



ForesightLAB



Introduction to *Moments*

A foresight study on the creative industries

A Foresight Lab report

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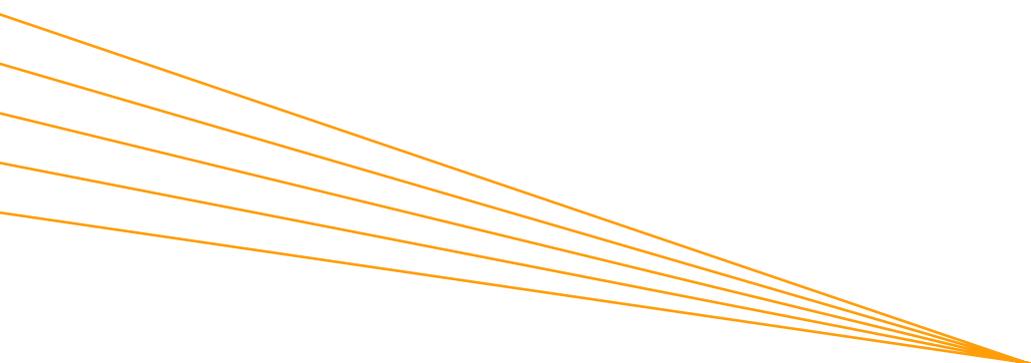
The CoSTAR Foresight Lab

Driven by the UK's leading Creative Industries experts, the CoSTAR Foresight Lab is researching the adoption, use and impact of new, emergent and convergent technologies in gaming, TV, film, performance and digital entertainment.

Our findings will inform research, development and innovation across the Creative Industries, including the R&D taking place through the convergent screen technologies and performance in real time (CoSTAR) programme, the UK R&D network for creative technology.

CoSTAR is a £75.6 million national R&D network of laboratories that are developing new technology to maintain the UK's world-leading position in gaming, TV, film, performance, and digital entertainment. Delivered by the UKRI Arts and Humanities Research Council, the programme is supporting new innovations and experiences that will enrich the UK's creative industries, economy, and culture. The network comprises the National Lab, the Realtime Lab, the Live Lab, the Screen Lab and the Foresight Lab. CoSTAR is funded through UK Research and Innovation's Infrastructure Fund, which supports the facilities, equipment and resources that are essential for researchers, businesses, and innovators to do groundbreaking work.

You can find out more by visiting www.costarnetwork.co.uk.



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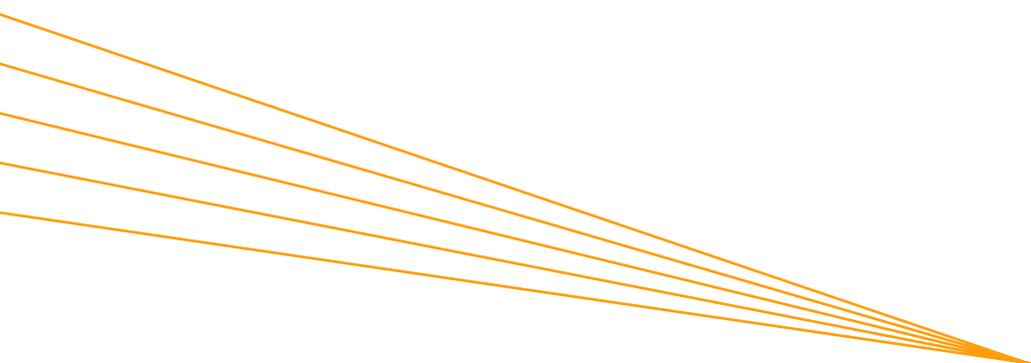
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Patrick Bradley (Station12)
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The Lab is administrated by Petra Lindnerova and Tom Steer.



Executive summary

The Foresight Lab's role in the CoSTAR programme is to provide insight and foresight, informing and learning from industry, policymakers, and the CoSTAR network.

Our work includes providing foresight into how the creative industries will evolve in the years and decades to come, integrating multiple perspectives to make sense of change. *Moments*, one of our foresight workstreams, comprises an iterative, interdisciplinary research approach exploring emergence from a systems lens, where strategic foresight, investment awareness, technical expertise, and speculative design meet. *Moments* inquiries are developed through a co-evolving research process with our Foresight Board, comprising 14 leaders in the sector, supported by a range of parallel research activities.

Foresight is an amorphous term used to describe a collection of fields and methods that enhance understanding of plausible and preferred futures. Our approach is rooted in the strategic context of the CoSTAR programme, embedded in industry and the interests of the public. This report comprises an outline of our work during the setup phase of our foresight study. Informed by the climate of the sector, we have synthesised three emerging areas of complexity and uncertain tensions (from p. 10), developing a collection of scenarios to enhance intellectual understanding of highly ambiguous issues. While developed from a UK context, the scenarios carry international relevance. Readers are encouraged to take away the provocations, tensions, and frameworks to draft their own scenarios. This is just our lens; the start of a wider conversation.

Moving into 2025, we will work with our Foresight Board to progress these provocations to a level of design and strategy. We will also publish our framework capturing nascent change, a forward-looking piece of research reflecting ongoing horizon scanning across the Foresight Lab.

Moments at a glance

This report focuses on emerging areas of complexity in the creative industries, and a collection of plausible scenarios.

A critical transition in media, culture and creativity (p.6)

Digital, network, and cloud technology have shaped all areas of the sector, influencing what is produced and where culture is experienced. Our Foresight Board expressed various expectations of the future, ranging from investment corrections to the importance of preserving artistic sensibility and human authorship.

Forces and their uncertain trajectories (p.9)

High-level forces influencing the sector are organised under a collection of themes, including fragmenting culture and care systems; a political status quo in question; confronting our environmental entanglements; ever-complicated economic knots; and a world of technology, a world of vulnerability.

Emerging areas of complexity (p.10)

Through a mixed-method research approach with our Foresight Board, alongside parallel Foresight Lab research activities, we synthesised three emerging areas of complexity comprising machine learning, platforms, and creative work.

Who gets to own machine learning? (p.13)

Advanced machine learning applications are explored through two tensions: application and ownership. Underlying developments of culture and ethics, openness, entrepreneurship, regulation, and audience views are discussed. Scenarios around *data alchemy*, *IP fracking*, *collective intelligence (CI)* and *auto-pipeline* follow.

What platforms will facilitate culture? (p.18)

Trajectories of online platforms are examined through two tensions: design and transaction. Influential vectors are expanded on, including user interest, price sensitivity, public support, innovation ecosystems, and dominant platform behaviour. *Creative independent union*, *production salons*, *cosy media clubs*, and *mutual bingeing* comprise our platform scenarios.

How will creative work evolve? (p.23)

The state of the creative worker is mapped through two tensions: ethos and governance. Aesthetics, evolving workflow, government recognition, worker organising and interest groups are assessed as change factors. *New vintage*, *offline revolution*, *hyper-polytechnic*, and *glossy worlds only* explore future possibilities in creative work.

Crafting judgment from uncertainty (p.28)

Following discourse with our Foresight Board, we synthesise a collection of thought starters to bring this work forward.

Drafting a way forward for human expression

Convergent Screen Technologies and Performance in Real-time (CoSTAR)

Funded by UKRI's Arts and Humanities Research Council, CoSTAR is a research programme exploring opportunities across the creative industries to secure the United Kingdom's global leadership in film, TV, gaming, live performance, and digital entertainment¹. CoSTAR's purpose is to advance the creative industries, conceive of new ways of producing and experiencing culture, and direct investment toward new growth areas and high potential companies, with convergent workflows and technology being a specific focus. It comprises of five labs in total: National, Live, Realtime, Screen, and Foresight. Together, they reflect a collaborative network of research facilities across the country's creative clusters, connecting Pinewood, Production Park, inGAME, Studio Ulster, and the country's leading research and advisory centres.

CoSTAR Foresight Lab

The CoSTAR Foresight Lab acts as the insight, foresight, and advisory function of CoSTAR, understanding what is working within the sector and mapping plausible futures. Led by Goldsmiths, University of London, the lab brings together the British Film Institute, Loughborough University, and the University of Edinburgh, working in partnership with a range of delivery partners including Arup, the Creative Policy and Evidence Centre, Data Thistle, Deborah Williams OBE, i2 media research, Julie's Bicycle, Olsberg-SPI, Station12, and Verian.

Moments* and *Humans

Published by the CoSTAR Foresight Lab, *Moments* focuses on sector and technology foresight from a systems lens, using strategic foresight, investment awareness, speculative design, and technical expertise across CoSTAR to make sense of complex change in the sector.

Moments is the other half of *Humans*, a dichotomous workstream exploring foresight from an experiential lens, for workers and audiences. *Humans* explores emergence using foresight, UX research, psychology, and design².

Both research workstreams are informed by a board of leaders across the sector, comprising our Foresight Board, a diverse collection of leaders reflecting creative convergence.

As leaders with a macro view of the sector, they have been used across research conducted to set up our foresight study in the *Moments* workstream. This includes influencing initial directions in horizon scanning (p.8); providing feedback to help us develop our forces of change framework (p.9); rating complex issues and engaging in one-to-one, guided dialogue to help us synthesise our emerging areas of complexity (p.10); and engaging in critical discourse in our end-of-year board meeting to progress our understanding of areas of complexity (from p.28).

¹ Referred to throughout as 'Creative Industries' or 'the sector'.

² *Humans* will begin publishing its approach to research in spring 2025.

Foresight Board

Our Foresight Board is a collective of leaders from visual effects, gaming, extended reality, production, broadcasting, machine learning, worldbuilding, and the arts.

Dave Bull, Professor at University of Bristol and Director at MyWorld

Darren Cosker, Professor at University of Bath and Principal Scientist at Microsoft

Sarah Ellis, Director of Digital at Royal Shakespeare Company

Steve Jelley, Global Head of Virtual Production at D-NEG and Co-CEO at Dimension

Gaby Jenks, Digital Director at Factory International / Manchester International Festival

Sue Lyster, CEO at Industrial Light & Magic

Greg Maguire, Professor at Ulster University and Founder & CEO at HUMAIN

Alex McDowell, Professor at University of Southern California, Director at World Building Institute, and Co-Founder & Creative Director at Experimental Design

Sylvia Pan, Professor at Goldsmiths, University of London

Romana Ramzan, Producer at No Code Studio

Bill Thompson, Head of Public Value Research at BBC R&D

Lincoln Wallen, CTO at Framestore

Nell Whitley, Executive Producer at Marshmallow Laser Feast

Deborah Williams OBE, independent in the creative industries

This report is an introduction to the *Moments* workstream to be developed further within CoSTAR in 2025 and beyond. The team has researched the past decade of production with a focus on convergence, to create a baseline of where the creative industries are and where they could go.

It's not hard to come across the word convergence in a foresight study. But like the word creativity, convergence can mask more than it clarifies. Convergence reflects a broader systemic change underway, where structuring activity by industries is no longer making sense. Worse, it is stifling our capacity to change when the environment calls for it, as identities become shackled to industries. Our language, and therefore our instruments to respond to change, are outdated. So, think of convergence as a placeholder word, until we find something more suitable to describe this shift toward a more interwoven world.

We decided to begin this report with the title 'Drafting a way forward for human expression,' to demystify what the creative industries do. They are a vessel for human expression, an arbiter of this moment in time, and a recorder of moments before and later that elude us. No wonder there is incredible anxiety around the recent direction of machine learning tools, and how they might be used. Language that has become normalised like 'content,' and now what is lightly recognised as 'brain rot,'¹ paints a scene ripe for commoditisation.

This report is an introduction of the research to expect from the Foresight Lab across CoSTAR's five-year programme, with a full *Moments* report available one year into the network's launch, in December 2025.

How to read

Foresight was first institutionalised by RAND after WWII², later adopted by Shell in the years before the 1973 oil crisis³. This is the common story of foresight, though it would be incomplete without recognising the role of artists and social justice advocates across time. Critical thinkers have always viewed the future as something you interrogate and create. Foresight is about challenging our present, as much as it is provoking people with images of alternatives. Today, it's a practice organisations adopt to manage complexity and craft judgment.

We use foresight as a connector between the worlds of academia, commerce, politics, nature. Borrowing Donna Haraway's concept of tentacular thinking⁴, it is about embracing interconnected ways of seeing the world, and the entangled relationships that define our shared ecosystems and narratives. In this sense, foresight is associated with applied practices like art, strategy, or design. It aims to challenge people's assumptions, find potential, and address the systems shaping our lived experience. We anticipate publishing our full approach to foresight, and our learnings, a year into the network's launch.

The landscape is constantly shifting, and our research direction will evolve. For this reason, our reports aren't positioned as final answers or solutions. The purpose of this report, like others to come, is to open conversations and help the reader arrive at their own conclusions. Our role is to ask the right questions.

1 Brain rot, 'the supposed deterioration of a person's mental or intellectual state, especially viewed as the result of material considered to be trivial or unchallenging,' was Oxford Dictionary's word of the year in 2024.

2 Futuribles. The history and memory of foresight. www.futuribles.com; 2024.

3 Shell. 40 years of Shell scenarios. www.shell.com; 2013.

4 Haraway D. Staying with the trouble: making kin in the Chthulucene. Durham: Duke University Press; 2016.

We are experiencing a critical transition in media, culture, and creativity. The story of film, TV, gaming, and live performance over the last decade, and the shape the creative industries have taken, reflects a constellation of decisions we've made.

Tax incentives for the **film** industry have shaped the nation into a global centre for production, where talent is abundant. Since tax relief was expanded, the screen sector has become an epic growth story⁵. This expansion through the 20-teens occurred alongside a broad transition toward streaming. The importance of visual effects (VFX) grew in this period, with post-production becoming a focus for optimising workflows, now scattered across time zones. Virtual production and VFX supervisors progressively at the frontend are exemplary of this shift, as is the global investment in VFX facilities across the globe uncovered in our recent international scan of the market⁶. However, the current production model and its norms have also resulted in clear worker issues⁷. As history shows, evolving distribution goes on to change production. Streaming has influenced how films are produced, generally with a demand for more, and delivered quicker. The identity and economics of film is in flux against a backdrop of lower cinema attendance over the years, with an unclear recovery.

The streaming model has also enabled high-end television production, episodic series where production workflows are indistinguishable from filmmaking, besides larger editorial teams. Broadcast **television** has been squeezed by rapid changes in new media platforms, broadly influencing where people go to follow creators, news, stories, and experiences they care about. People now follow personalities across a variety of channels, and the user experience of streamers has made binge-watching behaviour a global norm. The term 'cable-' or 'cord-cutting' is shared language among broadcast executives. TV isn't over, it's just happening differently. Television has had to dynamically change its strategy to focus on live events and sports coverage, as well as borrow design principles from streaming to remain relevant.

Passive media like film and TV have transformed in line with what the 20-teens were, smartphones, apps, and all: a socio-digital evolution. Interactive experiences have followed an exponential path of expansion, with the increasing adoption of gaming applications and consoles, cloud-based multiplayer games as well as hybrid social-gamer spaces. The **gaming** industry is influential within the sector, and its use cases and potential scale is evolving. Underpinned by compute and network improvements, gaming has exploded in popularity over the last decade, with esports, game engines, Discord, Twitch live streams, and real-time interaction not only influencing neighbouring creative industries, but breaking through the pop culture lexicon. It hasn't been without its corrections, though. Stripped back, virtual reality and the metaverse can be seen as gamer imaginaries suggested as everyday interfaces; enduring use cases seem to be clarifying with time.

On the other side of the spectrum, one of our oldest arts formats, **live performance**, has been redefined in terms of how and where it can happen. Media platforms can make anyone a performer for a global audience, even someone cosplaying a non-playable character (NPC). Live coding has blended electronic music with a developer ethos, generating an entirely new form of practice. The importance of stage design for musicians has become a natural focus to ensure touring revenues make up for lost income since streaming, driving enhanced lighting, projections, and audio to convey a memorable experience. It is an open secret large parts of performance value chains are monopolised

5 British Film Institute. UK screen sector economy. www.bfi.org.uk; 2018-2021.

6 Openshaw, E., Moretto, M., Williams, V. and Hitchen, G. (2024). Creative Technologies International Scan #1. doi.org/10.5281/zenodo.14246712.

7 IATSE. Marvel Studios VFX workers unanimously vote to unionise with IATSE, marking historic first. www.iatse.net; 2023.

and pathologically influenced by few actors. While pre-recorded performances through social-gamer spaces, extended reality, and streaming promise new ways to access and experience a variety of cultural offerings, the loss of co-evolving, responsive connection between performer and audience presents an uncertainty: what's being left behind as this technique becomes norm, and what constitutes 'live' moving forward?

Over the last decade, the growing accessibility of tools, publishing channels, and communities of knowledge has allowed more people to get involved, shape formats, and create new categories of **digital entertainment**. This shift has been empowering to anyone who has the access, know-how, and ability to use a computer. But describing the appearance of democratized creativity would be tone deaf without addressing the alienation many people feel as a participant or witness to the creative industries' movements, progressively aligning with the tech sector's thought patterns. Depending on experience, 'alienation' could take a variety of meanings, and they are far too pluralistic to try to define here. As a vehicle of shared stories and aesthetics weaving our social fabric, the creative industries play a role in mirroring our values. Underneath its seemingly technological aim, CoSTAR proposes a more fundamental reset to how the creative industries work and relate to others.

In recent years, media has been populated with predictions, reflecting deeply held images of the future. In a new longitudinal survey, the *Creative Business Panel*, we will be tracking the truth of some of these predictions, bringing our media technology taxonomy to the field⁸. Co-commissioned by the CoSTAR Foresight Lab and the Creative Policy and Evidence Centre, our aim is to locate enduring practices and weave a story of the creative industries' direction that researchers, investors, and policymakers can respond to.

This includes tracking developments across extended reality, machine learning, interoperable formats, camera innovation, and more. Knowing the undeniable influence of distribution on production, and the merging of these spaces, we will concurrently be making sense of the evolving use of platforms, licensing, legacy channels, and distributed computing, as well as the use of digital assets.

Beyond making sense of movements through tracking tools, we wanted to capture future expectations at the start of our foresight study, using our board members as a baseline. This helps inform some of the scope of our horizon scanning, where we track signals of change relevant to our remit, test future assumptions, and articulate emerging patterns. From initial conversations with board members, we noticed future expectations⁹ ranging from necessary systems change, investment corrections, through to a resounding consensus that preserving artistic sensibility and human judgment will be essential.

8 Our taxonomy distinguishes nascent from established technologies commonly used (convergent) across our remit, with nascent reflecting novel and/or ambiguous use cases of new tools, and established tools being applied for several years, with clear use cases.

9 Expectations of the future were thematically clustered across the group then refined into concise points.

Future expectations for the creative industries

Creative industries will converge with more to learn from each other. Sharing know-how around tools and practice will usher in an era of creative generalism.

Media will be shaped by artistic sensibility and human judgment. People will recognise what is real and valuable in the sector doesn't start from technology.

New forms of intellectual property will matter. Ownership formats may evolve and with a focus on how to capture, negotiate, and regulate it in the sector.

Advancing machine learning tools will change the sector. The change is most likely to come from entrepreneurs and SMEs, and it is highly uncertain.

There will be a paradigm shift in how workers are developed. More focus will be placed on opening the sector to different backgrounds and learning-by-doing.

Digital artists will adopt new ways of working. Virtual production, advanced machine learning, and possibly a more complete shift to cloud will evolve the pipeline.

There will be a creative and cultural reckoning around 'content.' There is a widening gap between what audiences want and what producers think they want.

Media innovation will play a stronger role in other sectors. Extended reality, for example, will have more clear use cases in safety, education, and notably healthcare.

Storytelling interfaces will evolve. Watching where communities go to share and experience culture offer initial signals into media's next chapter.

Film and TV will have to change to remain interesting. Whether this is purely format-driven is unclear. It may be caused by systemic changes in either industry.

Overzealous investing in media technologies will be corrected. Hype cycles will be seen as a serious risk to hindering the sector's potential impact.

The gap between academia, industry, and funders will need to be amended. Silos and norms of collaborating are inhibiting the sector to address root issues.

Mapping the wider context

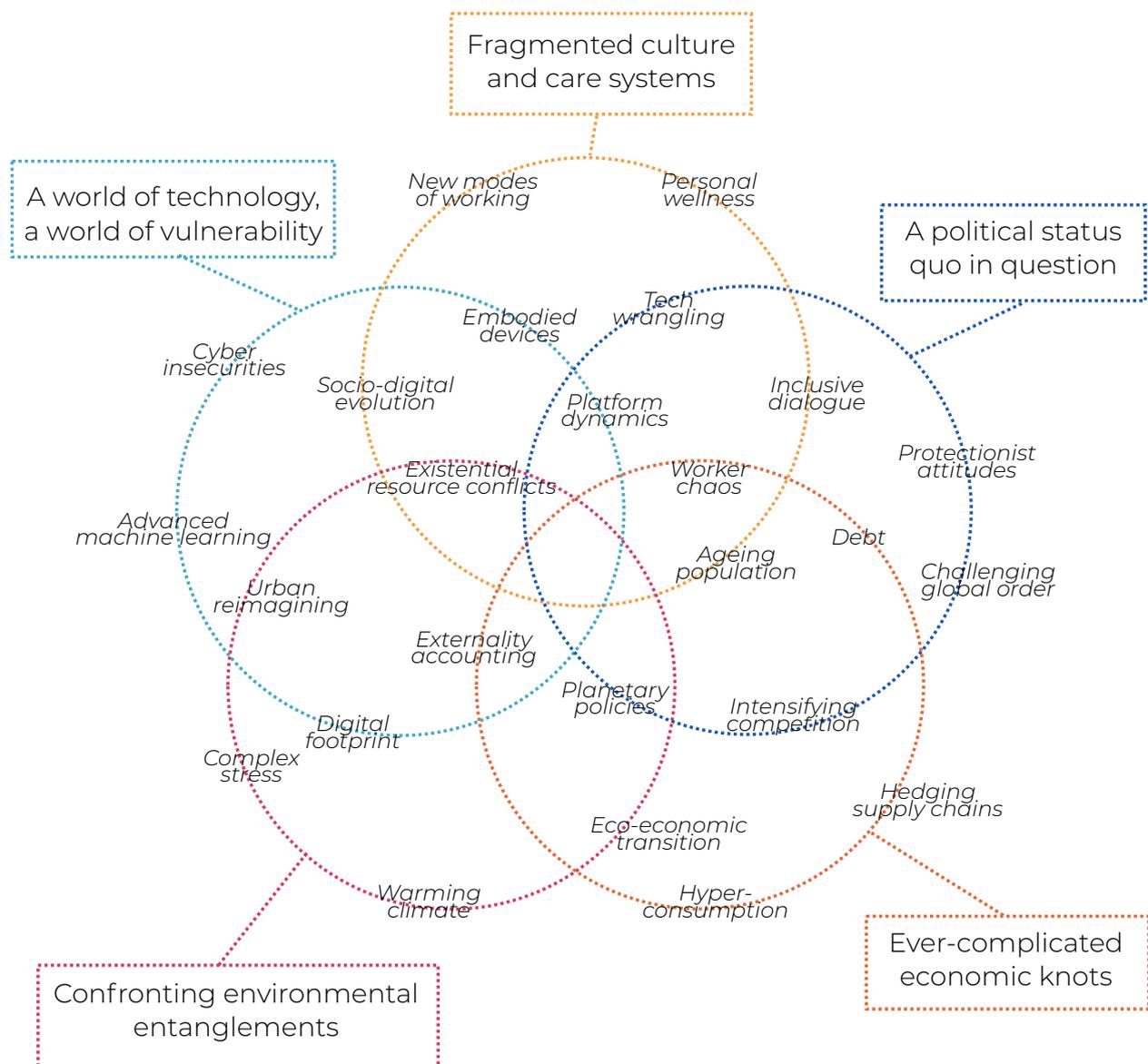
Parallel to researching the previous decade of the creative industries, and beginning to make sense of future expectations, we looked at deeper forces driving change — forces that exist well beyond the sector. Commonly referred to as drivers or forces of change in foresight, they reflect high-level transformation across social, technological, economic, environmental, and political dimensions. Forces are used to clarify the cause and effect of many movements occurring on the ground; they are certain issues, supported by a large body of evidence¹⁰.

10 Our forces of change framework and evidence base will be published in 2025.

Forces and their uncertain trajectories

Scoped according to CoSTAR's remit, forces of change have a profound influence dating back a decade and are expected to influence the next decade in uncertain ways. Their relevance to the creative industries may not be immediate at first glance, however they are undeniably shifting the sector like tectonic plates.

The following forces reflect the most recent iteration, developed through a blend of cross-disciplinary literature review, environmental and horizon scanning¹¹, iterative frameworking, as well as feedback within the lab and through our Foresight Board.



¹¹ Environmental scanning is a foresight technique used to analyse external, systemic issues affecting the creative sector. Horizon scanning focuses on nascent issues through identifying signals of change, early indicators of future change in the sector.

Coinciding with developing forces of change, we focused on identifying what was highly uncertain in the sector and would remain complex for years to come.

We focused our research with board members given they are afforded a macro view of the sector as leaders. An initial Delphi survey had board members and a few experts in their network with a valued lens on change rate a collection of complex issues¹² by their urgency, probability, reach, and impact. We analysed the data through different lenses, leaning toward a measure of general *importance*, a high mean score across all four criteria. The following were rated highest:

1. Big tech ownership of AI
2. Weaponised personal data and the rising value of privacy
3. AI's impact on the job market
4. Governing AI
5. Technology-amplified biases and reinforced inequalities
6. Data proliferation and power

Our next step was making sense of what exactly these issues meant in the creative industries. Knowing the limitations of surveys alone, based on availability we spoke to most of the cohort in an open-ended, one-to-one format, asking about their motivations around CoSTAR, as well as sector issues, opportunities, and perceptions of the future, including ideals. We identified patterns emerging in speech as conversations unfolded across the group, taking notice when dialogue stalled due to the degree of uncertainty and complexity surrounding a topic. We also took note of root causes underlying common observations and an emotional lean around certain issues. As researchers, we believed it was valuable to make sense of what was felt through this process, as trusting emotional cues can be useful in forming foresight¹³.

Taking an iterative approach, we pieced together potential provocations and related uncertainties. Employing mixed-methods allowed us to balance rigour with speed and arrive at a convergence point quicker. This is essential for the context of the Foresight Lab, where research is strategic, and its utility relies on timeliness in the landscape.

What we noticed is the potential impact of machine learning is truly uncertain with an ethical grey area regarding data training and notions of ownership. Another is the influence of platforms and their impact on not only the entire economics of the creative industries, but also people's agency to engage in culture effectively, for audiences and artists. Platforms have been perceived as a democratising force in media production; however, the truth is likely more nuanced. Finally, power dynamics between creative workers and the financial incentives of organisations¹⁴ are palpable, clearly reaching a fever pitch as groups are unionising.

These themes were synthesised through a blend of deductive reasoning, drawing on our forces of change evidence base illustrating long-term change, and inductive reasoning, emerging from direct research with the board and ongoing horizon scanning. This multifaceted approach has informed our *emerging areas of complexity*.

Emerging areas of complexity embody intense future uncertainty with no clear answers at present. Judgment around them can only be crafted through questioning.

¹² Our earliest iteration of forces of change were a set of complex issues developed by i2 media research and shaped by the entire lab.

¹³ Pham, M.T., Lee, L., Stephen, A.T.. Feeling the future: The emotional oracle effect. *Journal of Consumer Research*; 2012.

¹⁴ We recognise many executives are making decisions according to their systemic pressures, and this is equally a systemic problem.

Emerging areas of complexity

Advanced machine learning applications, as well as the social and economic conflicts they pose

Platform dynamics (typically cloud-based software where media is consumed, but also created) and their role in shaping what is produced

Worker chaos in creative industries, where talent, workflow, and technology philosophies as well as expectations of organised intervention are rising

Alongside framing areas of complexity, for each area we use relevant theory to instigate thought around what exactly is happening in the sector. We also articulated tensions for each area, axes mapping plausible trajectories in machine learning, platforms, and creative work, as well as underlying developments that could influence their plausibility. Using these tensions, scenarios for each area of complexity were co-developed by *Moments* workstream researchers, using worldbuilding techniques to express systemic and lived realities of each potential world¹⁵.

Scenarios depict plausible futures, capturing feelings, conflicts, emerging tools, and behaviours unearthed across our research activities. They are stories of the future, often reflecting an aspect of the present, intentionally described through varying lenses, tones, and politics. Their aim is to extend our intellectual understanding of complexity, to expose possibilities in gridlocked issues, and weave caution into decisions. Knowing the power of visuals, we explored a few scenarios with an artist and doctoral researcher in human-AI collaboration.

¹⁵ Scenarios are a strategic foresight practice pioneered by RAND. Worldbuilding describes a collection of narrative design techniques. Dator's 'Four Futures' were also used to guide scenario synthesis for each provocation; however we didn't follow this framework rigidly.

Jiarong Yu, speculative artist

Jiarong Yu is a doctoral researcher in human-AI collaboration and STEAM at University of Edinburgh. She is an interaction designer and artist. Under the alias “6Liè,” she has been active in fusing the fields of music production, data visualisation, data sonification, robotics and physicalisation, 3D animation, interactive installation, and video game development.

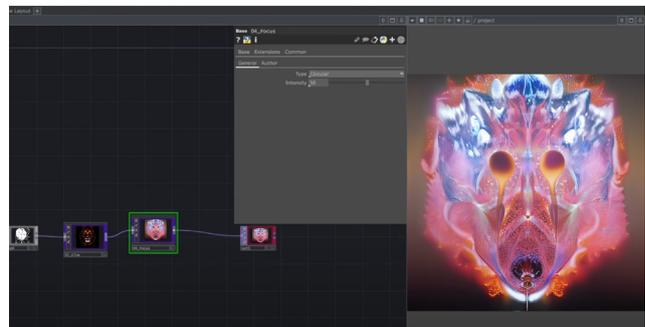


Artist statement

Based on the narratives from the CoSTAR Foresight Lab, I created speculative visuals for three scenarios: data alchemy, creative independent union, and new vintage, blending Rococo sci-fi aesthetics with realism. By fusing classical, ecological, retro, and cyber elements, I tried to envision the tangible futures through 3D modelling, StyleGAN portrait generation, illustration, and digital collage.

In data alchemy, an underground digital furnace symbolises grassroots movements and bottom-up machine learning. Drawing from “alchemical symbols,” I layered image data elements like male lions, flowers, flames, and female human faces to “simulate” the alchemical process. Creative independent union uses a blockchain-represented mirror to reflect empowered creative users shaping the distributed platform landscape. New vintage depicts audiences watching performances with archaic media (traditional creators are using them to create and experience), exploring how present memories could become cultural treasures in future personas.

This work reflects a close and deep collaboration with the CoSTAR Foresight Lab team, from early sketches and aesthetic development to refining the relationship between identity, personas, and future scenarios. Through this process, to shape a critical vision of speculative futures.



Images from left to right: Jiarong Yu profile image; Creative complexity triptych sketches by Jiarong Yu; Depiction of an Ouroboros from the alchemical treatise *Aurora consurgens* (15th century), Zentralbibliothek Zürich, used as a reference image; screenshot of work-in-progress by Jiarong Yu.

Who gets to own machine learning?

Advanced machine learning is introducing new social and economic risks, however, like camera technology, it could also change how we capture human stories and produce art. It is unclear to what extent extreme polarities, both the overconfident and condemning, are influenced by hauntology (a sense of being haunted by our cultural memory of machines, and the futures they suggest)¹⁶.

Machine learning futures can be explored through the lens of two tensions:

Application

training vs. using tools

The extent producers will engage in complex data training or rely on products and services to automate and evolve their workflow.

Ownership

grassroots vs. corporate ownership

Whether activity and ownership will evolve ground-up (enabled by open source) or top-down (research restricted, winner-takes-all).

Underlying developments at play

Cultural and ethical dynamics will shape how practices evolve. Many first-moving machine learning companies are carrying liability, and nowhere is this more understood than the creative industries. There is space for counterculture where creatives embrace the chaos and redefine what practice looks like.

Rethinking interfaces, use cases, and data training will come from everyday workers and entrepreneurs.

A lot of the emphasis is on large models originating from outside the sector, however the potential is on-the-ground in proximity to production issues, where there's know-how of risks and use cases. Plus, these people are more likely think carefully about how tools are accessed and designed, and where (and for who) value is created. On the other hand, a new class of entrepreneurs like Runway and recently acquired Wonder Dynamics will pose existential questions to parts of the sector, with the fate of some players hanging in the balance.

The extent of open-source behaviour will be an essential factor in grassroots building and data training.

Platforms like Hugging Face lower barriers to inclusive iteration, providing space for knowledge communities to grow, where more diverse techniques, creative uses of data, and use cases can be developed.

Regulations will attempt to guide judicious applications. Upholding data privacy and intellectual property rights are translating to policies mandating remuneration where contributions (data scraping) happen¹⁷. Though, the extent of guardrails may shape who gets involved and how, as compliance could be resource-intensive.

Audiences have a greater influence than most people assume. On one hand, people are recognising the potential of advanced applications, observed in the popularity of Refik Anadol's artwork and interest in Brian Eno's collaboration with Teenage Engineering. On the other, there has been a visceral rejection to even the appearance of synthetic media¹⁸, with others organising an active resistance¹⁹.

¹⁶ Jacques Derrida. *Specters of Marx*. Psychology Press; 1994.

¹⁷ Martin Coulter. EU's new AI rules ignite battle over data transparency. Reuters; 2024.

¹⁸ A board member expressed audiences had a highly negative reaction to content that seemed synthetic, even if it wasn't.

¹⁹ Allred, A.M., Aragon, C. Art in the Machine: Value Misalignment and AI "Art". In: Luo, Y. (eds) *Cooperative Design, Visualization, and Engineering*. CDVE 2023. Lecture Notes in Computer Science, vol 14166. Springer, Cham; 2023.



20 Collective intelligence is a way of thinking about machine learning, popularly introduced by Holly Herndon.

Data alchemy

New forms of simulated production studios emerged online, trained and co-owned by artist collectives bound by common styles. Social platforms fragmented, no longer dominated by so few, and the web shapeshifted into media servers for every kind of longing. Audiences were in and out of doors, getting lost among worlds-in-progress. Texas Baroque, Eco Weirding, Ambient History, and other genres were synthesised during the Worlding movement. Generative tools were artistic material, economic system, cultural engine. A destructive force to the old pipelines, too. Entertainment conglomerates and first-moving synthetic media companies declined as the Synthesis sector prompted a paradigm shift in how creativity is produced.

There was a social fever to practise machine learning differently, to generate new aesthetics and push forward a consortium of independents. The counterculture was fuelled by flattened media, a sense of artistic crisis, and simulated slop; it was a punk movement²¹ against the tech oligarchy and their takeover of culture. Language around data and neural networks began to expire, in favour of prima materia and magnum opus. The government recognised their essential role with subsidies for the data alchemist ecosystem, which in turn prompted major investment in domestic hardware, servers, and infrastructure powered by networks of renewables.

(training tools, grassroots ownership)

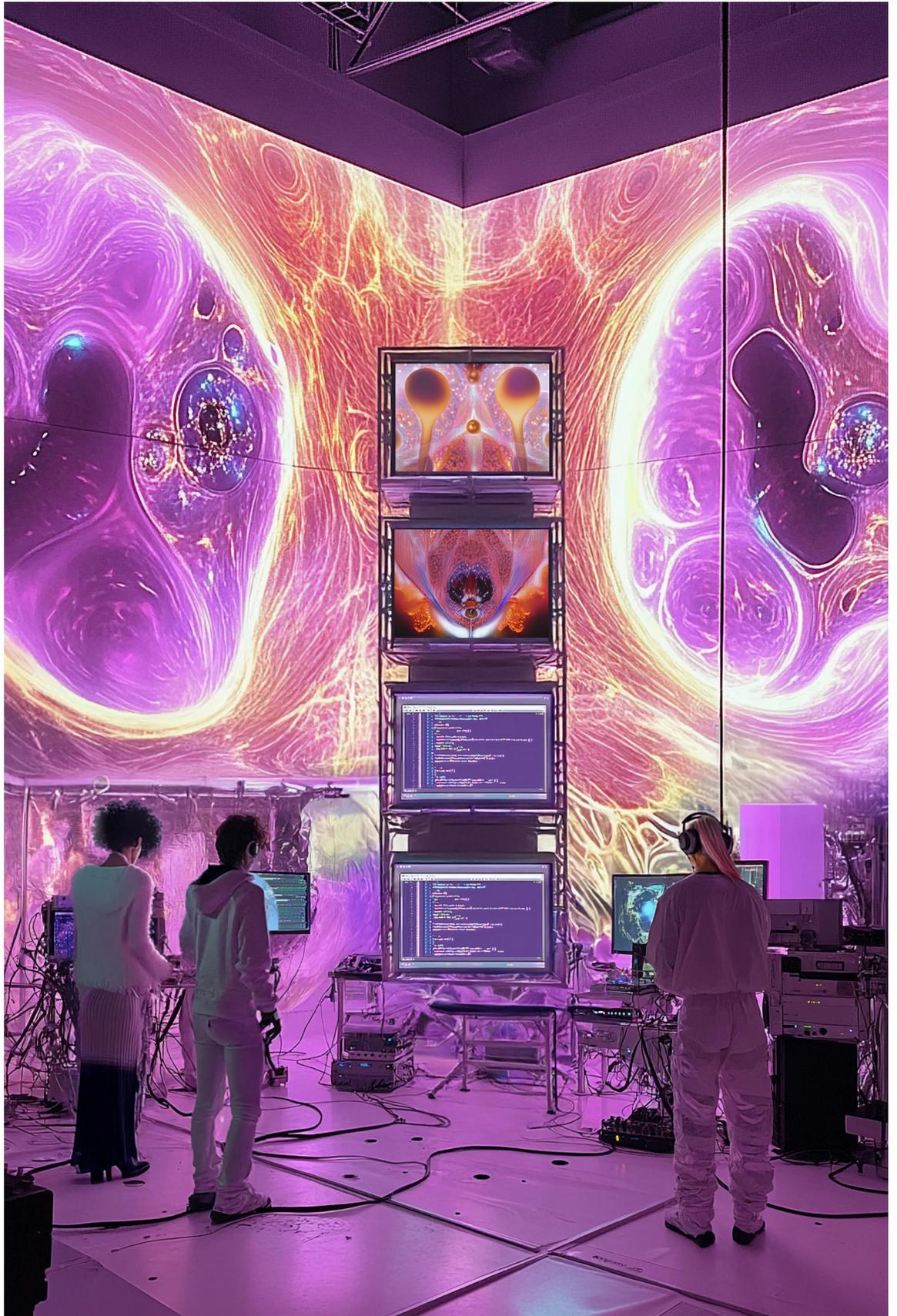
IP fracking

What used to be entertainment companies morphed into a business of creative commodities. Proprietary models, trained on archives of intellectual property, made multi-media machines of corporates. Entire departments were automated, and models became household names (some with enigmatic branding, like Phantom, and others aligned with their IP dossier, the *sequellisers*.) This norm wasn't limited to the commoditisation of legacy media. User-generated platforms started training their own media offerings, each with their own unique flavour reflecting their respective online communities. Games were just software updates reflecting ever-expansive, familiar worlds.

Workers had to know these models intricately. At times, it felt like wrangling outputs from an outsourced team. Some felt a sense of alienation from the work, of pushing pencils to automate sameness and propaganda. And, as models became central to operations, it also meant every human thought, feeling, and overheard conversation at work was an opportunity for training. Fringe thinking was conceptualised as instances of hallucination. GPUs were the new oil, now preserved and remade, with an ESG doctrine of their own. In the background, archaic, live arts and performing became the catch-all for reconnecting with 'embodied expression'.

(training tools, corporate ownership)

²¹ After reading this scenario, Bill Thompson wrote down "punk sensibility - it's 3 GPUs and one guitar" and expanded on the potential for a creative explosion not dissimilar to music movements in the 70s. Embrace the chaos.



Data alchemy

Creative complexity triptych

Jiarong Yu



Collective intelligence (CI)

As the fediverse grew in the wake of disillusionment with tech bro mentalities, new production applications were built by special interest networks spanning the globe, from anonymous contributors to government officials. A creative common, it was tended to by a network of users aligned with the ethos of Collective Intelligence (CI).

In this definition, intelligence produced by machines were inherently collective products, and therefore they should be treated as a common for many to use but also preserve. More active users engaged in implicit training, and Guardians with intensive roles in managing CI applications, were paid a stipend each month. It was an empowering interface of applications where nations could meet again, a new form of globalism, remaking the web into what it promised to be. Though, there were a lot of bugs, it was laggy, and it wasn't as efficient as it could be. Security was an ongoing concern.

Strangely, this triggered a resurgence in face-to-face knowledge sharing forums and localised studios. Possibly, as our technological ethos oriented around the fruits of a network, coming together to work on ideas became essential.

(using tools, grassroots ownership)

Auto-pipeline

Funded by corporate innovation programmes, entrepreneurs developed an ecosystem of tools. Testing solutions in situ brought forward an interoperable suite anyone could easily engineer into their pipeline, to either speed up tasks or give artists an experimental edge to realise ideas. Over time, corporate partners shared models built on a complex network of ethical data licensing, matched by funding from government, and any approved creative studio used IaaS to train their own tools. Whenever something useful was developed, it didn't take long for the same corporates to put in an offer for acquisition.

Jargon receded into the background; this was just the way creative process worked. Platform companies replaced the plumbing of game engines with generative architectures, and the time to produce plummeted. People bringing old politics into it were seen as outdated, everyone had already adapted, and the sense of uncertainty faded with the arrival of products. But it was business-as-usual, it only cemented economic influence into a few pockets, becoming a playbook for other sectors. And, while the sand crisis was often referenced as a priority in reports, it felt far away from any creative process.

(using tools, corporate ownership)

What platforms will facilitate culture?

Platform dynamics have transformed the economic model of various media industries, enabling accessibility to ubiquitous consuming and producing, while changing our relationship to expression and human connection in ways that are difficult to define. A common observation is that culture feels *flat*. There are parallels with the adoption and diffusion of tape recorders in the 20th century; media distribution shapes what is produced in elusive ways²².

We can map platform futures using the following tensions:

Design

distributed vs. centralised control

Will platforms be designed to maximise user agency or follow centralised and often metric-driven principles (e.g. algorithms).

Transaction

implicit vs. explicit transactions ownership

To what extent will platforms evolve implicit (data) transactions for service or push explicit forms of payment for value.

Underlying developments at play

How platforms evolve depend on user movements. While platforms have instigated a creative economy and opened up access to experiences, they hold immense power and externalise risk. Creators have long felt a lack of control over their business, and audiences are recognising a change in how culture is experienced online. A desire for different could instigate a change in platform dynamics.

Price sensitivity has been a barrier however this may shift. Users show a willingness to pay if it offers access to a valued feeling, to align themselves with a community or be part of a work-in-progress. This is observed in Discord subscriptions, purchases in sandbox games like Roblox, tokenised collectives in distributed computing, as well as co-creative hubs emerging in popularity, like Are.na. As paying to access creative spaces becomes normalised, this could drive more specialised platforms blending production, distribution, development, and connection.

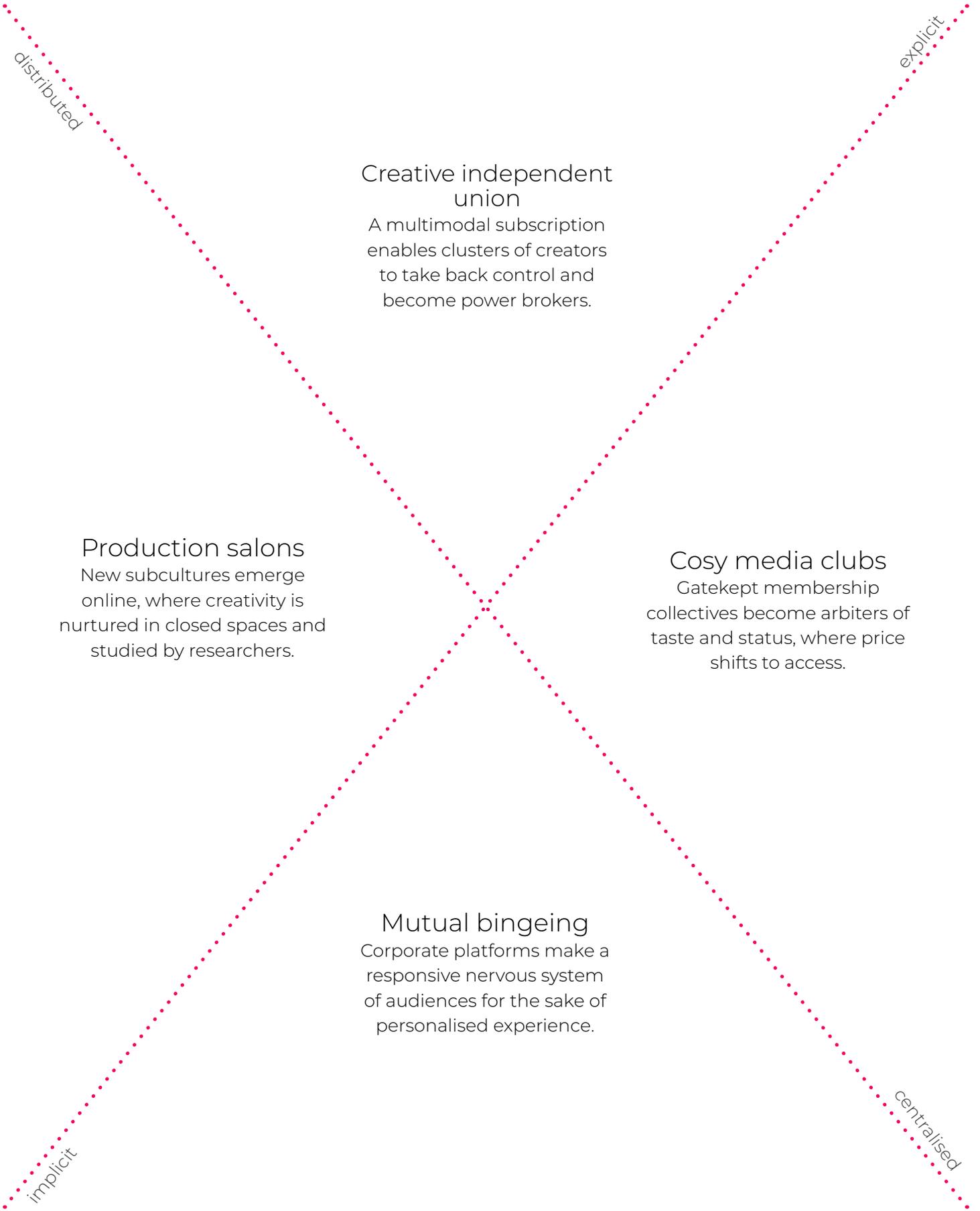
Innovation ecosystems play a role in unravelling common issues. Complex social and economic issues around platforms offer an opportunity for academics and entrepreneurs to experiment. How might creativity happen online? Innovation programmes could play a stronger role iterating solutions in intellectual property, compensation, and community building.

Public support can help unglue dependence on large platforms. Recent steps to enhance protections of independents could help regulate power, as well as challenging the scope of platform control, observed in EU policies²³.

Platforms will eventually alienate people with their choices. While an immediate future without the big players is unlikely, decisions causing further public issues will influence people to gather, produce, share, and subscribe elsewhere. Ultimately, platforms are where people want to hangout and plug into relevant culture.

²² David Byrne. *How Music Works*. Fober; 2013.

²³ The Digital Markets Act (DMA) and Digital Services Act (DSA), while broad in scope, are challenging platform dominance.



distributed

Creative independent union

A multimodal subscription enables clusters of creators to take back control and become power brokers.

explicit

Cosy media clubs

Gatekept membership collectives become arbiters of taste and status, where price shifts to access.

Production salons

New subcultures emerge online, where creativity is nurtured in closed spaces and studied by researchers.

implicit

Mutual bingeing

Corporate platforms make a responsive nervous system of audiences for the sake of personalised experience.

centralised

Creative independent union

People became fed up with extractive digital environments, where individual creativity was constantly co-opted as a producer of empty, monotone 'cultures' at breakneck speed. Instead, peer-to-peer creative exchanges and collaborative content economies became popular. A digital publishing platform formalised these exchanges with a multimodal subscription, where trading in labour, listening, creativity, research, and other forms of value was accepted, then membership groups would form and be matched to an audience. Freelance was the most common form of employment for this new creative class, coming together as temporary constellations on any project.

Projects were shaped intimately by surrounding community feedback, a process of collectively-generated content. Creative User Trade Agreements crystallised explicit value exchanges for the duration of the collaboration, but they were precarious and often failed. Successful Projects became group intellectual property on marketplaces, procured for distributed interfaces across the planet, from building façades to live concerts. Platform corporations became eager clients of Projects, whose essence transfused feeling into engines, desire into devices. As this dependency became evident, Creative Independent Unions became power brokers, setting standards for Project rates and enforcing their own codes of conduct.

(distributed control, explicit transaction)

Production salons

When personalisation became synonymous with stunted taste. When fans were monetised into despondency. It was then the outflow from large platforms grew exponentially. It was all happening elsewhere.

Salons became a place where people could congregate around an interest, need, or predilection. Once small groups, these spaces grew into complex webs of exchange, where betas, early drafts, and media experiments were shared and iterated. Induction rituals and contracts set out group norms. They collectively owned their ramblings, disputes, humour, and rants, sometimes selling chapters of their living opus to trusted bodies and letting researchers study them for an ongoing fee. Each salon had their roles and their politics. Wardens set taxes in the form of quality participation, Custodians determined engagement with foreign entities and monitored energy demands, Curators intervened in the community life, Sentinels invested in security.

The illusion of sanctuary fractured when scandals exposed the inner workings of some salons. Sentinels allowed scrapers to harvest its content, selling the collective intellect without their consent. In other salons, Wardens expressed favouritism and doxxed members without group oversight. Exploited members became case studies, local authorities were blindsided.

(distributed control, implicit transaction)



Creative independent union

..... Creative complexity triptych

Jiarong Yu

Cosy media clubs

Dynamic pricing became the norm for cultural products, giving few access to scarce creativity. Clubs were scattered across the globe, with a curation of creators and offerings for every kind of audience. A formula mixing critical acclaim and perceived popularity determined the price to entry, where those considered invested in their cultures could participate and guide its development. Critics moderated these clubs, reclaiming their role as censors, gatekeepers, influencers. In response, artist organisations started lobbying for more government investment into investigations and anti-corruption policies targeting critics. For many, clubs were seen as regressive, for others, a necessity for sowing the seeds of new cultures. In parallel, production firms benefiting from a new system of cultural assets lobbied for more anti-piracy policies targeting the public. Dupe markets, reproduction at the edges of copyright, were common.

Language like bestselling, chart topper, box office hit, no longer made sense. Artforms whose business models relied on quantities sold were turned upside down as value centred on scarce, exclusive cultural experiences highly relevant to pockets of communities. Philanthropic and research organisations became central in legal initiatives to expand access to these burgeoning online cultures.

(centralised control, explicit transaction)

Mutual bingeing

Audiences were free to consume more and more of whatever they desired on platforms. Content was infinitely generated and depreciated, served on a platter by a virtual personal Producer. "I Made it For You, *from scratch*."

Home entertainment hardware was owned by platforms and leased to viewers at no cost. Remote sensing, facial expression recognition, mics, eye tracking, and galvanic skin response technologies allowed for consumers to be voraciously watched over by the Producer, who binged on the viewers' data, in a continuous feedback loop. Producers became emotional regulators. "Oh, *I know how you feel*. You need a pick-me-up."

A new mask was forged as symbol of this time's counterculture. It had to be motile, human-like. Just like Greek theatre masks, it caricatured human emotions. The mask played emotions at random and tricked the Producer's feedback loop into content generation psychosis. From under their masks, insurgent audiences were finally watching something new. Datasets were tainted. The Producer could no longer be trusted to deliver on personalised harmonisation. Consultants suggested it was the right time for disruptors, and broadcasting came back in fashion.

(centralised control, implicit transaction)

How will creative work evolve?

Disrupting the relationship between employer and employee has been a necessary evil to enable innovation cycles, however in our march forwards it's unclear if we're losing things we value (style, skills, livelihoods, social fabric). The chaos in labour systems is palpable. How we work shapes our senses, moulding our identity, then going on to influence our culture, a reflection of *ontological dependence*. The changing nature of creative work is worth understanding.

We can make sense of worker futures through discussion of these tensions:

Ethos

luddite vs. techno-optimism ethos

Will workers embrace new media technologies or maintain control over a way of working and producing with inherent value.

Governance

intervention vs. laissez-faire

What is plausible in a worker intervention scenario (by union, government, etc.) or a laissez-faire (let the market decide) approach.

Underlying developments at play

Aesthetic appeal will shape production techniques. In the past few years, audiences have demonstrated a strong draw towards nostalgic aesthetics²⁴. While aesthetics are often viewed through a superficial lens, they convey intangible messages around time, attention, beliefs, and values, shaping how a piece of media is perceived and connected with. The evolving use of tools are dependent on whether audiences appreciate what they convey.

Changes in workflows will reveal creative ethos. For digital artists, more interoperable formats like Universal Scene Description could remove reliance on a handful of tools. Tools using machine learning may be adopted if they enhance artistic exploration, whereas those that suggest automation of creative tasks could experience backlash. It's also possible there could be a renaissance where softwares simplify and refocus on a visual artist's needs if it serves desired styles²⁵.

Union movements will mediate automation. Worker organising is about ensuring equity in a sector that has been pressured and exploited for years, and the scope of activity from organisations like WGA, SAG-AFTRA, IATSE, and others will determine how creative workers are protected.

Special interest groups could fill a gap in the dialogue. If emerging models for creative work are deemed unethical, unsustainable, and harmful to cultural production, interest groups lobbying on behalf of the creative industries could play a role in intervention.

Government support will shape creative talent and identity. Recognising the creative industries as a connection to British culture, heritage, economic resilience, and the rest of the world, a technological transition requires careful thinking on what practices and groups to stand by. Future support for creative work may also hinge on how government define 'creativity' in an era of automation. These are all complex, political decisions for both national and regional decision makers.

24 Brendan Nystedt. Vintage digicams aren't just a fad. They're an artistic statement. WIRED; 2024.

25 Digital Fish's animation tools are built by animators, blending real-time capacity with an 'old school' visual artist ethos.

luddite

intervention

New vintage

A classic form of the creative industries is maintained through a national preservation programme.

Offline revolution

Digital technology is viewed as a means of inequality and cultural dilution, and creators turn to materials.

Hyper-polytechnic

STEAM is embraced as the dominant production ethos, and UCI offer a soft landing for those left behind.

Glossy worlds only

People get lost in familiar fantasy worlds, and the distinction between real and synthetic ceases to matter.

laissez-faire

techno-optimism

New vintage

As the creative industries continued to virtualise, automate, and fragment in increasingly dynamics ways, government stepped in to differentiate the nation amidst a crisis in culture. The Vintage Revival programme funded techniques and ways of working that ignited media arts from the past, positioning the country as a leader in classics. Late century shooting styles, archaic animation, studio systems, and other valued nostalgias were funded. This cohort was called the New Vintage, a class of creative workers infusing what Britain does best: tradition. They were cross-pollinators and convergent specialists applying their skills across mediums, whether in the form of passive, interactive, or live experiences.

The programme felt omnipresent, with technologies cared for by regional clusters in obsolescence. Their appraisal also demoted modern workers like real-time masters and stoked conflicts in workplaces. Vintage felt prideful. It provoked debate on equity, with Vintage aligned with the UN's development goal of *cultural preservation* but less with ecological sustainability, which everyone else was pressured to prioritise. And, while works were heavily regulated, underground markets emerged to sell craftwork onto foreign machine learning companies, codifying protected styles.

(luddite ethos, intervention)

Offline revolution

Anarchy began to take root among creatives, making its presence in universities and organisations across the globe. Members began rejecting softwares associated with big technology, then deleting traces of their work online. A manifesto is shared.

1. Creation belongs in the material world, not the digital void
2. Machines have eclipsed humanism and economic equity
3. We embrace intimacy over limitless exposure
4. We reject the sanitised aesthetics of the virtual age
5. To our audiences we propose discovery, not delivery

The manifesto found its place among artisans, poets, dancers and sculptors. It tore the writing and filmmaking worlds in two. It was co-opted by governments looking for a narrative to justify stepping away from tech-oriented, and often expensive practices in creative work. Members and affiliates began to record their making process, and the record was inseparable from the final work of art. It was their practices and politics that united them, while their works remained aesthetically varied. When it was over, eclipsed by newer perspectives, it found its footing in history books as an arts movement called *Offline Proceduralism*. From there, a new family of software providers found their footing across generations of creatives, centring equity and the transmission of human touch into any pipeline.

(luddite ethos, laissez-faire)

New vintage

Creative complexity triptych

Jiarong Yu



Hyper-polytechnic

Incentives to boost technological innovation changed the shape and feel of creativity, however most saw it as the only way to safeguard sector growth. Perceived relevance came above all else. Over time, the landscape had a clear division of pay, regard, and well-being between digital artisans and technicians, who once occupied more strategic or hands-on roles. Those forgotten would find their ways onto zines like *Factory* capturing the dominance of Britain's media and entertainment ecosystem, but also a shift of creative roles into a world of bits. Art schools, little then all at once, offered only polytechnical programmes, a reformed creative education offering apprenticeships with major media-tech employers.

Artists didn't want to fall into the bracket of technicians. So, they were disruptive and innovative at all costs to prove their critical and aesthetic views. Fear of being replaced began to erode learning and the rhythm of creative work. Others took up the government's offer on a Universal Creative Income scheme, while low paid it offered persistence in one's craft. Some, disillusioned with the direction of the sector, left the country all together, joining collectives rethinking cultural production in countries offering Creator Visas.

(techno-optimist ethos, intervention)

Glossy worlds only

Old definitions of creative industries were eclipsed by worldbuilding. Everyone could generate their visions into worlds of intellectual property, fuelling the creation of user-generated films, games, and performance art, where distribution principles could be codified by original or personalised release.

Fanfiction became a common key to navigate this library: *What world are you constructing on?* So it was; even if Winnie the Pooh became eerily glossy and sleek, a quick query could remind one of his original body and the rustic, inviting forest he inhabited. The line between real and synthetic ceased to matter beyond fleeting curiosities, all a fantasy for subjective shaping, the origin stories only kept by Provenance Keepers. Every time a creator built on a world, IP was programmed, a chain tracking contributions. It seemed open and inclusive, but many people felt like they didn't belong here, amidst ever-virtualised spaces.

Years, months, and weeks of production work were condensed into seconds, minutes, and hours. While there was suspicion if efficiencies in neural networks, hardware, and user limits were enough for carbon goals, accountants warned going back to the previous production model. Taking part became a question of charged politics, whether one was for Democratised Creativity or the bygone era of Creative Elites.

(techno-optimist ethos, laissez-faire)

Crafting judgment from uncertainty

In our end-of-year board meeting, we shared our provocations and a few scenarios to get board members making sense of complexity. Over time, our aim is to develop perspectives that can direct us through ambiguity.

Recognise the work happening on the ground. Everyday creative workers have the benefit of locating what is unseen and undervalued, and this is often the bedrock for wise innovation²⁶.

A lot of development potential will be captured by emerging players coming from within the creative industries. Present focus is on high valuation machine learning companies or movements by legacy tech, however this overlooks a new class of entrepreneurs coming from within the sector, with deep contextual knowledge. These people also tend to have a more precise understanding of how recent machine learning techniques can be applied to solve problems or enable artistic expression in current pipelines. With their core business in the creative industries, they also are more likely to effectively position a solution and grow sustainably, while carrying a lower risk profile (understanding sensitivities around data, intellectual property, compensation standards, and other sensitive issues large entertainment corporates must oversee)²⁷.

The real opportunity is in limitation. Smaller models built in situ could play a stronger role in solving discrete, recurring creative issues. Local providers should be empowered to build their own systems, localise data and have more ownership over ethical practice like data transparency. People could be overestimating the compute necessary to participate²⁸.

Encouraging open-source behaviour is essential. Productising and restricted open source is providing an illusion of openness. The sector should be empowered to view practices through their own unique lens, to push back, and engage in a process²⁹ of defining machine learning practice through a countercultural lens, whether it's punk, humanism, or something else. This is the opportunity for the creative industries.

The rapid productising of models reflects a profound oversight of the government to protect creatives³⁰. Rhetoric by technology leaders to justify this, such as each contribution being marginal for data training, bears parallels in any case in history where individuals have been marginalised for another group's profit. First-movers are setting norms around training, however it's communicating a subliminal message that those who do follow ethics will only be taken from later. The question for government is if they want to enable the same patterns from tech entrepreneurs over the last couple decades.

Data licensing is an innovation problem modulating fair acquisition. In addition, the role of synthetic data needs improvement around both ensuring diverse representation and preventing future risks around homogenising datasets to the extent of cannibalism³¹.

26 Deborah Williams OBE highlighted meaningful work will emerge in areas we're overlooking, often outside the small or big tech binary our financial lexicon can influence us to look from.

27 Darren Cosker and Lincoln Wallen underlined the potential will come from entrepreneurs, targeted entrants in the creative industries.

28 Bill Thompson clarified assumptions around experimenting with these tools, and noted that it is relatively straightforward to run a powerful LLM locally.

29 Deborah Williams OBE recognised machine learning in the sector as a process to be shaped, not an end product.

30 Greg Maguire emphasised there's been a clear failure in copyright law, regardless of present investment direction.

31 Gibney, E. AI models fed AI-generated data quickly spew nonsense. Nature; 2024.

The threat of automation in the creative sector is about equity. Not only has the rights of creators been disregarded, but machines are predictably deployed to get rid of people and cut costs, externalising risk to communities and wider society³². With the growing importance of companies acting ethically, whether for regulatory or investor interests, we must ask if deploying any technology for automation will only externalise risks we need to solve later, reflecting a feedback loop of the last 40 years of commerce. This is a foresight and consequence mapping exercise.

User-generated platforms have given creators the tools to produce and level the creative playing field.

Though, the social, economic, and political importance of these spaces need recognition. Education is highlighted as an essential piece of the puzzle for creatives to develop fundamentals around navigating platforms and fostering self-sufficiency as an independent. This is valuable as traditional funding sources are being replaced by more self-sustaining models, where independents can fund, distribute, and control work themselves. Recent legislative efforts to protect freelancers and independents could offer better foundations.

Platforms tend to commodify and normalise creative labour without giving people sufficient control, compensation, and protections. Platforms are currently presented as a centralised or decentralised binary, however dysfunction can be found in either philosophy. The real interest is in platforms that enable creator autonomy, community-driven cultures, and new forms of economic and cultural exchange, and moving beyond this binary can lead to more thoughtful problem-solving around root issues. There is a resounding interest in shared infrastructures that foster community and push away from systems that are progressively extractive³³.

New forms of intellectual property could be an area of further study. The notion of something that can be held by networks of freelancers with certain permissions was interesting, especially since creativity often occurs out of a group effort³⁴. This could be a way to further protections of independents reliant on project-based or gig work, as intellectual property enhances economic resilience³⁵.

Producers play a significant role in designing systems of creativity, shaping the future of work. Creative work is evolving to be more inter- and anti-disciplinary, presenting an opportunity to view tools and norms of practice as a question of design, rather than linear execution³⁶. Part of this is celebrating the value of work-in-progress, and how process is the very thing that informs craft.

The degree of ambiguity and confusion is hurting future talent. The pace of change and lack of reliability in the system has many young creatives wondering why they should bother entering the industry³⁷. A perceived lack of control over careers exposes a crisis in creative agency due to both actions in the tech sector, and broad uncertainty around what these tools signify. Reestablishing a sense of agency for the sector through clear leadership is essential.

The rhythms of creative work influence what is made. While remote working supports individuals in various ways, the loss of in-person dynamics is worth exploring, where it's not just about 'collaborating' but friction, competition, and the interplay of emotions that arise when you're creating something new³⁸.

32 Greg Maguire clarified the aim of many machine learning applications and how they're applied, a pattern likely to continue.

33 A board member advocated for the need to consider more creator-centric models to empower independents.

34 Lincoln Wallen described creativity as an effort that is collectively-shaped, as opposed to the common assumption it is solely vested in the individual.

35 The Policy and Evidence Centre recently released a study demonstrating intellectual property enhances economic resilience.

36 Alex McDowell discussed the need to reconsider production systems from the frontend, through a design lens.

37 Greg Maguire has observed animation transform several times, and believes this moment is the most disruptive to people.

38 Sue Lyster discussed the value of in-person collaboration and the intangible value lost by changes in work rhythms.

Preserving humane activity in the sector is a priority. The dynamics behind what should be automated or not are complex, however the thesis that machines will author and judge content should be rejected³⁹. It is essential the public's expectations are managed, risks are highlighted, and the intrinsic value of creative work, and what this practically looks like, is clear.

The term 'creative sector' demarcates creativity, suggesting it lives exclusively alongside media and entertainment. However, creativity, or the personality trait 'openness' exists across sectors. There must be greater recognition around how creative skills can be applied to benefit all areas of society⁴⁰.

CoSTAR is live amidst a broad systemic change. We must consider how we're shaping systems for a more vibrant, durable, and equitable creative industries. Issues around ownership, power, and control are prominent for a reason. There is an inherent political dimension of the creative industries and the interaction of TESCREAL ideologies over the last decade⁴¹. Observing philosophies in tension and facilitating these disagreements can help us find a constructive opening. This conflict isn't unique to the sector, and it can act as a powerful case study for others.

By grounding the *Moments* workstream in areas of complexity that are likely to endure across the CoSTAR programme, we can align the network around profound challenges in the creative sector where research has the potential for high impact.

Often, research attempts to capture what exists but is unknown — this is insight. Or, it poses questions and draws conclusions with an underlying linear and deterministic assumption of how the future unravels - this is often how foresight and forecasting is understood within organisations. However, the future rarely unravels how we think it will, and we often underestimate our own agency in both shaping and anticipating change. What is most enabling for the creative industries is to start from what is profoundly complex and uncertain today. Through this process, we can develop a better relationship with the future, as these challenges can only be progressed through an imaginative engagement with what's possible, rather than a reactive approach to the status quo. These questions offer a foundation to build from, and we anticipate making progress on them across CoSTAR's five-year programme.

Who gets to own machine learning?
 What platforms will facilitate culture?
 How will creative work evolve?

The provocations, tensions, and scenario frameworks in this report can be used by readers to draft their own scenarios, to further map plausible futures.

39 Lincoln Wallen emphasised a central focus was on judicious use of these tools, ensuring the protections of human authorship.

40 Sylvia Pan expressed a need to reconsider how we place creativity and creative skills, to drive meaningful change in other sectors.

41 Bill Thompson made this point clear, sharing the observation that techno-optimism has largely been co-opted. In his opinion Luddites were techno-optimists who wanted to preserve their autonomy and ensure that machines were not used to reduce the quality of goods.

Toward capturing nascent change

This report, and the work to date, comprise setting up our foresight study. Moving into 2025, with the CoSTAR network's official launch, we will begin sharing out the core of our study's findings around nascent change in the sector, from emergent gaming applications to responsive, synthetic musicians and the growing prevalence of media that heals, connecting these instances with researchers, policymakers, and industry for further exploration.



Creative complexity triptych, Jiarong Yu, 2024

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