CYANOTYPES Strategic Skills for Creative Futures

WP2 Strategic skills for creative futures
D2.2 Addressing Urgent Skills Needs for CCI sector

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Grant Agreement Number: 101056314

Deliverable: D2.2 Addressing Urgent Skills Needs for CCI sector

Project Start date: 01-09-2022 **Duration**: 48 months

Coordinator: HKU

Deliverable number:	D2.2
Work Package number:	WP2
Document status:	FINAL
Dissemination level:	PU

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DOCUMENT SUMMARY INFORMATION

Project title:	CYANOTYPES Strategic Skills for Creative Futures
Short project name:	CYANOTYPES
Project number:	101056314
Start date of the project:	01-09-2022
Duration of the project:	48
Project website:	https://cyanotypes.website

D2.2 Addressing Urgent Skills Needs for CCI sector

Work Package:	WP2 Strategic Skills for Creative Futures
Deliverable number:	D2.2
Deliverable title:	Addressing Urgent Skills Needs for CCI sector
Due date:	15/09/2023
Actual submission date:	15/12/2023
Author(s) and organization:	Florian Schneider, NTNU
Dissemination Level:	PU
Status:	Final

Revision history:

Version	Date	Author	Comment
v.0.1	28/10/2023	Florian Schneider	Initial version
V.0.2	15/11/2023	Becky Riches, MATERAHUB	Version for Internal Review
v.0.3	29/11/2023	Gerin Trautenberger, ECBN	Final review
v.1.0	15/12/2023		Final version

Quality Control:

	Who	Date
Checked by internal reviewer	Becky Riches, MATERAHUB	15/11/2023
Checked by WP leader	Gerin Trautenberger, ECBN	29/11/2023
Checked by Project Managers	Caroline van Leuven, HKU	09/12/2023
Checked by Project Coordinator	David Crombie, HKU	15/12/2023

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ACKNOWLEDGEMENTS

CYANOTYPES is a project that has received funding from the European Union's Erasmus+ Programme under Grant Agreement No **101056314**. Please see https://cyanotypes.website for more information.
The partners in the project are HKU - University of the Arts Utrecht, ECBN - European Creative Business Network, ECHN - European Creative Hub Network, ELIA, EfVET – European Forum of Technical and Vocational Education and Training, Materahub, WKO – Wirtschaftskammer Osterreich, YNFT – Screen Skills Committee Sweden, SGI – Swedish Games Industry, FAINCE – Fashion Innovation Centre, Mediarte, All Digital, MyData Global, WRS – Wirtschaftsforderung Region Stuttgart, CIKE – Creative Industry Kosice, UAAV – University of Applied Arts Vienna, NTNU – Norwegian University of Science and Technology, Lusófona University, HBKS – Saar University of Fine Arts, EQ Arts.

The content of this document is the result of the work developed by the partners in the context of the project.

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1 Approach

1.1 Purpose

The call for proposals for Alliances for Sectoral Cooperation on Skills (implementing the 'Blueprint') featured a focus "on digital skills as they are increasingly important in all job profiles across the entire labour market." Also, it highlighted that 'the transition to a circular and greener economy needs to be underpinned by changes to qualifications and national education and training curricula to meet emerging professional needs for green skills and sustainable development."

Task 2.2 responds to the additional requirement to "rapidly address urgent skills needs in occupations in an industrial ecosystem resulting from the Covid-19 crisis and the digital and green transition." [1]

Therefore, T2.2 was designed to develop within the first 12 months of the project a set of responses that are capable to address these most urgent skills needs.

The task has been proposed assuming that the multiple crisis situation: pandemic, digital shift and green transition reveals a fragmentation of the CCI sector which further enforces the impact of the crisis on individual, business, and sectorial level and, in doing so, exponentially aggravates its detrimental effects.

Understanding that the multiple crises are closely interrelated, and further evidenced by a highly fragmented and diverse sector, the task proposal concluded that a holistic view is more effective in addressing these challenges by identifying cross-cutting links, rather than dealing with each crisis separately.

The broad goal of this task is to defragment the sets of skill in the CCI. It aims at building a virtuous cycle that produces sustainable results of learning processes that cut across sectors while augmenting one another, mutually strengthen and boosting the absorptive, adaptive, and transformative capacity of the creative sector as a whole.

The specific challenge of this task is to explore, develop and disseminate new forms of cultural and artistic entrepreneurship by systematically strengthening cross-disciplinary teamwork skills to increase the creative confidence of cultural and creative professionals within digital and networked environments. Rather than reducing, the focus will be on embracing the complexity at stake through a series of unexpected encounters that require a collective intelligence that runs transversally through the sectors.

This will allow for new, more comprehensive and critical understandings of the value and impact of art, culture and creativity in a world that demands systemic change and changes rapidly. It will respond to the increasing demand of the contemporary labour market for skillsets that enable colleagues to tackle complex tasks based on effective cooperation across disciplines. At the same time, every enterprise in the cultural and creative sectors, independently of its size and relevance, is confronted with the urgency to shift to climate

[1] ERASMUS-EDU-2021-PI-ALL-INNO-BLUEPRINT Topic Description

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neutrality – a challenge that will become particularly relevant in the post-covid recovery process.

1.1.1 Post-Covid

The CCI have been among the most negatively affected sectors by the Covid-19 pandemic. The measures implemented to contain the spread of the contagion highlighted a fragmented sector with unstable working conditions and limited ability to adjust without substantial income loss. As emphasised by the *Research for CULT Committee* study, the venue- and visitor-based subsectors suffered the most severe impact and "the crisis has highlighted the very vulnerable position of many non-standard workers in the CCS, such as artists, freelancers or temporary workers."[2] The challenges encountered by the CCI sector amidst and in the wake of the Covid-19 pandemic highlighted the necessity for novel skillsets and a re-evaluation of academic models.

1.1.2 Digital Shift

Digital shift refers to a next wave of digitisation which will spur societal transformations of unprecedented scale and extent. It is commonly understood as the "practice of redefining models, functions, operations, processes and activities by leveraging technological advancements to build an efficient digital business environment – one where gains (operational and financial) are maximised, and costs and risks are minimised."[3] Furthermore, the digital shift implies a rapid transformation that extends the impact of automatization from office work and manufacturing towards the production of creative subjectivity which has so far considered an exclusive privilege of the human species, or of certain parts of it.

1.1.3 Transition to a circular and greener economy

The climate crisis is still widely conceived as an abstract reality that shapes lived experience but has not yet fully embodied or redefined it: a threat whose full dimensions are not quite tangible yet, whose schedule looms even as the thing itself hasn't fully arrived. More and more people sense how it has begun to reshape the contours of their lives, but it has not yet redefined them. From a purely technological viewpoint, the transition to a circular and greener economy seems manageable, in the sense of the basic mechanisms driving it and the technical and economic capacity to reduce carbon emissions — for instance, with renewable energy sources. However, the obstacle isn't technical; instead, it is a mix of political and social factors. Changing these factors is the challenge: unwinding, reframing and reconfiguring habits, conventions and mindsets will require redefining creative skills and innovation in ways that prioritise open-ended, collective, holistic impacts over isolated demonstrations of technical process without regard to their consequences and further complications.

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[2] IDEA Consult, Goethe-Institut, Amann S. and Heinsius J. 2021, Research for CULT Committee – Cultural and creative sectors in post-Covid-19 Europe: crisis effects and policy recommendations, European Parliament, Policy Department for Structural and Cohesion Policies, Brussels

[3] Chartered Institute of Procurement & Supply (CIPS): Digitalisation in procurement and supply 2020 https://www.cips.org/intelligence-hub/member-only/procurement-technology-digitalisation-guide

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1.2 Challenges of the Triple Transition for the CCIs

In his report “A New Era for Europe” the High-Level Advisory Group convened by European Commissioner for Economy, Paolo Gentiloni, offered its recommendations for addressing post-Covid challenges and fostering sustainable growth and global stability. These include implementing the so-called Triple Transition: environmental, digital, and social. The three dimensions of the Triple Transition are considered to be interconnected. For instance, forgetting the social costs could make the path to sustainable development unsustainable. Equally, “without sufficient progress on digitalisation, and more broadly on promoting innovation, the macroeconomic costs of a more ambitious agenda for green transition could make such transition socially and thus ultimately politically untenable.” [4]

1.2.1 Environmental transition

The environmental transition refers to the urgent need to rapidly transform all aspects of our societies into more sustainable and regenerative modes, to avoid the worst effects of the climate and bio-diversity crisis. The CCI is covering a wide spectrum of challenges within its subsectors, ranging from fully sustainable small-scale production to some of the highest polluting industries in the world, such as fast fashion[5] and construction and architecture[6].

While having been hit hard by the pandemic many areas of the CCIs have hardly managed to recover. Adapting to the challenges of the climate transition is widely seen as an additional task that is likely to overwhelm many creatives and their small and medium sized enterprises, not to mention large-scale institutions that rely on ever-scarcer sources of public funding.

However, there is a widespread commitment, and many examples of successful approaches already exist, from protecting cultural heritage to carbon neutral large-scale events; unfortunately due to sectoral fragmentation, they usually remain isolated to specific practices or regions.

1.2.2 Digital transition

The digital shift entails a complete digital transformation encompassing all societal layers. This transformation has accelerated owing to the next wave of AI and the so-called fourth industrial revolution. Furthermore, it has been hastened by the urgent need to respond to the Covid-19 pandemic, heightened geopolitical tensions and the climate crisis. Artists and cultural professionals must adapt to the general digital transformation, but they also face a specific challenge as creative professionals. The emergence of generative algorithms capable of creating cultural content has shaken up the cultural and creative sectors around

[4] European Commission, Directorate-General for Economic and Financial Affairs, Carraro, C., Coeuré, B., Dhand, O. et al., A new era for Europe – How the European Union can make the most of its pandemic recovery, pursue sustainable growth, and promote global stability, Publications Office of the European Union, 2022, https://data.europa.eu/doi/10.2765/584797

[5] https://www.weforum.org/agenda/2020/01/fashion-industry-carbon-unsustainable-environment-pollution/

[6] 2022 Global Status Report for Buildings and Construction

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the world. For example, in 2023, thousands of writers within the film and TV industry in Hollywood protested for better regulations concerning their working conditions. The writers harbour concerns over the potential threat posed by generative AI to their job security.

1.2.3 Social transition

The social transition reflects the need for Europe to protect its democracies and reduce inequalities wherever possible, from health to taxation. Matching the skills of the population to the needs of the economy has a particular role to play in this context. “It demands a re-evaluation of educational training, help for workers left unemployed as industries shift, and building attractive employment conditions. Countries must reckon with not only immediate decisions but also ones that will impact the generations that follow.”[7]

1.3 Polycrisis

After the pandemic, in the midst of the digital shift, environmental transitions and a war in Europe, how to respond to the complexity of multiple crisis situations?

1.3.1 Skills in multiple crises situation

Increased responsiveness and responsibility are the main characteristics that are common across all of the cultural and creative sectors and industries. As transferable skills and transversal skill sets they provide a high degree of independence and self-sufficiency which is essential to secure skills resilience in a Polycrisis world.

1.3.2 Creative confidence and co-agency

The broad aim of a strategy that responds to urgent skills needs in Polycrisis situations is to strengthen creative confidence. This requires structured approaches to encourage the discovery of new forms of working together, develop participatory skillsets and, on that basis, generate multiple capacities to act together.

1.3.3 Urgent needs and ecosystem approach

Responsiveness and responsibility and the skillsets for co-agency will be ensured by an ecosystem approach that is “transformative in the range of opportunities it offers to broaden understanding beyond linear approaches to the sector and its development”[8]. It acknowledges the complex realities of the CCIs while also allowing for anticipatory forms of innovation — notably by recognizing multiple approaches to skills and competences, whether as inputs to or outputs of the wider system. In principle, this supports a more inclusive, diverse and participatory understanding of skillsets, in particular against the backdrop of a triple transition: climate, digital and social.

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[7] European Commission, Directorate-General for Economic and Financial Affairs, Carraro, C., Coeuré, B., Dhand, O. et al., *A new era for Europe – How the European Union can make the most of its pandemic recovery, pursue sustainable growth, and promote global stability*, Publications Office of the European Union, 2022, https://data.europa.eu/doi/10.2765/584797

[8] Barker, V. (2019). "The democratic development potential of a cultural ecosystem approach." The Journal of Law, Social Justice and Global Development: 86-99.

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The ecosystem approach embodies developing an integrated, holistic view of skills, competences and qualifications. It implies provisional, actionable generalizations and recommendations based on preliminary results, and it allows for identifying potential inflection points or tipping points at every scale. The ecosystem approach will be equally relevant in the three loops of the Triple Learning Loop. The evaluative criteria for the creative ecosystem approach are system level, rather than aggregating the performance of individual actors.

1.4 Competency frameworks

The terms 'competency' and ‘competencies’ focus on someone’s personal attributes or inputs. They can be defined as the behaviours (and technical attributes where appropriate) that individuals must have, or must acquire, to perform effectively at work.

'Competence' and ‘competences’ are broader concepts that cover demonstrable performance outputs as well as behavioural inputs. They may relate to a system or set of minimum standards needed to perform effectively at work.

A ‘competency framework’ is a structure that sets out and defines each individual competency (such as problem-solving or people management) required by individuals working in an organisation or part of that organisation.[9]

1.4.1 GreenComp

The European sustainability competence framework GreenComp is a policy action and a catalyst to promote learning on environmental sustainability in the European Union, supporting the ambitions of the European Green Deal. GreenComp has identified a set of sustainability competences to help learners develop "knowledge, skills and attitudes that promote ways to think, plan and act with empathy, responsibility, and care for our planet and for public health."[10]

The GreenComp offers a set of sustainability competencies structured in four categories:

- *Embodying sustainability values*: valuing sustainability, supporting fairness and promoting nature;
- *Embracing complexity in sustainability:* systems thinking, critical thinking and problem framing;
- *Envisioning sustainable futures:* futures literacy, adaptability and exploratory thinking;
- *Acting for sustainability:* political agency, collective action and individual initiative.

The GreenComp provided a structured and overarching umbrella from which T2.2 could explore and focus on how these transversal competences play out for CCIs.

[9] https://www.cipd.org/en/knowledge/factsheets/competency-factsheet/

[10] Bianchi, G., Pisiotis, U., Cabrera Giraldez, M. GreenComp – The European sustainability competence framework. Bacigalupo, M., Punie, Y. (editors), EUR 30955 EN, Publications Office of the European Union, Luxembourg, 2022

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1.4.2 EntreComp

The Entrepreneurship Competence study EntreComp was launched by the JRC in January 2015 with the aim to develop a common conceptual approach, which could help to develop entrepreneurial skills at European level.

"EntreComp defines entrepreneurship as a transversal competence, which applies to all spheres of life: from nurturing personal development, to actively participating in society, to (re)entering the job market as an employee or as a self-employed person, and also to starting up ventures (cultural, social or commercial)."[11]

The EntreComp provided the starting point to develop an understanding of artistic entrepreneurship that brings in the entrepreneurial dimension of the challenges of the triple transition while highlighting the capacities of the CCI to contribute and create value for society.

1.4.3 DigComp

The Digital Competence Framework for Citizens (DigComp) identifies the key components of digital competence and provides a common understanding of what digital competence is. It outlines five main areas:

- *Information and data literacy: To articulate information needs, to locate and retrieve digital data, information and content.*
- *Communication and collaboration: To interact, communicate and collaborate through digital technologies while being aware of cultural and generational diversity.*
- *Digital content creation: To create and edit digital content. To improve and integrate information and content into an existing body of knowledge while understanding how copyright and licences are to be applied.*
- *Safety: To protect devices, content, personal data and privacy in digital environments.*
- *Problem solving: To identify needs and problems, and to resolve conceptual problems and problem situations in digital environments.*[12]

The DigComp Framework is a strong fundament for developing responses to the urgent skills needs of the CCI in the digital shift. It identifies both universal needs and competencies that are required for citizens, but which also overlap with industry and professional needs. T2.2 have further built on the general outline provided by DigComp and identified four key topics relevant for the CCI towards an understanding of 'collective intelligence' (see 3.2).

[11]

[12] DigComp framework https://joint-research-centre.ec.europa.eu/digcomp/digcomp-framework_en

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2 Methods

2.1 Desk research

The desk research consisted of a first mapping of strategies to face and adapt to the challenges of the triple transition from three perspectives:

1. Initiatives to adapt to the green and digital transition coming from organisations and networks in the CCI,
2. Scientific literature and interim results from research projects addressing the urgent challenges for the CCI, and
3. Policy frameworks providing visions and directions for the CCI.

The desk research provided a first overview of the current state of the sector's capacities and ambitions to face the triple transition, which helped to sharpen the focus of T2.2 and to develop an approach on how to respond to the missing gaps that are not yet adequately addressed, in close dialogue with the results of T2.1.

The mapping of the three perspectives revealed that, at the time of the desk research, there was a rapidly increasing and widespread awareness and demand for knowledge and guidance on how to respond to the challenges of the green and digital transition from actors in the CCIs. Our initial mapping was supported by an analysis of the report *Creative industries and the climate emergency,*[13] which showed that the literature published on this topic came mainly from initiatives within specific sub-sectors of the CCI, often with a national or regional scope, and often commissioned and organised by sectoral interest organisations, networks or unions:

"Many Creative Industries have taken the initiative themselves, with a growing range of research and partnerships, mostly not peer-reviewed, guiding their climate initiatives and decision-making. The level of published research on climate impacts varies significantly between sub-sectors and academic- industry collaborations tend to reflect immediate practical needs"[14]

The majority of published literature on the topic is therefore in the form of handbooks and manuals with practical advice on how to reduce the carbon footprint and environmental impact of one's own production, aimed at cultural institutions and micro and SMEs.

Similar to the literature on CCIs facing the green transition, the united efforts of CCIs responding to the digital shift can be characterised as driven by networks, interest groups and workers' unions trying to keep up with the incredibly rapid technological development in order to protect current models of ownership of creative products from new ways of extracting and exploiting creative labour.

[13] Creative industries and the climate emergency, October 2022, report published by the Creative Industries Policy and Evidence Centre in collaboration with Julie's Bicycle and BOP Consulting, https://pec.ac.uk/research-reports/creative-industries-and-the-climate-emergency

[14] ibid. P 5.

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Equally important are the significant number of artists and creatives contributing to positive change for people, societies and ecosystems addressing the challenges of the triple transition, but this aspect is difficult to map out due to a general lack of data of the CCIs, and inadequate taxonomies imported from other industries, as the result of the H2020 CICERONE research project shows.[15]

The initial mapping of T2.2 showed that there was a need for a deeper understanding of cross-cutting issues and a broader approach to enable the discovery of not yet visible or unknown aspects. The discussion of the urgent needs for the CCI to face and adapt to the challenges of the triple transition was informed by the immediate concrete needs of each sub-sector in a short-term response mode, lacking the space and time to ask radical questions, to consider wider structural and systemic changes, and to develop an agency and capacity to be strategic rather than reactive. This need informed the development of the workshop format into an open format that would allow for insights and new ideas to emerge in open and prepared discussions.

2.2 Expert and stakeholder consultations

The initial mapping helped to sharpen the focus of the workshops and provided an overview of relevant expertise and perspectives for the further work. A wide selection of experts and stakeholders was invited to provide input and share their insights and understanding of the challenges. The invited experts and stakeholders were introduced to the approach of T2.2 in preparatory consultations providing them with a short brief to frame their contributions. All experts and stakeholders gave a 10-15 min presentation on the state of the art and their unique perspectives framed as a provocation point. The following experts and stakeholders have contributed to T2.2:

- Alessandro Rancati, (Livepods)
- Annela Anger-Kraavi (University of Cambridge)
- Cathy Mulligan (Imperial College London)
- David Crombie (University of the Arts Utrecht)
- Denis Jaromil Roio (Dyne.org)
- Dubravka Jurisic (Creative FLIP, Goethe-Institut)
- Esko Reinikainen (MyData)
- Francisco Javier Iglesias Gracia (La Fura dels Baus)
- Fredrik Timour (Fashion Innovation Center)
- Jan Vincent Jordan (RWTH Aachen University)
- Jakob Bilabel (Aktionsnetzwerk Nachhaltigkeit)
- Joe Lockwood (LAB Genalguacil)
- Johanna Leissner (Fraunhofer)
- Katrien Reist (freelance curator, art producer/facilitator)
- Lisa Lang (Climate KIC)

[15] Pratt, A.C., Bennet, T. (2022) Everything you always wanted to know about data for the Cultural and Creative Sector production system, but were afraid to ask: Part 2 – Assembling disparate data sources, and preparation for reporting them. (CICERONE report D4.3) https://doi.org/10.5281/zenodo.6482865

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- Marta Materska-Samek (Jagiellonian University)
- Martijn Blom (Impact Funds Advisor EVPA)
- Michael Hardt (Duke University)
- Piero Dominici (Università degli Studi di Perugia)
- Puria Nafisi Azizi (Dyne.org)
- Rita Grácio (Lusófona University)
- Soenke Zehle (Academy of Fine Arts Saar)
- Vikash Katta (Eventwood)
- Yngve Dahle (Entreprenerdy)

2.3 Abductive inference and iterative consultations

In the face of the uncertainties, ambiguities and fears posed by or associated with the triple transition, any and all strategies founded on deduction from best practice, currently known facts or indisputable truth appear to be unequal to the challenge.

Abductive reasoning, in contrast, incorporates failure, uncertainty and doubt rather than seeking to eliminate them. This approach is far better suited to countering complexity, contestation and plurality of data, as well as the absence of clear or established baselines. Thus, generalisation by means of abductive analysis enables specific research methods to acknowledge and investigate multiple forms of value creation, in particular in the art and culture.

Abductive reasoning starts with recognising patterns of renewability and results in hypothetical solutions. These patterns are conceived as the building blocks for processes of constant interpretation and re-interpretation. This approach can lead to a preliminary provisioning of resources in a nevertheless sustainable fashion. Careful considerations of relations at stake prepare the ground for gaining the capacity to respond to multiple crisis situations. Abductive reasoning in research is characterised by iterative processes of working in a deft alteration between empirical observation and development of speculative theoretical conceptualisations that offer the best explanations of the observations.

This pragmatic, iterative process helps to build interpretations of robustness, that allow researchers to navigate situations characterised by fragmentation, lack of data, concurrent versioning or fluid knowledges. It enables them to test preliminary conclusions systematically across a variation of situations and contexts.

2.4 Expert in teamwork

The methods for facilitating group work in the workshops were drawn from the NTNU inter-disciplinary, master's level course, Experts in Teamwork[16]. The methods used in the course work towards accomplishing the goal of developing and exercising cooperative skills to work with people from different backgrounds, experiences, skills and knowledge. The course takes the approach of experience-based learning: "Instead of learning theory about cooperation using a knowledge-based form of learning, you gain cooperative skills

[16] Experts in Teamwork https://www.ntnu.edu/eit

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through experience-based learning, which involves experiencing and reflecting on teamwork in practice."

The workshops were structured and facilitated so that the problem formulations that the teams addressed were developed by the teams themselves, based on their combined expertise and experience.

Other exercises and cases for discussion were designed to give an opportunity for participants to extend their perspective on their own academic competence, and help to make the most of other people's knowledge in interdisciplinary teamwork.

In the beginning, to map and share the diversity of disciplines and perspectives in the groups we conducted an exercise called "the competence triangle". The exercise was adapted to discern capabilities and capacities from members of the group belonging to different CCI sectors. In each group, team members shared the theoretical knowledge, practical skills, personal capabilities based on the participants practice and urgencies experienced.

3 Workshops

The core activities of T2.2 concerned the analysis of "Urgent Skills Needs for the CCI Sector". Therefore, three workshops were prepared, organised and concluded according to the Description of Activities (DoA).

The aim of the three workshops was to enable invited participants, experts and stakeholders to co-develop, simulate and illustrate solutions to the urgent skills needs in the CCIs and to provide a basis that could be tested and evaluated from different perspectives and in different ways in the further work of the project. We did this by designing a dynamic workshop structure and hybrid learning situations with an open framework to avoid simplifying the complex challenges or pre-determining outcomes.

During the preparation phase, the workshop concepts were developed and elaborated. It was presented and discussed with the consortium partners in a series of online meetings and at the consortium meeting. It was also publicly presented and agreed at the T2.1 and T2.3 workshops.

For all three workshops, project participants and high-level experts were invited to share their specific understanding of urgent skills needs. Both experts and workshop participants contributed their experience and knowledge from different backgrounds, covering the whole skills landscape and range of perspectives.

They included policy experts, cultural theorists and philosophers, top scientists, as well as pioneering technologists and creative practitioners in the various fields at stake.

The range of participants reflected the breadth and depth of the challenges at stake. Workshop participants represented all sectors of the CCI, from opera, music, performance, fashion, architecture, design, film, visual arts and cultural heritage.

The workshops followed the 'Experts in teamwork' (EiT) method, an award-winning pilot project developed by NTNU and run for more than 20 years with all the university's master's students. For the purpose of the Urgent Skills workshops, the EiT teamwork

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methodology was adapted to the specific challenges and situations of the three workshops (see 2.6).

All workshops took place in a hybrid set-up at the NTNU office in Brussels. All sessions were recorded and will be reviewed and re-evaluated in the follow-up process. The main contributions of the invited experts will be made available online.

All experts were introduced and prepared through one-to-one meetings and interviews, which ensured the high quality of their contributions. The experts have also continued to contribute their recommendations on how to address the most urgent skills needs beyond the actual meetings.

The diversity and variety of questions and perspectives, the answers and advice that emerged from all three workshops have produced overwhelming results, ranging from best practice examples, professional insights, concrete solutions to high-level strategic considerations and theoretical underpinnings.

3.1 Rethinking Urgencies Brussels, April 27 and April 28, 2023

The Rethinking Urgencies workshop was organised by NTNU in Brussels on 27-28 April.

The workshop was attended by 17 in-person participants and 38 registered online participants. The main goal of the first workshop was to start the process of mapping urgent skills needs across all sectors of the CCI. After the pandemic, in the midst of the digital shift, green transitions and a war in Europe, we discussed with invited experts and participants how to respond to the complexity of multiple crisis situations. Besides the participants from the consortium partners, the workshop featured contributions by invited experts such as: Lisa Lang, Alessandro Rancati, Joe Lockwood, Martijn Blom, Katrien Reist, Dubravka Jurisic, Johanna Leissner.

The aim of the workshop was to deepen the understanding of what makes the need for skills in CCIs urgent today. The workshop was organised in two parts: first a series of presentations by invited experts, followed by a breakout session in which participants developed scenarios where urgent skills are needed, contributing to a broader understanding of the challenges.

The discussions in the breakout groups were shared and summarised in a final plenary session at the end of the workshop. The conclusions prepared the ground for the following two workshops on the digital shift and the green transition.

Five future scenarios have been developed:

1. **Students are responsible for their own learning methods and outcomes as the building blocks of shared creativity**

Art and culture are no longer merely an indulgence or the exclusive privilege of a creative class. Creativity has become imperative in almost every aspect of value generation across a wide range of productions and circulations. It is a precondition for claiming co-ownership of the transition and a circular and regenerative approach to aesthetics.

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2. **Cross-disciplinary teamwork addresses the complexity of issues at stake and stages new relationships between knowledges in distributed architectures of cognitive labour**

The complexities of multiple crisis situations have altered learning and are challenging traditional value systems, forcing practitioners to reconfigure educational evolutions from scratch, because they overwhelm individual agency. By calling for new strategies of collaborations, the concepts of co-agency and collective intelligence enable deeper understandings of how different social, political, cultural and geographical environments shape what can be done, where and to what degree.

3. **Artistic entrepreneurship allows for reframing urgencies by anticipating future strategies of valorisation**

Artistic entrepreneurship in the climate transition enables fast paced interactions and problem-solution validation. It exemplifies and anticipates valorisation strategies as circular, regenerative processes that engage a multiplicity of actors, sectors and disciplines. Key is to gain critical understanding of the multiple roles, overlaps and potential relationships between the natural and technical aspects of the world. On that basis, it experiments with new forms of impact and value.

4. **Rather than adapting or contributing to, artists and creatives drive societal transitions**

Real world laboratories for social imagination experiment with the power to create affect but also with the power to be affected. Art and culture drive the climate transition by rethinking heritage and anticipating new forms of value, by engaging citizens to co-create indicators, document progress and claim co-ownership of the transition.

5. **Re-contextualising innovation**

Innovation is recontextualised and decolonised by questioning conventional cliches and their narratives of conquering new territories as if they were blank spaces, of pushing the boundaries as if there were no limits for growth, of realising an entrepreneurial self as if the only measure was monetary value.

3.2 Activating collective intelligences

Brussels, July 6 and July 7, 2023

The second in the series of three workshops examining Urgent skills needs in the cultural and creative sectors and industries explored the relationship between creative production in the CCIs and the digital environments within which they operate.

Which skills are urgently needed in the current digital shift? A rapid transformation that extends the impact of automatization from office work and manufacturing towards the production of creative subjectivity — so far considered an exclusive privilege of certain parts of the human species. This generates widespread worries and concerns raised in a heated public debate, while in many sectors of the cultural and creative industries machine learning and generative algorithms have been an integral part of their production since quite a while.

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The workshop set out to critically investigate the potential of collective intelligences that bring together human and non-human actors. Invited guests and participants discussed skills strategies corresponding to five frameworks of co-agency. Within these frames, possible intersections of artistic and artificial intelligences will be anticipated as the result of human-machine collaborations or other assemblages of hybrid creativity, pre-emptive control, affect and knowledge production. These frameworks of co-agency and the potential of shared creativity and collective intelligences have been investigated from different perspectives.

The first day of the workshop took place in a hybrid set up, allowing for both in-person and remote participation. The program addressed a series of key topics:

- A short history of automatic writing: Generative AI in the view of modernist aesthetics from sampling, remixing, cut-up and other forms of early stage collective intelligences. How can we learn from this rich archive? This session featured contributions by Soenke Zehle, David Crombie
- How to learn navigating abstract realities in which everything becomes an image that is reducible to text and vice versa: everything becomes a text that can be turned into an image? This session featured contributions by Florian Schneider, Cathy Mulligan, Piero Dominici.
- From big data literacy to public ownership of meta- and connection data: How to reclaim personal data mined by tracking usage, attention and behaviour to recycle them for creative purposes? This session featured contributions by Esko Reinikainen, Vikash Katta, Francisco Javier Iglesias Gracia
- Whatever happened to Web3? The future of encryption, decentralisation, token-based economics and their relevance for the creative sectors. This session featured contributions by Cathy Mulligan, Denis Jaromil Roio and Puria Nafisi Azizi (Dyne.org)
- The first day concluded with a discussion of the question: Is generative AI the very end or just the beginning of open source?

The second day from 10 am to 4 pm was limited to participants in-person.

The program consisted of breakout sessions according to the five themes of the first day. In small groups participants investigated the question: What are the specific skills needs, teaching methods, and learning outcomes? The outcomes of the breakout sessions were presented in a plenary discussion about the next steps of implementation.

Organised by NTNU in Brussels on 6th and 7th of July, the workshop was attended by 25 in-person participants and 50 registered online participants.

3.3 Driving the green transition Brussels, September 14 and 15, 2023

The third in a series of three workshops addressing urgent skills needs in the cultural and creative sectors aimed to discuss and co-create learning formats that provide the skills in need for cross-disciplinary collaborations engaging a wide range of different stakeholders in the green transition.

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How can artists and creatives help to build much-needed capacities for implementing change on systems level? The main outcome will be educational modules that indicate and share creative confidence to drive green transformation processes.

Invited guests and participants discussed skills strategies corresponding to three main themes:

1. What skills are urgently needed in the cultural and creative sectors to adapt to the challenges of the climate crisis?
2. How can skills and competencies in art, culture and creativity effectively contribute to the societal transformation towards sustainable economies?
3. Which skills sets would enable art and culture, heritage, and creativity to drive the green transition?

The search for strategies and techniques for revealing, persuading, and inspiring the climate transition inevitably turns and returns to art and culture. Their power lies not just in the power to act and create affect but also in its complement: the power to be affected — to adapt to radically changing circumstances, to incorporate the terms of those changes, and nevertheless to persist or subsist.

More than merely changing the subject, this can reframe how to imagine what a subject is or could be. It allows to raise the question of justice in the climate transition and develop forms of co-agency that scale up, out, deep. The peculiar skills and capacities running transversally across the cultural sectors, to question and to transform the world in place, are the key to overcoming the obstacles to climate transition.

The workshop featured contributions by Fredrik Timour (Fashion Innovation Center), Marta Materska-Samek (Jagiellonian University), Yngve Dahle, (Entreprenerdy), Jan Vincent Jordan (RWTH Aachen University), Michael Hardt (Duke University), Jakob Bilabel (Aktionsnetzwerk Nachhaltigkeit), Annela Anger-Kraavi (University of Cambridge), Johanna Leissner (Fraunhofer).

The first day of the workshop took place in a hybrid set up, allowing for both in-person and remote participation. The second day from 10 am to 4 pm will be limited to participants in-person.

The workshop was attended by 31 in-person participants and 97 online registered participants.

4 Outcomes

The main outcomes address the urgencies of multiple crises and triple transition in different ways and on multiple levels:

- *Conceptually* by highlighting the abilities to reframe urgencies
- *Systematically* by applying the triple loop learning method
- *Critically* by rethinking the fundamental aspects of affective labour
- *Practically* by suggesting a grammar of skills
- *Evidentially* by documenting, validating and verifying skills

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4.1 Reframing urgencies

Over the past decade abductive reasoning has become an important methodological approach in design thinking and co-design processes (see 2.3). The strength of abductive inferentialism is to allow for systematic approaches to “frame creation”, the framing and re-framing practices that feature so prominently in creative processes. During this task abductive reasoning turned out as particularly useful in terms of its combination of exploratory and explanatory reasoning, which underpins everyday thinking as well as scientific inference.

While using abductive reasoning as the main method, this task has produced outcomes which all relate to the main challenge of “reframing urgencies” applied on four levels that will be outlined further:

- Reframing urgent skill sets according to the triple loop learning model (see 4.2.)
- Reframing the power to create affect and be affected confronted with the urgencies of the triple transition
- Reframing most urgent needs in terms of transitive and intransitive skills (see 4.4)
- Reframing the urgencies to reskill and upskill as a challenge to document and verify skills credentials

4.2 Triple Loop learning

Following the triple-loop learning model of CYANOTYPES, a number of urgent skill needs have been investigated using both quantitative (Task 2.1) and qualitative methods (see 2).

At the heart of this approach lies an understanding of creativity as a continuous combination and recombination of anticipatory, participatory and emancipatory practices. Each of these loops requires specific skills that have been analysed and rated as increasingly urgent.

These skills run transversally through and across many still isolated stages of participation in co-creation processes, anticipating future forms of value and emancipating our imagination from conventions, business as usual and expectations of the same.

This triple loop encourages and enables artists and creatives to complement circular economies with circular aesthetics: experimenting with the means of productive imagination in non-linear ways; open-ended, systematic, and generative approaches to building a transformation literacy and capacity through the application and use of renewable resources, distributed technologies, inclusive co-creative approaches, abductive reasoning and iterative prototyping of possible solutions to complex challenges.

Their urgency reflects the need for a new ethics and aesthetics of coming together and acting together in response to — and in anticipation of — the growing challenges of forced and unforced mobility and displacement in the age of climate crisis, societal transformations and large-scale transitions triggered by, for instance, the rapid development of generative AI and machine learning technologies.

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Amidst widespread apathy, despair and fear, it has become most urgent to make place and create spaces for communities of learning and practice that are emerging according to the three loops and their skillsets.

4.2.1 Participatory skillsets

Participation is often used in moral terms, or in relation to values that transcend judgement, or as a value in itself. A first loop of participatory skill sets distinguishes four main methodological frames of claiming to take part

Collocation means sharing spaces and access, while outcomes and intentions may differ between participants. *Example*: Embedded artistic research

Collaboration can also take place with an adversary. It is understood as a form of working together that does not imply common goals or shared intentions. *Example*: P2P networks

Co-creation combines different methods and disciplines for shared goals. *Example*: Sprints or hackathons

Cooperation relies on an explicit division of labour between participants located in different entities. *Example*: Any form of institutional collaboration.

According to these frames, the following learning goals, skill sets, learning outcomes, and proficiencies have been identified when it comes to participatory skill sets and learning how to work together:

COLLOCATION	COLLABORATION	CO-CREATION	COOPERATION
Learning how to share a place or a space and access to tools	Learning how to develop one's own goals and objectives	Learning how to work together for a common goal	Learning how to rely on others and become reliable
Observational skills	Conflict handling skills	Teamworking skills	Management skills
Enriched perspectives	Boosted creative confidence	Increased openness and curiosity	Extended scope of own capacities
Ability to work while being embedded in alien contexts	Ability to generate results in open or remote situations	Ability to act in dynamic and flexible frameworks	Ability to be creative within and according to divisions of labour

4.2.2 Anticipatory skillsets

In contrast to participatory strategies, which encompass the different ways of participating in the present, four methodological frameworks of anticipatory skills should be

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distinguished in order to gain the ability to work with scenarios of possible futures and to make them actionable even before they actually happen.

Extrapolation is a method to conclude about a future based on the estimation of a continuation of current trends and developments. *Example*: Science Fiction

Simulation is a technique to mimic operations in a model that represents the complexity of different developments through imitation. *Example*: Building Information Modelling (BIM) and other strategies of digital twinning

Imagination is an effort of contemplation and contraction to “invent modes of existence or possibilities of life”. *Example*: Novel writing

Pre-emption is resistance against something that is supposed to happen. It intervenes into a process to prevent an outcome from happening. *Example*: Creative strike

According to these frames, the following learning goals, skill sets, learning outcomes, and proficiencies have been identified when it comes to anticipatory skill sets and learning how to navigate actionable futures:

EXTRAPOLATION	SIMULATION	IMAGINATION	PRE-EMPTION
Learning how to detect patterns within the present and project them into a future	Learning how to build a model to mirror and scale actions and behaviour	Learning how to determine a time and a space conforming to a concept	Learning how to intervene in a way that prevents undesired outcomes
Analytical skills	Abstraction skills	Conceptual skills	Critical thinking skills
Better perception of the present conditions, obstacles and barriers	New insights into emerging risks and opportunities	Deeper understanding of diverse aspirations and motivations	Increased capacities to recognize threats and develop mitigation strategies
Ability to navigate current situations	Ability to discover new potentials	Ability to explore multiple dimensions	Ability to limit possible damage

4.2.3 Emancipatory skillsets

Building on the double loop of participatory and anticipatory strategies, emancipatory skillsets are all about transforming context, self-conceptions, and points of view. It is about openness to finding new or even radical perspectives. Emancipatory skills are not just about making a claim but claiming the grounds on which claims can be made.

Unlearning is not about forgetting, but about being able to choose an alternative mental model or paradigm. "When we learn, we add new skills or knowledge to what we already

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know. When we unlearn, we step out of the mental model to choose another one".[17] *Example*: Cubism

Distantiation operates as a corrective that counteracts to a unilateral emphasis on attachment stressing that belonging is not the same as being caught up. *Example*: Brechtian theatre

Reappropriation is the process of reclaiming ownership through a change of meaning which is supposed to lead to personal or socio-political empowerment. *Example*: Reverse classroom

Transformation refers to the process of changing not only structures but also collective subjectivities. *Example*: Cross-creativity

According to these frames, the following learning goals, skill sets, learning outcomes, and proficiencies have been identified when it comes to emancipatory skill sets and learning how to reframe urgencies:

UNLEARNING	DISTANTIATION	REAPPROPRIATION	TRANSFORMATION
Learning how to question oneself and challenge mental models	Learning how to modulate abstraction and empathy	Learning how to reshape conditions under which meaning is produced	Learning how to learn by reframing urgencies
Self-critical reflection skills	De-familiarisation skills	Reframing skills	Transformative skills
Increased confidence to question existing mindsets	Novel approaches to reveal contradictions	Higher degrees of responsiveness and responsibility	Systematic approach to deal with ambiguities and paradoxes
Ability to think outside the box	Ability to make the invisible visible	Ability to claim ownership of transitions	Ability to appreciate uncertainty and embrace risks

4.3 Power to create affect and be affected

A second, major outcome of the task was generated in the third workshop “Driving the green transition” when both the power to create affect and the power to be affected, have been investigated.

The triple transition confronts artists and creatives with a tremendous opportunity to recollect and revisit a fundamental capability which sets their skills apart from the skills that

[17] Mark Bonchek: Why the Problem with Learning Is Unlearning (Harvard Business Review, November 3, 2016: https://hbr.org/2016/11/why-the-problem-with-learning-is-unlearning

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are required in other sectors and industries: skills that relate to their genuine power to create affect.

The search for skills, strategies and techniques for revealing, persuading and inspiring the triple transition inevitably turns and returns to art and culture. Their power lies not just in the power to act and create affect but also in its complement: the power to be affected — to adapt to radically changing circumstances, to incorporate the terms of those changes, and nevertheless to persist or subsist is an innate power of art and culture. The peculiar ability, to question and to transform the world in place, is the key to overcoming the obstacles to the societal transitions of our times.

Creating affect means to create emotions, to make people feel moved and touched by a creative product such as a work of art, for instance. Creating affect feeds the cliches and stereotypes how art, culture, and creativity are supposed to contribute to society: Providing beautiful illustrations of sad scientific facts, activating a passive audience through entertainment, decorating an otherwise ugly or boring space.

But what about the complementary capability? What about the power to be affected?

Multiple crisis situations teach a lesson that is currently being transformed from a common place into the most urgent challenge to be tackled: We are all subjected to external forces that are much bigger and much more powerful than us.

Experiencing the power to be affected means first of all to surrender to external forces. But in doing so, we reject the concept of a sovereign individual, the idea of a master or entrepreneur who pretends to manage to gain control over these external forces and put them into use for the purpose of the ideological identity of a self and an own. Michael Hardt wrote:

> A focus on affects certainly does draw attention to the body and emotions, but it also introduces an important shift. The challenge of the perspective of the affects resides primarily in the syntheses it requires. This is, in the first place, because affects refer equally to the body and the mind; and, in the second, because they involve both reason and the passions. Affects require us to enter the realm of causality, but they offer a complex view of causality because the affects belong simultaneously to both sides of the causal relationship. They illuminate, in other words, both our power to affect the world around us and our power to be affected by it, along with the relationship between these two powers.

In today's attention economy the power to be affected seems to be reduced to likes, hearts and thumbs up. In fact, counting affection, analysing patterns of being affected has become the business model of platform economies. By interpreting and anticipating user behaviour, by training algorithms with cultural heritage and products of past creativity, these economic models extract value from the creative sector (in the widest sense).

In a much closer view, the meaning of statistics shifts dramatically: from making statements about what is true to manipulations of what one should do. Equally, the power to be affected seems to have become an exclusive privilege that is (hypocritically) reserved to victim identities.

How can we learn and teach to be affected? How can we learn how to teach and how can we teach how to learn to regain and re-appropriate our very specific powers to be affected.

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Ironically, the traditional way to learn about the power to be affected has been the method of replication: copying the masters. However, examples of such learning environments have expanded across histories. They range from the white cube to the dance floor, from the secession to the off theatre, from the cinema of the cinephiles to the early internet.

A specific understanding and tacit knowledge of the power to be affected has always been the business secret of subcultures, artistic avant-garde movements, and most likely: any other form of successful entrepreneurship model in culture and creativity.

On both individual and collective level, it encourages us to revisit and re-introduce concepts of alienation, de-gentrification, and de-centring, such as exodus, ek-stasis or ecstasy, making the familiar unfamiliar, making strange or queer.

The capacity to create safe spaces for radical experimentation is genuine to culture and creativity and it really sets our sectors and industries apart, since we learn about the power to be affected:

1. How can these capabilities help us today to tackle the challenges of the climate crisis and the next wave of automatization and digitization? Demystifying the impact of generative AI and learning how to re-use it as an instrument to create affect and be affected. This requires a revaluation of creative value and the value of creativity.
2. Realising the power that results from being affected by the climate crisis, corresponds to capacity of art, culture and creativity to call into question all that exists. It can teach us that everything that is human made, can be changed by humans.

Due to its capacities to create affect and be affected, the cultural and creative sectors and industries have manifold, highly valuable and largely untapped potentials to adapt and contribute to the triple transition.

4.4 Transitive and intransitive skills

Based on a revaluation of the power to be affected another important outcome of Task 2.2 “Addressing Urgent Skills Needs” has been generated.

The challenges of the triple transition demand a radically different approach to skills than the conventional approach distinguishing between hard skills versus soft skills or active versus passive competencies. Instead, a general distinction can be made between:

- *Transitive skills* representing the ability to target one or more objectives, e.g. sound engineering, data visualization, game design. In principle they refer to practices of learning and unlearning *some* thing and characterise the first and the second loop of Triple Learning
- *Intransitive skills* referring to transformation and transition processes rather than objectives, e.g. critical or design thinking, fermentation across disciplines, documentary practices. Addressing the challenge of learning how to learn, they appear in the third loop of Triple Learning.

Such a distinction between transitive and intransitive skills is particularly helpful to […]

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Skills do not have a value, but a *valence*. This valence is pure potential. It allows, for instance, to shift the focus from transversality and criticality to co-agency and cross-creativity. The concept of skills *valence* is particularly relevant in collaborative settings indicating the actual capacities and abilities to act together across actors, sectors, and disciplines: Does it increase or decrease our ability to act?

4.5 Documentation and verification

A Techno DJ works as a creative transformation manager, a graphic designer turns into a prompt engineer, and a social worker experiments with participatory art strategies: How can these three creatives document and demonstrate their skills and competences in a way that reflect their dynamic realities, respects their privacy and gives them full control over their own portfolio of qualifications?

One of the main outcomes of T2.2 concerns the documentation and verification of skills, as such. To unlock untapped potentials in the cultural and creative industries (CCIs) requires a secure and verifiable system for skills credentials for skills, based on a decentralised identity management infrastructure.

In T2.2 a working group was established to follow up on the practical implementation of digital skills credentials in a field that is characterised by new opportunities and exciting challenges.

- an ecosystem approach integrating technical implementation in real-world use scenarios
- demand-driven, realistic and sustainable strategies to further develop the project beyond the funding frame.

5 Conclusion

The complexities of multiple crisis situation require a structured approach to encourage and empower artists and creatives to

- Turn the fragmentation of the sector from a weakness into a strength
- Develop core competences based on most urgent skills needs
- Respond with dynamic skillsets to the multiple challenges of the triple transition.

Such structured approach will then allow new occupational profiles to emerge and appear.

5.1 Turning the fragmentation of the CCIs from a weakness into a strength

The state of the art of research on the CCIs is a wide consensus that the serious fragmentation of the cultural and creative sector is a major obstacle to fulfilling its potential. CCIs consist of 90% small and medium sized enterprises; of them, 60% are solo entrepreneurs. Furthermore, the sector is conventionally divided into 13 industries with few aspects in common. Siloed thinking and solo acting, lack of a common understanding and

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communication, and the absence of adequate, long-term support structures for collaboration across artistic and scientific disciplines are seen as the main obstacles to overcome this fragmentation[18]. This siloing — further aggravated by legitimate claims for a singularity of not only each sector but each project approach — is also blamed for a notable lack of data and evidence regarding the impact and value of the overall production across the CCIs. Researchers attempting to collect statistical data on CCIs may find themselves struggling with imprecise taxonomic language and limited to previous regimes for collecting data2. The big-picture result: oversimplified and/or narrow expectations of the many roles of art and culture limit the sectors creative capacities to the ad hoc supply of illustration, decoration, embellishment or entertainment.

To unlock the full potential of the CCIs this sectoral fragmentation needs to be re-casted and reframed as a resource that reflects its remarkable cross-cutting skills, competences, and capacities, even on a very small scale. Transforming this sectoral fragmentation from a weakness into a strength will involve a broad shift in how the CCIs are seen, and therefore in how they see themselves and their manifold roles. In particular, their mediating roles — as activities that both affect and are affected by large-scale forces — need to expand beyond edification and entertainment and become more forceful and coordinated. This cannot be done by fiat; instead, it will require specific techniques, contexts and structures that will enable this latent value to become apparent to all.

5.2 Urgent competencies frameworks

The most urgent needed skill sets in a Triple Loop Learning approach (see 4.2) can be mapped against three, most urgent core competences that have been identified and addressed throughout the task:

- **Shared creativity and the power to be affected**: Creativity, even at the individual level, has always implied the processing of potentially all previous creations in order to sample, remix and re-singularise common properties into what is to be reconceived as new.
- **Collective intelligences and co-agency**: The challenges of the triple transition overwhelm individual agency and call for new forms of collaborations in a co-agency of human and non-human assemblages
- **Distributed architectures and decentralised creative production**: Driving the triple transition requires a shift from centrally planned and implemented to decentralized architectures distributed among federated nodes operating in a relative autonomy with respect to central authorities.

5.2.1 Shared creativity

Art and culture are no longer merely an indulgence or the exclusive privilege of a creative class. In today's economy, creativity — understood as the capacity to shape or even create affects — has become imperative in almost every aspect of value generation across a wide range of productions and circulations. However, endowed with a power to be

[18] Fostering knowledge valorisation through the arts and cultural institutions. Luxembourg, Luxembourg: Publications Office, 2022. p.8

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affected (e.g., by climate change), the understanding of shared creativity is a precondition for claiming ownership of the transition. This includes documenting impact and value, monitoring progress (e.g., towards net zero emissions) based on co-created indicators. This, in turn, paves the way for a skills based circular approach to aesthetics. This approach replaces the inherited binary opposition of producer and user with an understanding of shared creativity or (as Brian Eno called it) “scenius”: an ecosystem composed by the needs and desires of a multiplicity of actors and agents, including the widest possible range of stakeholders and engaged scientists, researchers and technology developers — who are *all* seen as creative.

5.2.2 Collective intelligences

The challenges of the climate transition overwhelm individual agency and call for new forms of collaborative skills in a co-agency of human and non-human assemblages (e.g., data narratives, and citizen assemblies and knowledge communities). Contextualising the concepts of co-agency and collective intelligence allows to understand how different social, political, cultural and geographical environments shape what can be done, where and to what degree. The psycho-social registers of transformations have to be taken seriously as well as the enormous demands that climate transition policy priorities place on individuals trying to anchor and apply them in their daily lives. It does so based on the premise that intelligence is distributed: “Different people hold different pieces of information and different perspectives that, when combined, create a more complete picture of a problem and how to solve it”[19].

5.2.3 Distributed architectures

Mobilizing collective intelligences requires peculiar skills to enable a shift from centrally planned and implemented to decentralized architectures distributed among federated nodes operating in a relative autonomy with respect to central authorities. A re-industrialization of Europe will gain sustainability if it is based on the decentralization of infrastructure as opposed to the centralized service and supply grids of fossil fuelled industrialism. Regenerative and renewable modes of production rely on distributed networks that operate in an interconnected but independent fashion. The result is not only increased resilience but a multiplication of creative business opportunities and realistic scenarios for the sustainable scaling of creative business models.

5.3 Dynamic skillsets

These three principles correspond to advanced concepts of responsiveness and responsibility in terms of creative, cross-cutting skills, multiple value creation and extended accountability regarding direct and indirect impacts.

For example, the question of authorship turns into a skills challenge documenting different forms of co-agency and the ethical and aesthetic implications of collaborative assemblages between humans, machines and other non-human actors: from bio-based building materials in architecture to participatory art projects, from electronic music

[19] Peach, K., et al. "Collective Intelligence Design Playbook."

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generated by AI to sustainable co-production models in fashion design and production to counter the predominant model of fast fashion.

Co-agency is a result of dynamic skillsets that allow for a constant de- and re-categorisation according to the challenges encountered in the triple transition and in the different sectors of the CCIs. Dynamic skill sets allow actors and stakeholders in the sector to effectively reframe urgencies. These urgencies reframed by dynamic skill sets raises three key questions in terms of their:

- ***Discoverability***: A data space to document, present and exchange skills in a secure, privacy-preserving manner
- ***Transferability***: A grammar of transversal and transformative and skills sets that may not be reproducible, but transferable and transactional
- ***Cross-fertilization***: A model of entrepreneurship that drives the triple transition, rather than just adapting and contributing to it.

5.4 Occupational profiles

5.4.1 Creative transformation manager

Entrepreneurship in times of multiple crises demands new collaborative learning from across different cultural and creative perspectives. Gaining the ability to act together requires overcoming widespread, romanticised patterns of individual struggles. Equipping practitioners in the visual, applied, performing and written arts with creative technology and cultural leadership skills, Æ promotes a distinct and holistic approach towards the challenges of artistic entrepreneurship. By combining co-created indicators with scientific impact assessment, it creates new capacities to develop commerce and drive societal change.

The profile of a Creative Transformation Manager is characterised by the skills to work effectively and ‘cross-creatively’, contribute to the climate transition, master the digital shift and drive just transitions. The Creative Transformation Manager acquires competencies and transversal skill sets with the aim of:

1. Turning sectoral fragmentation from weakness to strength: The Creative Transformation Manager seeks new relationships between knowledge and insight from creative practices, emerging technologies and cultural management. On this basis the Creative Transformation Manager generates creative confidence leading to innovative business ideas.

2. Reframing the urgencies of climate adaptation from challenge to opportunity: Æ promotes the crucial role of creativity in rural, remote and peripheral areas that are heavily affected by the triple transition. With precise interventions at the intersections of environmental, aesthetic and social justice, it paves the way for value propositions, tested and proven through systematic scientific impact analysis.

3. Co-creating capacities to anticipate future strategies of valorisation: Addressing the complexity of societal transformation processes without reducing it to oversimplified narratives requires professional skills of a new kind. Creative Transformation Manager

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offers unique capacities to prototype business models that go beyond linear growth and continuously regenerate a key resource: creativity.

5.4.2 Rural Innovation Agent

The rural innovation agent explores, recreates and renews the many relationships between art, nature and cultural heritage in the face of the climate transition. The Rural Innovation Agent experiments with 'Distributed Architectures and Decentralised Production' — driven by art and design practices to co-create collective 'learning by doing' spaces. These spaces focus on learning as process of unlocking and combining knowledge for innovation in temporary and distributed constellations. The Rural Innovation Agent collaborates with civil servants, neighbours and creative practitioners accompanied by cross-disciplinary research teams. The broad aim of the Rural Innovation Agent activities is to bring together activities and artefacts to interrelate and disrupt heritage and territorial expertise with new technologies and art and design practices. The Rural Innovation Agent explores the why and how of making avant-garde business ideas through the needs of the practices of everyday life. The Rural Innovation Agent connects actors and stakeholders at community and territory level to foster ambitions for new approaches to entrepreneurship while supporting policy makers in renewing regulatory frameworks for innovation. Furthermore, the Rural Innovation Agent makes visible the role of rural regions — as a catalyst for reframing the innovation narrative in the tripe transition.

5.4.3 Cross creation orchestrator

The Cross Creation Orchestrator takes a multi-, cross- and interdisciplinary approach into the sphere of co-creation: with specific methods for collaboration across disciplines and backgrounds and equipped with an understanding of the various forms of creative labour, the Cross Creation Orchestrator guides processes of exploration and creativity with diverse actors. Familiar with the strengths and weaknesses of a wide range of creative processes, from spatial planning and modelling in architecture to improvisational co-creation in the performing arts, from iterative rehearsals to cut-up strategies, the Cross Creation Orchestrator can create a co-creation space tailored to the context and people involved, and build creative confidence. This matters even more at a time when artistic research and production is increasingly called upon to facilitate cross-disciplinary research and cross-creative innovation in order to address complex societal challenges. Recently, initiatives such as the New European Bauhaus or EIT Culture & Creativity have made strides toward awarding, articulating, and analysing activities in the cultural and creative sectors (CCIs). These initiatives have laid foundations for ambitious efforts — for example, to explore the CCIs' wider potentials, to revisit their capacity to generate societal impact, and to reshape contexts around them. In doing so, they invite ambitious questions — about how the sector can, more than just adapting to the European Green Deal and the triple transition, actively contribute to advancing them.

5.5 Follow up projects

The CYANOTYPES proposal identified as the specific challenge of task 2.2 "to explore, develop and disseminate new forms of cultural and artistic entrepreneurship by systematically strengthening cross-disciplinary teamwork skills to increase the creative

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confidence of cultural and creative professionals within digital and networked environments. Rather than reducing, the focus will be on embracing the complexity at stake through a series of unexpected encounters that require a collective intelligence that runs transversally through the sectors."

This has been achieved and will be further followed up through the launch of three projects that directly originate from the task. These are 1) Digital Immaterial Passport which will provide secure and verifiable credentials for skills, based on a decentralised identity management system, 2) Master programme on Artistic Entrepreneurship offered as a joint degree between universities, non-academic partners and VET providers (also part of the CYANOTYPES NTNU pilot), and 3) Artistic Intelligence Micro Credentials which will apply the principles of openness — from across science, data policy, publishing, software development, and beyond — to data processing, training models, information, and knowledge.

In these contexts the knowledge and insights created so far will be applied, tested and transferred in ways that create synergies and beneficial effects for the pilot projects in WP3.

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