# Artificial Intelligence for the Culture and Creative Industries

## Policy Recommendations from Policy Lab 1

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## Key Recommendations

The adoption of Artificial Intelligence by Cultural and Creative Industries (CCIs) is facing challenges including the **need for collaborative innovation ecosystems** that encourage knowledge spillovers, as well as **skills for AI** and **feedback from CCI to AI developers**. At European level, *ekip* Policy Lab participants have identified several recommendations to overcome these challenges:

### RECOMMENDATIONS FOR INNOVATION ECOSYSTEMS THAT FOSTER COLLABORATION AND KNOWLEDGE SPILLOVERS

**At the level of AI and CCI players:**

- **Introducing AI literacy policie**s within CCI startups can demystify AI technologies
- Adopt a culture that views failure as an integral part of the research and development process in SMEs
- Use clear criteria for participation, representation, and transparency in the ecosystems

**At the level of the ecosystem structure:**

- **Enhance access to** trans-sectoral collaboration on a continuous basis, as well as spaces and anchors for encouraging co-creation.
- **Leveraging communities of practice to** facilitating continuous learning and collaboration among peers
- **Implementing interdisciplinary training** at universities and enhancing the training of support organisations within the ecosystems
- **Museum acceleration programmes** to explore new narratives and technologies in a culturally rich context.

**At the level of key framework conditions:**

- **Leverage programmes like Horizon Europe** to conduct research and establish robust production standards that cater specifically to the needs of the CCIs
- **Establish a dedicated monitoring body** for the CCIs at member state level
- Encouraging unique companies to **focus on the non-creative aspects of creative production**

### POLICY RECOMMENDATIONS FOR SKILLS

**At the level of AI and CCI players:**

- Make the **access to AI-skills more co-creative by design** and **stimulate a more diverse skilled workforce in AI**
- **Incentivise a bottom-up approach in setting up collaborations** between AI and CCI actors
- **Trial Cascade funding** to oster co-creative access to AI-skills in the CCIs.

**At the level of the ecosystem structure:**

- **Foster and promote an open skills ecosystem on CCIs by** supporting the creation of an accessible network of AI and CCI actors
- **Organise creative tech events, conferences, or workshops** to support mutual networks between CCIs and the tech sector

**At the level of key framework conditions:**

- A **targeted strategy on AI skill development** in the CCIs, supported by an open-source innovation platform and a focused funding scheme.
- **Develop a skills agenda for CCI**s and facilitate an open-source innovation platform to share existing knowledge and practices among the CCI network
- **Investigate the barriers** between both parties and taking them into account when designing programmes or funding instruments
- **Map and share existing AI practices in the CCI's** among an open innovation platform
- **Targeted funding** could support the development of a complimentary skills set between both AI-developers and CCI actors
- **Tax incentives** could also promote mutual learning between AI-developers and CCI actors.

# 1 Introduction

**Culture and Creative Industries** (CCIs) are an important part of Europe's economy. CCIs encompass a wide variety of sub-sectors. This includes architecture, archives, libraries and museums, artistic crafts, audio-visual (including film, television, video games and multimedia), tangible and intangible cultural heritage, design (including fashion design), festivals, music, literature, performing arts, (including theatre and dance), books and publishing, radio, and visual arts.

CCIs represent 5.3% of the total European Gross Value Added (GVA) of the European Union (EU) economy and employ more than 12 million people in the EU, 7.5% of the European workforce. In 2022, the EU recognised the relevance of CCI for Europe's economic and social development by launching a the EIT Culture & Creativity. The integration of Artificial Intelligence technologies into these sectors has the potential to revolutionise how we create, consume, and understand culture and creativity. Some applications of AI can be used to enhance creativity, to personalise content, or to create new economic opportunities.[1]

In order to discuss the opportunities and challenges of Artificial Intelligence (AI), in particular of the smaller players, independent content creators and artists of the Culture and Creative Industries (CCIs) and to co-create policy recommendations for innovation policies at national and regional level that aim at fostering the innovation ecosystem, *ekip* organised a Policy Lab on the topic **"AI and Culture and Creative Industries".[2]**

The objective of the *ekip* Policy Lab was to discuss the key challenges regarding skills, fostering innovation ecosystems collaboration and knowledge spill overs, technology infrastructure, and access to data. **The outcome from the *ekip* Policy Lab are EU policy recommendations for AI in CCI as reported in this document.** This document summarises the main challenges and opportunities to foster innovation policies that harness the potential in AI for SMES and independent creatives in the CCI sector (Chapter 2). It also formulates a preliminary policy vision (Chapter 3) and maps existing policies and projects at EU and national level (Chapter 4). Based on the identification of current challenges in three key areas (Chapter 5), the final policy recommendations are presented (Chapter 6).

# 2 AI in and with CCI - Challenges and opportunities

The interplay of AI with the CCIs presents a myriad of opportunities, but it also comes with a significant set of challenges. The following opportunities and challenges were discussed in the *ekip* Policy Lab and should be addressed by innovation policies:

- Fostering **innovation ecosystems that stimulate collaboration, networking and spillovers** among innovative, more traditional players, AI experts, creative professionals and the combination of those is essential for innovation, yet it often requires breaking down silos and fostering interdisciplinary partnerships, which can be difficult to achieve.
- The need for a **skilled workforce** capable of harnessing AI's potential is key. Bridging the gap between traditional creative talents, AI expertise, computer programming, and attract and retain talent remains a significant challenge.
- Ensuring equal **access to quality data, computing power** and related technology infrastructure for AI applications is a pressing concern. Access to diverse and comprehensive datasets can be limited, hindering the development of inclusive and culturally relevant AI solutions. These

[1] AI is here is not understood as a single technology, but rather a collection of various technologies in different forms. It is more accurately described as an AI system. As a scientific discipline, AI includes several techniques, such as machine learning (deep learning, reinforcement learning), machine reasoning (including knowledge representation, search, and optimisation), and robotics (which includes sensors and integration into cyber-physical systems). It encompasses a range of techniques such as computer vision, natural language generation, natural language processing, speech recognition, and image recognition among others. The European Commission's Communication defines AI as "*systems that display intelligent behaviour by analysing their environment and taking actions – with some degree of autonomy – to achieve specific goals. AI-based systems can be purely software-based, acting in the virtual world (e.g. voice assistants, image analysis software, search engines, speech and face recognition systems) or AI can be embedded in hardware devices (e.g. advanced robots, autonomous cars, drones or Internet of Things applications).*" (European Commission, (2018), A definition of AI: main capabilities and scientific disciplines, see: https://digital-strategy.ec.europa.eu/en/library/definition-artificial-intelligence-main-capabilities-and-scientific-disciplines)

[2] "Artificial Intelligence in the Cultural and Creative Industries (CCI)"– 25-26 January 2024, Brussels

challenges underscore the importance of thoughtful planning and investment in order to fully harness AI's transformative power in culture and creative industries.

- Questions on the extent to which **copyright-protected content** are used as input to feed AI technologies pose another challenge. In this regard, the EU copyright legislation and most specifically the EU AI Act sets the regulatory framework. In December 2023, the Parliament and the Council agreed that General-Purpose AI (GP AI) systems, and the GP AI models they are based on, will have to adhere to transparency requirements[3] in order to account for the wide range of tasks AI systems can accomplish and the quick expansion of its capabilities, Given that this policy challenge is tackled at EU level, we are suggesting not addressing it in detail in this particular policy lab.

The identification of challenges is based on desk research and existing knowledge on the topic from the *ekip* consortium. The identification of these challenges has been also validated by the findings of the *ekip* Policy Corner on "How can EU policies empower the crossover between design and AI?" organised as part of the Design and AI symposium of the University of Delft on 18-19 October 2023.

The participants were asked to identify challenges and opportunities to foster innovation policies that harness the potential in AI for SMEs and independent creatives in the CCI. The below have been identified:

*Table 1 Challenges and opportunities identified by the participants*

| Challenges | Opportunities |
|---|---|
| • Upholding human creators' rights.<br>• Implementing copyright laws effectively.<br>• Reducing unemployment in sectors traditionally reliant on manual labour.<br>• Streamlining the adaptation of AI technologies across different industries.<br>• Ethical utilization of third-party content.<br>• Enhancing skills and navigating complex information and resources efficiently.<br>• Ensuring transparency in AI data sets.<br>• Managing the inundation of AI-generated content in the market. | • Enabling the creation of creative content by individuals without technical expertise.<br>• Augmenting human creativity with AI tools.<br>• Serving as an ethical watchdog for AI's impact on society and law.<br>• Improving accuracy in market forecasting.<br>• Digitizing and restoring archival content, including old films and damaged records.<br>• Reducing entry barriers for new creators.<br>• Fostering cross-disciplinary collaborations between science and art.<br>• Reducing costs associated with non-creative services.<br>• Broadening creative possibilities and uncovering new revenue streams.<br>• Lowering entry thresholds for creative endeavours. |

In spite of all the existing challenges in the context of AI and CCIs, three were selected as the most relevant ones for the discussions at the Policy Lab:

1. **Innovation ecosystems:** Small Creative and Cultural Industries (CCI) often lacking in-house capacity to develop their own AI solutions, which makes them dependent on external AI specialists. To innovate within the CCI through AI, it is essential to foster close collaboration among a diverse group of players, including creative and cultural professionals, AI and other software developers, research labs, and tech startups specializing in CCI. The success of AI deployment in these sectors is dependent on interdisciplinarity throughout the development process, ensuring that a variety of perspectives are integrated into the AI design process. There is therefore a

[3] European Parliament, (2023), Artificial Intelligence Act: deal on comprehensive rules for trustworthy AI, see: https://www.europarl.europa.eu/news/en/press-room/20231206IPR15699/artificial-intelligence-act-deal-on-comprehensive-rules-for-trustworthy-ai

pressing need for targeted national and regional innovation policies aimed at cultivating the innovation ecosystem around AI and CCI.

2. **Skills:** Developing skills on AI is one of the challenges that the implementation of AI in the CCI' should overcome. Discovering the optimal blend of skills in terms of technical profiles and CCI professionals is necessary to catalyse change with the help of AI technologies. This requires bridging the gap between Tech developers and CCI professionals.
3. **Cultural and creative industry influencing the development of AI:** While there is a strong asymmetric power relation between small CCI players, large companies & online platforms as well as high tech SMEs, creative & cultural professionals can take an important role in shaping the development and uptake of AI.

# 3 Policy vision

The needs of the stakeholders, and how they are impacted by developments in this area also need to be considered. **Artificial Intelligence** that can generate text, images, and audio, often referred to as generative AI, have captured the attention of the CCIs. AI has been seen as a disruptor, as a threat and as an opportunity at the same time. Some of these processes have a long history as the CCIs have gone through a process of digitisation over the past 20 years. Similarly, AI technologies have been experimenting with in the field of CCIs for several decades, although they have taken different paths in different sub-industries (e.g. in video games, music on the one hand and performing arts and museums on the other hand). Significant advancements have occurred in more recent years.

The relation between CCIs and AI systems is two-way: on the one hand ***AI uptake within CCI*** can result in efficiencies and new ways of content development that helps the industry to evolve and on the other hand, as part of ***AI Development***, CCI can play a role in the design process and can contribute to AI systems with higher societal value.

AI can **provide a value added for each stage along the CCI industrial value chains** not just for content creation, but in production (optimisation, efficiency), and distribution of creative and cultural content (personalisation, audience analysis). **AI can boost efficiency, decision-making and output**. AI is very powerful in analysing large-scale data, recognising trends and revealing valuable insights. Examples of AI applications for data analytics to support decision-making include predicting revenues, planning marketing campaigns, or improving the quality of the work delivered. The study (2021)[4] on the opportunities of AI in CCI has explored in detail the key use cases of AI in ten specific CCIs. In the field of news media, the main motivation for news media organisations to implement AI has been to create better researched and more engaging content and connect this more efficiently to audiences, creating value.

AI systems can speed in mining complex procedures based on large volumes of data; support for news planning through event alerts; writing text; an expansion of media coverage to areas that were previously either not covered or not well covered due to a lack of resource; optimisation of breaking news coverage in live feeds; personalised content and support to subscription models. With the use of AI, museums can support their archival, cataloguing and information management applications. They can use AI to better communicate and engage audiences, making interactive exhibitions and underpinning visitor experience management.

Next to these opportunities, AI presents various challenges, and threats for cultural and creative organisations of different types and sizes, depending on their level of digitalisation and background in technology.

AI has been mostly developed and applied by AI labs run by large tech companies and online platforms, tech startups specialised in the CCI, and specialised research centres**.** Developments have been driven both by large companies, and small and dynamic startups globally that generated opportunities for creators and creatives[5]. In many fields, ongoing research highlighted the **asymmetric power relations** in

[4] Technopolis Group, (2022), Study on Opportunities and Challenges of Artificial Intelligence (AI) Technologies for the Cultural and Creative Sectors, see: https://digital-strategy.ec.europa.eu/en/library/study-opportunities-and-challenges-artificial-intelligence-ai-technologies-cultural-and-creative

[5] World Economic Forum (2018). Creative Disruption: The impact of emerging technologies on the creative economy

how AI affects the CCI. Charles Beckett (2019)[6] provides the example of news media where "*there was a significant fear of their newsroom falling behind… and it was a particular problem for small newsrooms, raising the prospect of growing inequality between small and large organisations.*" In the field of music, large companies and digital platforms such as Apple, Spotify and Amazon have been shaping music consumption via AI-driven recommender systems challenging creative professionals (Hodgson, 2021)[7].

From the perspective of the **smaller players such as independent content creators, artists, CCI SMEs etc,** investing in AI development is confronted by many obstacles such as the **cost of AI systems, access to data and computing power,** and their capacity to finance these developments.

Challenges among others are also related to **skills and training** that includes the ability to recruit (pay the salaries) and retain those with AI technical skills. **Collaboration, networks and knowledge spillovers.** Policies and targeted public investments can address these challenges and unlock further potential.

# 4 Policy and project mapping

## 4.1 Current AI policies and strategies

In the recent years, **most European countries have developed national strategies on AI**. According to the AI Watch 2022[8], the first country publishing one was Finland in October 2017 and at the time of publishing the report Belgium, Croatia, Greece and Romania did not have a national AI strategy in place. Since the publication of the AI Watch 2022, Belgium has published its national strategy in November 2022 and the other three countries are still working on their national strategies.

Likewise, the EC has also developed several policy strategies targeting AI. The most recent and relevant one being the **AI Act**[9]. The AI Act is the first-ever legal framework on AI, which addresses the risks of AI and positions Europe to play a leading role globally. Besides the European Commission, international organisations such as UNESCO and OECD have also begun to provide recommendations on the use and development of AI, including in settings related to CCIs (Box 1).

**Box 1 European and international policies and strategies on AI development and regulation**

- *European Commission, (2024), Communication on boosting startups and innovation in trustworthy AI*[10]*:* - the document recommends establishing 'AI' factories to support AI startups by providing access to supercomputing resources, data, and talent, while fostering a trustworthy AI ecosystem aligned with European values. Additionally, it advocates for increased investments, the development of strategic AI applications across various sectors, and strengthening AI-related skills.
- *European Commission, (2021), Communication on Fostering a European Approach to AI*[11]: The communication proposes a regulatory framework focussed on managing AI's risks while promoting innovation, emphasising the development of AI technologies that are human-centric, trustworthy, and aligned with EU values. The strategy focusses on investments in AI development, promoting AI-driven innovation and ensuring that AI systems meet high standards for safety, transparency, and accountability.

[6] JournalismAI,(2019), New powers, new responsibilities – A global survey of journalism and artificial intelligence, see: https://www.journalismai.info/research/2019-new-powers-new-responsibilities
[7] Hodgson T. Spotify and the democratisation of music. Popular Music. 2021;40(1):1-17. doi:10.1017/S0261143021000064
[8] European Commission, (2022), AI Watch – National strategies on Artificial Intelligence: A European Perspective. 2022 edition, see: https://ai-watch.ec.europa.eu/publications/ai-watch-national-strategies-artificial-intelligence-european-perspective-2022-edition_en
[9] In December 2023, the European Parliament and the Council of the EU reached a political agreement on the AI Act. The text is in the process of being formally adopted and translated. The AI Act will enter into force 20 days after its publication in the Official Journal, and will be fully applicable 2 years later.
[10] European Commission, (2024), Communication on boosting startups and innovation in trustworthy AI, see: https://digital-strategy.ec.europa.eu/en/library/communication-boosting-startups-and-innovation-trustworthy-artificial-intelligence
[11] European Commission (2021), Fostering a European approach to Artificial Intelligence (COM 2021 / 205 final), available at https://eur-lex.europa.eu/legal-content/en/TXT/?uri=COM%3A2021%3A205%3AFIN

- UNESCO, (2021), Understanding the impact of AI on skills development[12]: the framework emphasises the need for updated curricula, new teaching methods, and the development of digital literacy and AI-related skills to meet the demands of a changing labour market. It highlights the importance of an equitable access to AI education and the ethical considerations necessary for avoiding the exacerbation of existing inequalities.
- *UNESCO, (2021), Recommendation on the Ethics of Artificial Intelligence*[13]: This recommendation focusses on human rights and dignity based on the fundamental principles of transparency, fairness and human oversight of AI systems.
- *OECD, (2019), Recommendation of the Council on Artificial Intelligence*[14]: The need for robust governance frameworks and international cooperation to manage the risks associated with AI technologies is a cornerstone of this recommendation. It promotes responsible supervision of trustworthy AI to aim for beneficial outcomes for people and the planet.
- *UNESCO, (2018), Ethical Principles for the development of Artificial Intelligence based on the diversity of Cultural Expressions*[15]: The ethical implications of AI are explored in this document together with its impact on diversity, equity and inclusion. It discusses the potential risks posed to marginalised communities, such as bias and discrimination, and emphasises the need for ethical AI development that prioritises fairness and transparency.

However, **national strategies on AI do not often cover the CCIs**. EU member states' national AI strategies typically emphasize the following areas, with not all member states covering them all: 1) a strategic vision to boost competitiveness and innovation, 2) support for research and development, 3) establishment of ethical and regulatory frameworks, 4) education and skills development, 5) enhancement of infrastructure and data management, 6) focus on sector-specific AI applications, 7) fostering international collaboration, and 8) consideration of social and economic impacts.

On the other hand, all member states have national strategies on culture and creative industries. At EU level there is also several strategies and policies that target the area of Culture and creative industries, However, what is needed is a clear linkage and interaction among both policy areas which still creates silos among both.

## 4.2 Existing projects and networks

Contrary to the relative lack of policies and strategies, there are already several existing projects and networks targeting AI and the CCIs. A selected few networks and initiativies which address some of the challenges outlined above, more specifically the need for interdisciplinarity, collaboration, experimentation, and lower barriers to entry for CCIs in the realm of AI, have been included below for reference (Box 2).[16]

**Box 2 AI-related networks, initiatives, and projects in the CCI sector**

**Network and initiatives:**

- **De Effeenaar**[17] (Eindhoven, The Netherlands) - An experimentation location for music creatives, providing room for innovative and high-tech experiments employing tools such as virtual and augmented reality, full body scans, 3D printing and big data.

[12] UNESCO, (2021), Understanding the impact of AI on skills development, see: https://unevoc.unesco.org/pub/understanding_the_impact_of_ai_on_skills_development.pdf
[13] UNESCO, (2021), Recommendation on the Ethics of Artificial Intelligence, see: https://www.unesco.org/en/articles/recommendation-ethics-artificial-intelligence
[14] OECD, (2019), Recommendation of the Council on Artificial Intelligence, see: https://legalinstruments.oecd.org/en/instruments/oecd-legal-0449
[15] UNESCO, (2018), Ethical principles for the development of AI based on the diversity of cultural expressions, see: https://unesdoc.unesco.org/ark:/48223/pf0000375100?posInSet=36&queryId=971eaab1-2626-4387-a5c5-d44cdfe0102f
[16] It should be noted that the below provides a snapshot of the most relevant initiatives but does not include a complete mapping of existing initiatives. The identification has been done via desk research and based on the suggestions of the participants of the policy lab.
[17] De Effeenaar, see: https://www.effenaar.nl/over-effenaar

- **The Lorentz Centre**[18] (Leiden, The Netherlands) – A scientific research accelerator that hosts international scientific meetings characterised by an open and interactive atmosphere. They aim to bring scientific fields and minds together with emphasis on diversity in terms of scientific level, gender, culture and geography.
- **The Centrum Wiskunde & Informatica (CWI)**[19] – Working closely with Dutch Universities through semester programmes, joint research programmes and exchange of scientific talent to transfer computer science and mathematics knowledge to society and business.
- **Creativity Works**[20] – A coalition of organisations and associations representing Europe's cultural and creative sectors.
- **AI Builders Club**[21] - It is a bottom-up initiative that already hosted multiple meetups and AI workshops in Amsterdam and Utrecht over the course of 2023. The growing community encourages effective collaboration between different actors in the evolving world of AI.
- **Responsible AI Challenge**[22] **–** It is organised by Mozilla Builders and it is a one day in-person event to inspire and support the tech community of builders working on innovative AI products and solutions.
- **AI coalition**[23] (The Netherlands) **-** It is an organisation committed to the development and application of responsible AI in the Netherlands.

**Horizon 2020 project and reports**[24]**:**

- **Measuring the Social Dimension of Culture (MESOC)**[25] – it is focused on the measurement of the social dimension of Culture.
- **Europeana Impact Playbook**[26] - The Europeana Impact Playbook is a co-created flexible and iterative guide to designing, measuring, narrating and learning from your impact The online Impact Playbook features revised, streamlined and updated content to help you take your first steps in your impact journey or to look at your impact with fresh eyes.
- **Report on cultural diversity and conditions for authors in the European music streaming market**[27] - Member of the European Parliament Iban Garcia de Blanco drafted this non legislative resolution to improve conditions for authors in the European music streaming market using interviews carried out with representatives from the music sector. It pushes to change the "pre-digital royalty rates" condemning schemes that force authors to accept lower or no revenues in exchange for greater visibility.

**Other measures:**

- **The Cultural and Creative Sectors Guarantee Facility**[28] – Established by the European Commission, the European Investment Fund (EIF) provided EUR 6 million to Finora Capital to unlock favourable loans for SMEs in the cultural and creative sectors in 2020. More support is also made available to SMEs coming from Estonia, Latvia, Lithuania, and Finland.
- **The Common European Data Space for Culture Heritage**[29] – The flagship initiative of the European Commission to accelerate the digital transformation of Europe's cultural sector.

[18] The Lorentz Centre, see: https://www.lorentzcenter.nl
[19] Centrum Wiskunde & Informatica, see: https://www.cwi.nl/en/
[20] Creativity Works, see: https://www.creativityworks.eu
[21] AI Builders Club, see: https://www.aibuilders.club
[22] Responsible AI Challenge, see: https://future.mozilla.org/archive/builders-challenge/
[23] AI Coalition, see: https://nlaic.com/en/
[24] Please note that additional reports and policy recommendations can be found in the next section.
[25] MESOC, see: https://www.mesoc-project.eu
[26] Europeana Impact Playbook, see: https://pro.europeana.eu/page/impact#:~:text=The%20Europeana%20Impact%20Playbook%20is,your%20impact%20with%20fresh%20eyes.
[27] European Parliament, (2023), Report on Cultural Diversity and Conditions for authors in the EU music streaming market, see: https://www.europarl.europa.eu/doceo/document/A-9-2023-0388_EN.html
[28] The Cultural and Creative Sectors Guarantee Facility, see: https://www.eif.org/what_we_do/guarantees/news/2020/european-support-for-smes-in-cultural-and-creative-sectors-with-6-million-guarantee-to-finora-capital.htm
[29] Common European Data Space for Cultural Heritage, see: https://www.dataspace-culturalheritage.eu/en

# 5 Current challenges

Participants of the *ekip* Policy Lab identified several challenges. Despite differences across sectors, geographies, and the maturity level of the innovation ecosystem, there are also many common challenges around AI in CCI. The main challenge areas identified revolved around three levels:, namely the existence of collaborative innovation ecosystems, skills for AI, and the influence of CCIs on AI development. For each level, this Chapter also summarises key points at the level of AI and CCI players, the ecosystem structure and the key framework conditions.

## 5.1 Innovation ecosystems that foster collaboration and knowledge spillovers

Small CCI organisations often lack in-house capacity to develop their own AI solutions, which makes them dependent on external AI specialists. Innovating within the CCI through AI requires **close collaboration among players with different background** such as the various creative and cultural players, AI and other software developers, research labs, and tech startups in CCI.

**Supporting partnerships and co-design solutions** among these stakeholders is important in order to nurture the emergence of strong AI-driven innovation ecosystems specialised in solutions for the cultural and creative sectors. In order to achieve this, collaborative environments, cluster initiatives, and other networking opportunities can facilitate beneficial interactions that lead to tangible collaborative AI projects in the creative and cultural industries and also with the CCI.

Another challenge is related to the **capability to scale up current use cases** that are promising but need further impetus to fully roll out. There is a need for more scalable pilots and de-risking opportunities, and this needs an innovation ecosystem to embrace long-term developments.

**Interdisciplinarity is a specific theme** as part of collaboration. Research community and many industry representatives have been calling for more interdisciplinary approaches towards AI development. But in reality, it is very difficult to achieve - projects claim to be interdisciplinary even if they are incredibly siloed. The contribution of different disciplines and perspectives is not valued equally throughout the AI design process (e.g. humanities sciences are only included in the testing and validation).

### 5.1.1 At the level of AI and CCI players

**The value proposition of AI within the CCIs** presents a complex landscape, characterised by its lack of clarity and uniformity. There are varying levels of AI integration across collaborative networks, and the integration differs across sectors and countries. The adoption and involvement with AI practices is not consistent across all CCIs, leading to significant divides. This creates a challenge for effectively formulating and communicating the value that AI brings to these ecosystems. This is particularly true when there is a need to pivot towards more commercial objectives, a shift that is crucial, yet not universally applied, especially within the public sector. Recognising and addressing these discrepancies is critical, which emphasises the importance of establishing a methodical approach to identify and prioritise sector-specific needs and opportunities for AI integration, and to understand its added value.

**Independent artists and SMEs frequently encounter challenges due to the significant time and budget constraints** required to adapt to new tools. Combined by the fact that not all entities manage to scale up effectively, many find themselves trapped, unable to progress, at the expense of innovation. Furthermore, the landscape is complicated by AI startups that lack specialised knowledge tailored to the CCIs, thus not enabling these small entities to leverage AI to their advantage. This gap in domain-specific understanding by AI startups creates a barrier to effectively serving the unique needs of independent artists and SMEs within the CCIs.

**Innovation is not a routine activity for many in the CCIs,** which ties with the challenge of scaling up effectively and maintaining the business. Organisations often prefer to remain within their comfort zones, especially when there is no immediate pressure to change. For most, innovation does not constitute a routine aspect of daily business operations, often hindered by constraints on budget and time, or sometimes by a lack of access to necessary resources. The aversion to risk further complicates the willingness to engage in innovative projects, raising the question of whether it is feasible to take such risks. Yet, the diffusion of innovation is crucial for creating new values and ideas. AI has the potential to disrupt

established norms and create new "rules of the game", challenging the current business models of existing players. This disruption brings to the forefront discussions on copyright, highlighting the necessity of navigating these conversations carefully.

### 5.1.2 At the level of the ecosystem structure:

**There are still several silos that prevent innovation from taking place for CCIs in the AI domain.** The innovation ecosystem, particularly in the EU, faces challenges stemming from a prevalence of siloed approaches, within insufficient cross-disciplinary collaboration. This lack of synergy contributes to an imbalance in the availability and effectiveness of EU-wide solutions. Additionally, there is a noticeable lack of holistic understanding of the opportunities and challenges present at national level, further complicating the landscape for innovation.

Especially for SMEs, the introduction and utilisation of new tools are critical for innovation and growth, yet these tools are not always readily accessible or understandable. There is a clear need for these resources to be made available in a more user-friendly manner, acknowledging that familiarity with such tools requires time.

**Lack of interdisciplinary partnerships** and alliances between AI and CCI persist. This divide is partly due to the creative sector being outside the main currents of knowledge exchange. Identifying who is the anchor actor that drives the system's functionality is important. Participants brought up the example of established collaborative networks within specialised areas like the wind-water or wind-energy sectors. They bring together participants from various backgrounds, ranging from startups to more established enterprises, to engage in meaningful discussions about the latest and most relevant topics in their field. The goal is not to only identify key actors within these discussions but also to ensure that every engagement results in mutual benefits in order to foster productive collaboration.

**Intermediaries and brokers are key to facilitating connections, but often lack awareness of this potential.** While these entities are important for bridging gaps between different sectors, their visibility and awareness of their capabilities can sometimes be limited. To enhance collaborative dynamics, there is a need to build upon existing networks and platforms to foster synergies. To further leverage connections, the role of convening spaces and the engagement of trusted brokers are vital for breaking down silos.

**Access to resources such as data and infrastructure relevant for AI are different across** the CCI industries. Likewise, **there is a growing recognition of the importance of embracing open-source alternatives over closed systems**. This shift not only fosters a more inclusive and collaborative environment, but also aligns closely with the integration of public values in technological solutions and IT, further encouraging collaboration and shared progress across the field.

### 5.1.3 At the level of key framework conditions:

**CCI+AI companies are often not seen as relevant** by venture capitalists for funding or by innovation incubators to get access. There is a lack of transparency in project evaluation processes. The prevailing gatekeeper culture tends to favour projects that are better understood and more aligned with their preferences, inadvertently side-lining innovative ideas that may not fit within conventional parameters.

In addition, the technological and business driven nature of AI does not always guarantee acceptance, especially in scenarios where trust in its solutions is lacking. Startups therefore find themselves up against a high threshold for financing. The opacity surrounding the criteria and evaluators determining project funding eligibility further complicates the landscape, alongside financing mechanisms that have not evolved to accommodate the unique requirements of these sectors.

The specificity of calls for projects can inadvertently exclude some SMEs from applying for certain funds, indicating a need for a more inclusive approach. Additionally, EU policy actions could be more precisely adapted for activities and needs of the CCI sectors. Funding mechanisms for innovation and experimentations are also necessary, and are often less encompassing compared to other programmes for Research and Innovation in other subsectors such as Horizon Europe.

**There is uncertainty around intellectual property (IP) issues, especially in the context of AI integration**. This uncertainty is keenly felt within the music industry, where creators often express reservations about

employing AI tools. Their scepticism is rooted in the legal ambiguities surrounding the interaction with intellectual property, highlighting a need for clearer guidelines and assurances to navigate this emerging landscape confidently.

## 5.2 Skills for AI

Developing skills on AI was identified as one of the challenges that needs to be addressed. Discovering the optimal blend of skills in terms of technical profiles and CCI professionals is necessary to catalyse change with the help of AI technologies. This requires bridging the gap between Tech developers and CCI professionals.

On the one hand, CCI professionals need to gain insights into the opportunities AI can offer them, while on the other hand, Tech developers need a better understanding of the CCI sector. This could possibly help overcome the lack of AI expertise, computer programming and Tech talent within the CCIs.

In the context of a scarce AI talent pool, empowering and (re)training the existing workforce with the necessary skills could increase the supply of AI-skilled professionals in the CCIs. Furthermore, the existing asymmetric power relations in how AI affects the CCIs, leading to inequality between small and large players in the field, should be taken in account when talking about skills development. An open innovation ecosystem in which different stakeholders across subsectors collaborate on the development of AI skills, may improve spill overs and crossovers that are opportune for the whole of the CCIs.

**EU trends and initiatives**

In July 2020, the Commission presented an update to the Skills Agenda for Europe with a new five-year plan to help individuals and businesses develop more and better skills. Thanks to the recognition of the CCIs as one of the 14 industrial ecosystems in Europe's industrial strategy, a "Pact for skills[30]" around the CCIs was announced.

In 2021 a roundtable on the CCI ecosystem skills pact, Creative Pact for skills, was held. It was part of a series of sectoral roundtables with representatives from the 14 Industrial ecosystems in Europe. The roundtable was followed by a 60-stakeholder working group chaired by Creative Skills Europe[31], the European Creative Business Network and The Bureau of European Design Associations. Together they came up with a "Creative Pact for Skills-Manifesto[32]".

Another important part of the skills agenda is the creation of so called "Blueprint alliances for sectoral cooperation on skills[33]". Under such an alliance, stakeholders work together in sector-specific partnerships to develop and implement strategies to address skills shortages in these sectors.

At the moment there are two relevant blueprint alliances for the CCIs:

- **Cyanotypes (2022-2026)[34]:** a pan-European project (2022-2026) addressing the CCIs sector's needs and skills gaps. It aims to boost the provision of new skills and address skills mismatches by designing and creating new curricula for higher education (HE) and vocational training.

  **Charter Alliance (2022-2025)[35]:** the European Cultural Heritage Skills Alliance, brings together and represents the whole range of the cultural heritage sector in Europe. Aimed at guaranteeing Europe has the necessary cultural heritage skills to support sustainable societies and economies.

### 5.2.1 At the level of AI and CCI players

***Lack of willingness/motivation.*** The reasons for this challenge appeared to be difficult to detect. The resistance against new technologies in certain CCI subsectors origins among others in the fear for loss of

[30] Homepage of Pact for skills (europa.eu)
[31] Creative Skills Europe – { European platform for employment and training in the audiovisual and live performance sectors }
[32] 'Creative Pact for Skills Manifesto' is now ready for endorsement - ECB Network
[33] Blueprint for sectoral cooperation on skills - Employment, Social Affairs & Inclusion - European Commission (europa.eu)
[34] cyanotypes – anticipating creative futures
[35] Home CHARTER - European Cultural Heritage Skills Alliance (charter-alliance.eu)

quality and loss of jobs. Therefore, knowledge about the possibilities that AI brings to the CCIs should become accessible for all actors and the labour market perspective should also be included in the discussion. Information about how AI will enhance the quality of work and change jobs in the CCIs could (partly) resolve the resistance between AI skills development in the CCIs.

***Lack of knowledge***. This is a two-way challenge. On the one hand AI developers seem to lack the knowledge about the CCIs, while on the other hand, CCIs seem to lack digital knowledge, especially on AI. AI developers seem to be highly focused on the technical part of AI and therefore not aware enough of end-users like CCIs. Action-based skill development to foster both data and AI skills is lacking. Therefore, education in AI is of utmost importance. CCIs should learn how AI can be used as a tool to support and enhance their professional activities. The integration of intellectual property in the skills trainings would eliminate some concerns of CCI actors on the use of AI.

In addition, a lack of examples of AI expertise within the CCIs is detected. One of the participants proposed that intermediaries could be educated and take up the role of inspiring examples within the field. They could spread their skills and knowledge through an open innovation ecosystem, which is visible and accessible for all CCI actors in the field. Another participant indicated that there are already a lot of tools available on working with AI in the CCIs, which are missing an ecosystem or platform to be communicated and spread among the CCIs.

### 5.2.2 At the level of the ecosystem structure

***Lack of scope.*** Besides the hard skills, soft skills concerning AI in the CCIs could be developed. There should be attention to the shift of working, presenting etc. Long term connection between the different subsectors could be created through diversified methods as peer-to-peer learning, human-centred methodologies etc.

***Lack of diversity.*** One challenge which is mostly less present in discussions about AI in the CCIs, but very actual, is the lack of diversity within the Tech world. There exists a need for a more diverse reflection of society in the Tech world concerning language, age, gender, level of skills, region etc. Also, AI skills itself should be diversified. Both academical and non-academical skills are important, to diversify AI users, both type of skills could be considered.

AI could use a more poetic, inclusive and interdisciplinary approach to present the whole society. This could be the cross-over where AI and CCIs complement each other.

### 5.2.3 At the level of key framework conditions

***Lack of resources.*** Participants of the policy lab stressed the lack of resources as one of the most important challenges in the development of AI skills in the CCIs. The lack of time, space and training were mentioned several times by different participants. Especially small CCI actors struggle with this challenge, which results in an expanding gap between smaller and bigger CCI players in the field. Pathways to trainings, a R&D mechanism as driver for implementation, open sourcing tools, living labs, investment in skills were proposed by the participants to overcome this challenge.

## 5.3 Cultural and creative industry influencing the development of AI

While there is a strong asymmetric power relation between small CCI players, large companies and online platforms as well as high tech SMEs, creative and cultural professionals can take an important role in shaping the development and uptake of AI. This role can take different shapes, such as:

- More interdisciplinary approaches are essential to the development of AI, not only including the perspective of CCI at the stage of validating AI models but also from the start in the design process of AI
- CCIs can help catalyse the responsible development of AI. This includes discussions around fairness, accountability, transparency, and considerations of societal impact, which are essential aspects of responsible AI development
- CCI can contribute to the adoption of AI in our society and economy by bringing into focus the importance of values, lived experiences and sociocultural meanings.

In relation to this challenge, there are several initiatives already working on the topic. The initiatives are: The Dutch AI Coalition[36] and the S+T+ARTS.[37].

The main question to be answered in relation to this challenge was focused on the challenges that CCIs have when it comes to the shaping of developments in AI. A set of sub questions such as: How innovative CCI SMEs can be encouraged to get involved in shaping the developments of responsible AI? How to promote a culture of ethical AI? How to involve CCI stakeholder better in the EU AI policy discussions? How to make the voice of the CCI stakeholders heard in the development of national AI strategies? Were also discussed.

### 5.3.1 At the level of AI and CCI players:

***Data related challenges.*** One of the main challenges discussed was on the need of data to follow FAIR principles[38]. There is a big consensus on this topic. Likewise, another big topic was on the need of transparency; clearly sating how the data is being used, where it comes from and how it will be used. This is also linked with the need of ethical developments, to ensure the proper use of data as well as a good understanding of the type of data at hand.

### 5.3.2 At the level of the ecosystem structure

***Financial challenges***. There are two main topics. One is focused more on the growth and development of companies, also linked with the existing different business models within the CCI sector and the different perspectives on growth, with not all actors wanting massive growth but preferring a more steady approach with a more linear approach. The growth models are also linked with disconnection with the existing funding programmes. For example, in the case early-stage funding, there is a bigger gap since a proof of concept is required.

In general, cash flow is very fragile for many actors in the CCI industry. This creates difficulties with the funding and payment structure within the sector, with in consequence makes it hard to not only attract people but also to retain it and managing their expectations.

Another challenge is the difficulty to assign financial value to the creation of societal impact as it is the case of CCIs. The existence of big players with limitless resources is also a risk for smaller companies. This was the case of Google taking forward the work of a small French company, thanks to their availability to take the work to the next level.

### 5.3.3 At the level of key framework conditions

**Technology related challenges.** Another relevant source for challenges is focused on the technological development. There is an increased used of AI tools and other algorithms in the CCI sector. However, it also comes with strong scepticism on AI, since the stakeholders believe, AI will lead to the disappearance of jobs.

However, technology is at the moment driving the innovation in all sectors, not only in the case of CCIs. This is not that much a challenge but an opportunity for CCI actors to learn from other sectors and to implement those learnings. Likewise, due to the technology driving all development, CCIs are also left behind due to their lack of preparation to participate in the uptake. They are lacking the knowledge to join the movement.

**EU Funding challenges**. Regarding the challenges related with EU Funding, there is a need for more cross sectorial calls also linked with the diverse sectorial background CCI players come from.

# 6 Policy Recommendations

Overcoming the policy challenges faced by CCIs related to AI

## 6.1 Innovation ecosystems

**At the level of AI and CCI players:**

[36] The NL AI Coalition: https://nlaic.com/en/
[37] S+T+ARTS: https://starts.eu
[38] FAIR stands for Findable, Accessible, Interoperable and Reusable.

- **AI literacy policies:** Introducing AI literacy policies within CCI startups can demystify AI technologies, as well as their legal implications, enabling creative professionals to harness these tools effectively in their projects.
- **Destigmatising failure:** Adopting a culture that views failure as an integral part of the research and development process in SMEs encourages innovation and risk-taking, recognising these experiences as valuable learning opportunities.
- **Knowledge and communication valorisation efforts:** To stimulate an emphasis on value proposition, proactive and thoughtful communication, clear criteria for participation, representation, and transparency are essential. Valorising CCIs for AI startups and communication should take place on innovation where creative value chains can benefit from specific policy frameworks. An example can be through creative desks.

**At the level of the ecosystem structure:**

- **Enhancing access to collaboration:** Creative Europe's initiative to become more accessible for collaboration represents a significant step towards fostering cross-border and interdisciplinary partnerships, enabling a richer exchange of ideas and resources. There is a need for trans-sectoral collaboration on a continuous basis, as well as spaces and anchors for encouraging co-creation. Regional funds should also foster synergies and accessibility in universities. Universities should act as critical players in the CCI ecosystems.
- **Leveraging communities of practice:** Existing communities of practice offer valuable networks for sharing knowledge and experiences, facilitating continuous learning and collaboration among peers.
- **Interdisciplinary training:** Implementing interdisciplinary training at universities and enhancing the training of support organisations within the ecosystems can equip individuals with the diverse skills necessary for innovation. This approach, coupled with the provision of shared computer facilities, can serve as a gateway to navigating and thriving within innovation ecosystems.
- **Museum acceleration programmes:** These programmes can serve as catalysts for innovation, providing a platform for startups to explore new narratives and technologies in a culturally rich context.

**At the level of key framework conditions:**

- **Policy articulation for better CCI inclusion:** This involves leveraging initiatives like Horizon Europe to conduct research and establish robust production standards that cater specifically to the needs of the CCIs. Key to this process is ensuring that innovation policies are transparent and tailor-made for the CCIs, enabling a more accessible and understandable framework for creative practitioners. Additionally, enhancing the visibility and promotion of living labs programs can provide invaluable opportunities for real-world experimentation and innovation within the CCIs. Evaluating existing support structures to identify successful practices and areas for improvement will be crucial in refining the support offered to the CCIs. Furthermore, the role of national governments in facilitating spaces for collaboration and the integration of AI technologies within the CCIs cannot be overstated. To this end, it is recommended that each member state establishes a dedicated monitoring body for the CCIs. Such a body would also play a critical role in enforcing compliance standards and ensuring that policies are effectively articulated and implemented
- **Specialisation in creative production:** Encouraging unique companies to focus on the non-creative aspects of creative production allows creative talents to concentrate on innovation and artistic expression, optimising the production process.

## 6.2 Skills for AI

**At the level of AI and CCI players:**

The challenge on making the **access to AI-skills more co-creative by design and stimulate a more diverse skilled workforce in AI** could be tackled by providing a guiding framework for AI and CCI actors to collaborate.

- Policy regulations to incentivise a bottom-up approach in setting up collaborations between AI and CCI actors can foster co-creative initiatives among them.
- Cascade funding, the European Commission mechanism to distribute public funding to support start-ups, SMEs, scale-ups etc. in the development of digital innovation, could foster co-creative access to AI-skills in the CCIs.

**At the level of the ecosystem structure:**

The challenge **on fostering and promoting an open skills ecosystem on CCIs where actors across the different subsectors can learn from each other together with tech industry** and easily find partners could be tackled by supporting the creation of an accessible network of AI and CCI actors.

- The organisation of Creative Tech events, conferences, workshops etc. can support the Tech sector and CCIs by building a mutual network. Policy measures could guide AI and CCI actors with less interest in each other's topics to this network.
- Intermediaries can play a facilitation role in the development of such a network (e.g. Mozilla builders).

**At the level of key framework conditions:**

The challenge on the **lack of resources** (investment, time, knowledge, infrastructure, data…) of small players in the CCI to develop tailored AI-skills could be tackled by a targeted strategy on AI skill development in the CCIs, supported by an open-source innovation platform and a focused funding scheme.

- A group of CCI/tech/other actors could write a manifesto on the skills-agenda for CCIs. This could be translated into an effective strategy which is revised periodically (based on yearly data-tracking to identify new challenges on AI in the CCIs).
- Policymakers could facilitate an open-source innovation platform to share existing knowledge and practices among the CCI network. They should take up the role as demonstrators of good practices, by making use of the developed skills and technologies that are already available in the field of AI and CCIs. Moreover, they could facilitate collaboration between the bigger Tech firms and smaller CCI players within the network.
- Policymakers could identify the instruments and subsidies needed to support the skills development of AI in the CCIs and adapt them to upcoming challenges, as described in the effective policy strategy (see above). These instruments and subsidies could be communicated to governments to implement them in the national funded programmes on Tech in the CCIs. Eventually, bigger Tech players could be nudged to contribute resources that are beneficial to SME's and freelances, so they get time to learn a specific skillset, experiment etc.

The challenge on the **creation of a complimentary skill set, a better mutual understanding and more touchpoints between AI-developers and CCI actors** could be tackled by detecting the barriers between both parties and taking them into account when designing programmes or funding instruments.

- First, the existing AI practices in the CCI's could be mapped and shared among an open innovation platform that is accessible for CCI actors with an interest in the development of AI skills. Such a platform could guide CCI players in the field to the right experts and foster enhance knowledge sharing among them.
- Targeted funding could support the development of a complimentary skills set between both AI-developers and CCI actors. Some funding instruments that the participants brought to the table during the break-out sessions: funding for projects in which AI-developers and CCI actors collaborate, funding for job exchanges between the CCI and Tech sector, funding for media campaigns with a specific focus on the creation of AI skills development in the CCIs, funding for the integration of AI skills development in curricula of cultural and creative education, funding for more mixed attended seminars, internships, incubators, open spaces, etc. for AI & CCI actors in educational settings. Besides funding, providing tax incentives could also promote mutual learning between AI-developers and CCI actors.

- A more direct policy measure could be to oblige AI-companies to contribute to community by collaborating with SME's and share their resources with them.

## Methodological note

The policy recommendations were co-created using the *ekip* Policy Lab methodology.[39] The methodology designed for the development of policy recommendations as part of a Policy Lab is divided in two consecutive steps:

1) **Scoping and identification of the problem:** the first step is the identification of the problem and its scoping. The topic is identified and scoped via desk research, interviews with stakeholders and the input from the different consortium partners. As part of the Policy Lab preparatory work, a scoping document is shared with the participants to prepare them ahead of the day and to ensure a common understanding among participants.
2) **Policy formulation as part of the Policy Lab:** The Policy Lab is a moment of co-creation with the participating stakeholders. The goal of the policy formulation session is to develop, refine and propose together with the participants different policies for the challenges at hand. The Policy Formulation is organised around three steps:
    a. **Reverse brainstorming:** the reverse brainstorming aims at identifying the gaps in policies that address the challenges under discussion. This section can be guided with the following questions: what are the gaps you can identify to solve the ˚challenge˚? What kind of intervention do you see lacking? What can be done to address the challenge? Which type of intervention would be needed?
    b. **Clustering:** the identified policy solutions then have to be clustered in an affinity diagram based on the category they belong to. Once the categorisation is completed, the proposed solutions are analysed.
    c. **Matrix:** the final step is the prioritisation of the proposed solutions based on their relevance and the policy level they are targeting (local and regional, national and EU level).

[39] Deliverable D10.1 Methodology of Policy Labs