting Sheep: the polyphonic protest show that puts you inside Kiev's Maidan.' *Guardian, The.* 17 August. https://www.theguardian.com/stage/2016/aug/17/counting-sheep-edinburgh-festival-kiev-maidan-ukraine-protest-marichka-kudriavtseva-amark-marczyk

Fortier, J. and Coulter, A. (2021). Creative cross-sectoral collaboration: a conceptual framework of factors influencing partnerships for arts, health and wellbeing. Public Health, 196, 146-149. https://doi.org/10.1016/j.puhe.2021.05.017

Frontier Economics. (2023). *Creative Spillovers: do the Creative Industries Benefit Firms in the Wider Economy?* Available at: https://pec.ac.uk/blog_entries/creative-spillovers-do-the-creative-industries-benefit-firms-in-the-wider-economy/

Galloway, S. and Dunlop, S. (2007) 'A Critique of Definitions of the Cultural ad Creative Industries in Public Policy', *International Journal of Cultural Policy*, 13(1), pp. 17–31. Available at: https://doi.org/10.1080/10286630701201657

Garety, P.A., Edwards, C.J., Jafari, H. *et al.* (2024). Digital AVATAR therapy for distressing voices in psychosis: the phase 2/3 AVATAR2 trial. *Nat Med* **30**, 3658–3668. https://doi.org/10.1038/s41591-024-03252-8

Groth, C., Pevere, M., Niinimäki, K. & Kääriäinen, P. 2020. Conditions for experiential knowledge exchange in collaborative research across the sciences and creative practice. *CoDesign* 16:4, 328–344. Available: https://doi.org/10.1080/15710882.2020.1821713

Han, J., Chernyshov, G., Sugawa, M., Zheng, D., Hynds, D., Furukawa, T., ... & Kunze, K. (2023). Linking audience physiology to choreography. ACM Transactions on Computer-Human Interaction, 30(1), 1-32. https://doi.org/10.1145/3557887

Hayashi, A. (n.d.) Social Presencing Theater: a social technology of collective awareness and systems change. Available at: https://arawanahayashi.com/spt/ (Accessed: 7 May 2025).

Koek, A. (2017). In/visible: the inside story of the making of Arts at CERN. *Interdisciplinary Science Reviews*, *42*(4), 345–358. https://doi.org/10.1080/03080188.2017.1381225

Kompetenzzentrum Kultur- und Kreativwirtschaft (2022): *Erfolgsfaktoren von Cross Innovation mit der Kultur- und Kreativwirtschaft*. Themendossier in the series Analyse & Trends. Available online: https://kreativ-bund.de/wp-content/uploads/2022/07/Themendossier_Erfolgsfaktoren_Cross_Innovation_KKW.pdf (Accessed 28 April 2025).

McDonald, C. Jordan, J., & Hitchen, G. (2024.) 'R&D in the creative industries: Bringing the 'dark matter' of the sector to light with data.' *Data-Driven Innovation in the Creative Industries.* Terras, M., Jones, V., Osborne, N. & Speed, C. (eds.). Routledge, p. 46-69. https://doi.org/10.4324/9781003365891-3

Mediaevolution (n.d.) Feel your Futures – Foresight Training through Movement. https://www.mediaevolution.se/program/Feel-your-Futures-Foresight-Training-through-Movement

Potts, J. and Cunningham, S. (2008) 'Four models of the creative industries', International Journal of Cultural Policy, 14(3), pp. 233–247. Available at: https://doi.org/10.1080/10286630802281780 (Accessed: 9 June 2023).

Rafehi, M. (2024.) Exploring co-creative embodiment and foresight practices. School of Commons: Making Public. https://schoolofcommons.org/making-public/issues/2024/exploring-co-creative-embodiment-and-foresight-practices

Rousi, R. (2017). Performing Science. Blurring the Boundaries among Art, Research, and Academic Communities. *Research in Arts and Education.* 2017(1), 1–10. Available at: https://doi.org/10.54916/rae.118842

Saha, A., Mukherjee, S., and Sharma, D. (2023). Role of Art in Business: Integrating Visual and Performing Arts to Foster Creativity, Drive Innovation, and Enhancing Strategic Outcomes. ShodhKosh: Journal of Visual andPerforming Arts, 4(1), 1412–1417. doi: https://doi.org/10.29121/shodhkosh.v4.i1.2023.3767

Sonke, J., Rodríguez, L., & Valerio-Shewmaker, M. (2021). Toward a culture of health in the United States: introducing the *HPP* arts in public health supplement. Health Promotion Practice, 22(1_suppl), 5S-7S. https://doi.org/10.1177/15248399211002512

Vickery, J. The (2024). Culture-Innovation Nexus. Towards a new theoretical methodology. Unpublished conference paper, International Conference for Cultural Policy Research Warsaw 19-23.8.2024.

Ward, V. (2024). Between: a fieldnote on moving from futures and foresight to effective action (and back again.) Poli, R. (ed.) *Handbook of Futures Studies.* Edward Elgar, p. 295-317. https://doi.org/10.4337/9781035301607.00028

Wood, J. and Fleck, H. (2025.) 'UK government condemns 'unacceptable' Kneecap comments.' BBC News. 28 April. https://www.bbc.co.uk/news/articles/cm2e0m2d7rdo

Yan, S., Ding, G., Li, H., Sun, N., Wu, Y., Guan, Z., ... & Huang, T. (2016). Enhancing audience engagement in performing arts through an adaptive virtual environment with a brain-computer interface., 306-316. https://doi.org/10.1145/2856767.2856768