CREATIVE INDUSTRIES

FORESIGHT 2030

Creative Industries Foresight 2030

Sustainability & Industry 4.0

Update April 2021

Disclaimer

Certain information set forth in this study contains 'forward-looking information' including Creative Industries Sector economic and employment projections (collectively referred to herein as forward-looking statements). These forward-looking statements are provided to allow readers the opportunity to understand the authors' views in respect of the future so that they may use the information as one factor in decision-making.

Actual performance in future periods may differ materially from any projections and undue reliance should not be placed on them without additional verification. The forward-looking statements are based upon assumptions, and there can be no assurance that these forward-looking statements will prove to be accurate, as such statements necessarily involve unknown risks and uncertainties.

The University for the Creative Arts cannot be held liable for any decisions made as a result of data, information or analysis in this report.

Professor Martin Charter
Director
The Centre for Sustainable Design®
Business School for the Creative Industries
University for the Creative Arts
email: mcharter@uca.ac.uk

Dr. Trevor Davis FRSA
Managing Director
Trevor Davis & Associates Ltd

email: trevor@curiousdemon.com

Foreword

When we released the original report in April 2020[i] it was already clear that momentous events were in play. There had already been one lockdown in the UK because of the COVID-19 pandemic, and the rhetoric around Brexit was increasing as deadlines approached. We even went as far as to write "The social and cultural value of the Sector is, perhaps, incalculable, and creativity is surely at a premium as the UK transitions out of the European Union (EU), and we deal with the uncertainty and fallout caused by the COVID-19 pandemic."

Many underlying trends continue as before, but the past year has dramatically accelerated the digital trends we identified in the original report (see Appendix for a summary). Looking backwards it is extraordinary how much has happened in the intervening months: more lockdowns to save lives and the National Health Service, suspension of much in-person entertainment, the classification of some retail (including

fashion) as "non-essential", the USA leaving and then re-joining the Paris climate agreement just to mention a few events. During the pandemic the Creative Industries have lifted the national mood and shown great initiative with livestreams, Zoom fashion shows and innovative filming guidelines. Yet much of the Sector has been hit hard in terms of revenues and employment. Generous furlough schemes have helped national arts and cultural institutions, but not helped the vital gig economy; the Brexit Deal struck casts a shadow over touring musicians and small, craft exporters.

We are now in 2021. Vaccines are rolling out. It is the United Nations International Year of Creative Economy for Sustainable Development. COP26 is coming up in November 2021. Industry 4.0 will be 10 years old. We believe it is a good time to take stock and look at the medium to long term impact of the past year on our projections for 2030.

---

[i] Creative Industries Foresight 2030: Sustainability & Industry 4.0, April 2020, UCA
   https://cfsd.org.uk/wp-content/uploads/2020/04/UCA_CI_Foresight2030_RevA.pdf

Executive Summary

Between January and March 2020, a brief foresight 2030 study was conducted, supported by Research England's Strategic Priorities Fund. Through desk research, expert interviews and workshops, the study set out to envisage what the Creative Industries[1] in the UK might look like in 2030, and what role Sustainability and Industry might 4.0 play. This report, again with support from the Strategic Priorities Fund, updates the findings and recommendations in the original based on the events of the past year.

Audience and purpose of this document

This document is intended for people involved in forming policy for the Creative Industries in the UK, those with an interest in education and learning, people pursuing a research agenda relevant to the Creative Industries, and the broader stakeholders across all of the sub-Sectors of the Creative Industries

The purpose of this report is to examine what has changed since the original publication, how the industry has been affected, and what the longer-term prospects are now.

Key learnings from the original report

- Prior to the pandemic, the Creative Industries were set to grow much faster than the rest of the UK economy

- Expectation of a Gross Value Add (GVA) of around £300bn by 2030. Exports could be expected to exceed £100bn

- The Sector is highly fragmented and will remain so in 2030 with 350,000 microbusinesses and SMEs, 95% employing fewer than 10 people

- Eight trends were identified in the original study. A number of these trends are inter-twined

- *Four trends are identified that could reshape Sustainability and the Creative Industries* in the UK over the next decade:

  1. The role of automation to support creative work; increasing productivity while improving energy and resource efficiency. The experts involved in the original study viewed the Creative Industries as resilient against job losses due to automation
  2. Growing awareness of the urgency to address climate change, and appreciation of the need for more action by the Creative Industries
  3. Delivering on Sustainability goals requiring people working in the Creative Industries to become more engaged with citizens, regional and local organisations, and policy makers in the Creative Industries through the network of Creative Hubs across the UK (local, regional and national)
  4. Innovative design (especially to address the needs of products, services and experiences in a de-carbonised and more Circular Economy)

---

[1] Advertising & Marketing, Architecture, the Arts & Culture, Crafts, Technology Services & CreaTech, Design, Fashion Design, Gaming, Music, Performance & Visual Arts, Publishing, Film & TV.

- *Four trends are identified that could reshape Industry 4.0 and the Creative Industries in the UK over the next decade*:

    1. The dependency of the UK Creative Industries on export growth (economic and cultural value embedded in Industry 4.0 technologies)
    2. Greater competition for audience and consumer attention, making for a more competitive environment (referred to as the 'attention economy')
    3. Digital creation (e.g. of content, product designs etc)
    4. Related to point 4 above - sustainable design of products, services and experiences in a low-carbon, more Circular Economy.

- The Creative Industries action on Sustainability is hampered by fragmented approaches and little cross-fertilisation across sub-Sectors

- The UK government has signed a target of net zero carbon emissions by 2050 into law, becoming the first of the G7 to do so. As information and communication technologies will enable intellectual property-based businesess, such as those in the UK Creative Industries, to grow much faster than the rest of the economy, it is essential this growth should be de-carbonised

- Industry 4.0 technologies have led to the emergence of a new rapidly-growing Creative Industries sub-Sector at the intersection of creativity and technology: CreaTech[2]. This has the potential to do for the Creative Industries what FinTech has done for Financial Services

- More generally, adoption of innovative and sustainable design practices in the Creative Industries will require artists, designers and entrepreneurs in the Sector to think and work differently, and use Industry 4.0 tools for digital creation

- Current policymaking processes and governance relies too heavily on central government and the larger creative businesses that can afford dedicated roles

- There is a lack of representation for the breadth and depth of the Sector. Unlike many other UK industrial Sectors there is no a single trade body acting as a voice for the entire Sector (although the Creative Industries Council seeks to fulfil that function)

- The mass of the Sector ecosystem is based on independent talent, freelancers, micro and medium-sized businesses, and a gig economy. Many Higher Education and Executive Education offerings are not well-suited to those already in employment. They need greater flexibility, remote learning and more modular delivery ("bite-sized")

- See Appendix for a more comprehensive summary

Key findings in this update

- During successive lockdowns the cultural "value-add" of the Sector has been vital in terms of national morale and societal well-being

- Creative Industries hit harder than most Sectors by lockdowns and social distancing measures. The largest revenue falls were in the performing arts and music. Government support schemes were welcome, but a proportion of freelancers in the gig economy were excluded

---

[2] The Creative Industries Council define CreaTech as "where creativity meets technology. It brings together creative skills and emerging technologies to create new ways of engaging audiences and to inspire business growth and investment."

Change in GVA

Sources: DCMS, Oxford Economics, EY, Authors own calculations
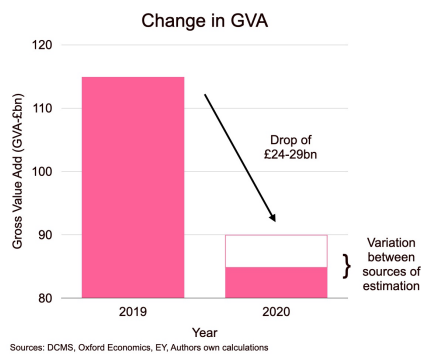
- Estimates vary for the drop in turnover for the Sector in 2020: the likely figure is somewhere between £66-77 billion relative to 2019, equivalent to a drop in GVA of £24-29bn.[3] Even with a strong bounce-back, the sector may end up 13% smaller in terms of GVA in 2030 compared to previous estimates

- Estimates for job losses vary from 100,000 to 400,000: the structure of labour market and variable definitions makes estimation problematic. There is uncertainty over how many job losses are permanent

- The pandemic has revealed many of the longstanding fault-lines in the Sector. For example, the fragmentation of representation for the Sector as a whole, fragility of the gig economy, weak cash flows and dependency on royalties (which dropped by 35%), disparities based on geography

- Pandemic lockdowns have led to a dramatic acceleration in adoption of digital, Industry 4.0 technologies. "A decade in a year" according to the Confederation of British Industry (CBI)

- Pivoting to digital for music and performance has kept audiences, fans and consumers engaged, but not offset the loss of revenue for creators

- Collapse of non-essential retail chains in the fashion sub-Sector has accelerated development of ecommerce and digital business models such as subscriptions. However, margins are thin

- Big winners in 2020 have been sub-sectors such as gaming, and corporate technology players and streamers, typically outside of the UK. Zoom and TikTok have joined Facebook, Amazon, Apple, Netflix, and Google – the so-called FANNGS - to become FANNGS-ZTT

- Companies providing technology services to the Creative Industries also grew in 2020, showing the resilience of CreaTech and further illustrating the importance of technology as a growth engine

- During 2020 over 800,00 new small businesses were set-up across all Sectors in the UK (a 41% increase on 2019). The Creative Industries was the most popular Sector for young entrepreneurs (nearly one in five targeting the Sector)

- EU exit is seen as particularly problematic for touring musicians and others in the performing arts. The main issue is work permits and visas costs for UK artists and crew. For those sub-Sectors involved in making and production (e.g. luxury goods, craft and fashion) complex VAT charges, export paperwork, handling costs and Customs delays are also causing concern, and there is an urgent need for specialist advice

- With 2021 as United Nations International Year of Creative Economy for Sustainable Development, the climate emergency remains high on the agenda, joined by biodiversity as a top priority. The 26th Conference of the Parties of the United Nations Framework Convention on

---

[3] The higher figure comes from THE PROJECTED ECONOMIC IMPACT OF COVID-19 ON THE UK CREATIVE INDUSTRIES, published by Oxford Economics, July 2020. The lower figure comes from the authors using full year estimates for 2020 available March 2021. There is high uncertainty in both estimates given the fluidity of the situation.

Climate Change (COP26) in November 2021 will be a focal point for new Sustainability initiatives

- Youthful Sustainability activism continues and safeguarding nature seems especially important for Generation Z and Alpha who have been moved to act by powerful statements on the environment from figures such as Sir Richard Attenborough and Greta Thunberg

- Industry 4.0 celebrates its 10th anniversary in 2021 and adoption has risen dramatically during the pandemic as remote collaborative working has been forced onto creators and the population at large. Many success stories in the Creative Industries ranging from immersive experiences at home to multi-million art sales using blockchain technology (NFTs, or non-fungible tokens[4])

- £1bn of Venture Capital (VC) investment in UK CreaTech during 2020, with artificial intelligence and related areas receiving roughly half of that amount. However, the Sector as a whole has a significant digital skills gap, made more apparent during the pandemic as the Creative Industries digitally transform at pace

- Universities quickly developed online versions of their courses for the Creative Industries, but for some current students, and those in the pipeline, by-passing their qualifications and starting their own business may prove more attractive as job prospects appear poor

- Vocational education for the Creative Industries has been particular hard hit by the pandemic as students no longer have access to studios and equipment

- As location based teaching returns after COVID-19, the distance and blended learning approaches of 2020 are likely to become the norm going forward. This may also be beneficial to those working in the industry and looking for skills upgrades of "bite-sized" courses are offered

- EdTech entrants into the UK market have also boomed during 2020, offering accredited courses in the Creative Industries from world-class institutions such as MIT

Creative Industries

- Advertising & Marketing
- Architecture
- The Arts & Culture
- Crafts
- Technology Services & CreaTech
- Design
- Fashion Design
- Gaming
- Music, Performance & Visual Arts
- Publishing
- Film & TV

Latest recommendations

1. Create a unified vision and strategy for the Creative Industries
2. Engagement with the full scope of the Creative Industries by policy makers
3. A new body to improve representation and focus support (particularly for the smaller businesses and freelancers)
4. Pursue a more inclusive, balanced approach to the Creative Industries
5. Commit more public funds and promote private investment
6. Make international working and trade more straightforward
7. Create a resilient creative infrastructure for the future
8. Take further action on Sustainability now ("build back better")
9. Make digital up-skilling a priority for the Creative Industries as a whole
10. Make digital a core organisational competence
11. Increase focus on industry collaboration and research
12. Match education and learning to the structure of the industry

---

[4] NFTs contain unique identifying information recorded in Smart Contracts on a blockchain. This standardisation has enabled rapid expansion since 2018, and has fuelled a spectacular rise in use for art auctions and music sales.
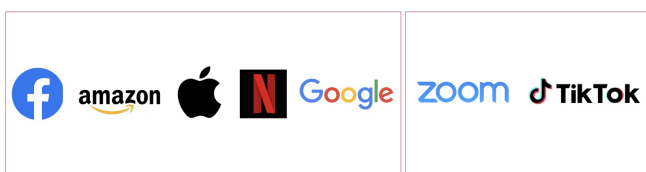
Contents

Introduction

A brief foresight 2030 study was conducted between January and March 2020 using desk research, interviews and workshops. That Research England Strategic Priorities Fund supported study was the first to examine the link between Sustainability and Industry 4.0[5] together, and what this means for policies in the Creative Industries (see Appendix for summary).

Research for that study suggested that the UK Creative Industries were set to grow much faster than the rest of the UK economy (possibly up to three times faster), reaching a Gross Value Add (GVA) of around £300bn by 2030.

The original study set out to envisage what the Creative Industries in the UK might look like in 2030, and what role Sustainability and industry 4.0 might play, whilst recognising that there are other key issues for the Creative Industries. The immediate impact of two of those issues, EU exit and the COVID-19 pandemic are now apparent. Also, there is fresh information such as major developments in the use of technology in the Creative Industries and the Government Culture Committee examining the impact of streaming business models on music. Hence this update.

This document updates the original report by:

- Revisiting the original report in the context of events from the last 12 months
- Presenting new insights and trends
- Examining their impact on the Creative Industries[6]
- Updating the recommendations

A Year in Review

In terms of impact on the Creative Industries in the UK, COVID-19 and Brexit are the two major events since the original report in April 2020.

COVID-19 has had a global impact on the Creative Industries, with similar effects (and current responses) around the world. During successive lockdowns the cultural 'value-add' of the Creative Industries has been vital in terms of national morale and societal well-being (should we measure 'Gross National Happiness', perhaps?). Despite consumers pivoting to digital consumption this has not offset the revenues lost from more traditional channels, and concerns by artists over income from streaming continues. The big winners appear to be the corporate technology players, typically outside of the UK (e.g. Zoom and TikTok joining Facebook, Amazon, Apple, Netflix, and Google - the so-called FAANGs - becoming FAANG-ZT).

Internationally, multiple reports identify the Creative Industries as one of the worst

---

[5] 'Sustainability' in this report refers to both the 'Triple Bottom-Line' of Sustainability (environmental, economic and social), and 17 the United Nations Sustainable Development Goals (UN SDGs). 'Industry 4.0' (sometimes used interchangeably with '4th Industrial Revolution') is used to describe smart production facilities based on technologies such as artificial intelligence (AI), the Internet of Things (IoT), and robotics and automation.

[6] This report essentially uses the same definition as DCMS for the Creative Industries, excluding Museums, Galleries & Libraries. The scope of this work is Advertising & Marketing, Architecture, the Arts & Culture, Crafts, Technology Services & CreaTech, Design, Fashion Design, Gaming, Music, Performance & Visual Arts, Publishing, Film & TV. The Creative Industries Council define CreaTech as "where creativity meets technology. It brings together creative skills and emerging technologies to create new ways of engaging audiences and to inspire business growth and investment."

affected Sectors because of lockdowns (alongside other cultural organisations) and there was a precipitous loss of revenue for most sub-Sectors in 2020. In the UK the largest revenue falls were in in the performing arts and music due to venue closure and social distancing measures.

More generally, the financial stability of parts of the Creative Industries and the wider creative business ecosystem (not just the gig economy) is uncertain at this moment. This may have been the case for some time before the pandemic, despite the sizeable contribution to GDP.

Estimates vary for drop in turnover in 2020: the likely figure is somewhere between £66-77 billion relative to 2019 (equivalent to a drop in GVA of £24-29bn)[7].

London is likely to have seen the largest drop, but may bounce-back faster than the rest of the UK.

An Oxford Economic study from July 2020 (see footnote) highlighted that the Regional impact has been uneven, and many smaller venues may have closed permanently (in effect, the UK has levelled-down temporarily). Despite these falls, and the vulnerability of parts of the Sector, the
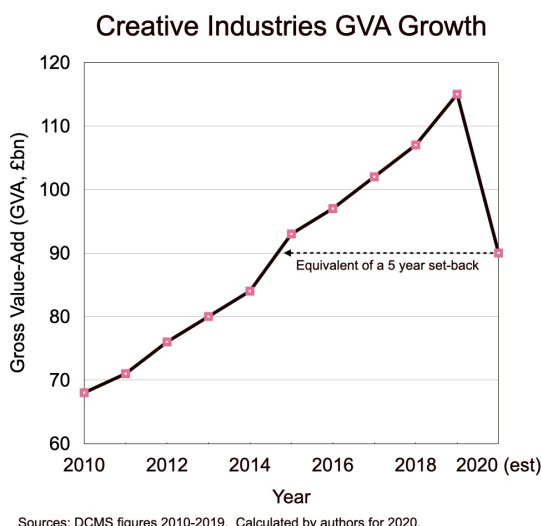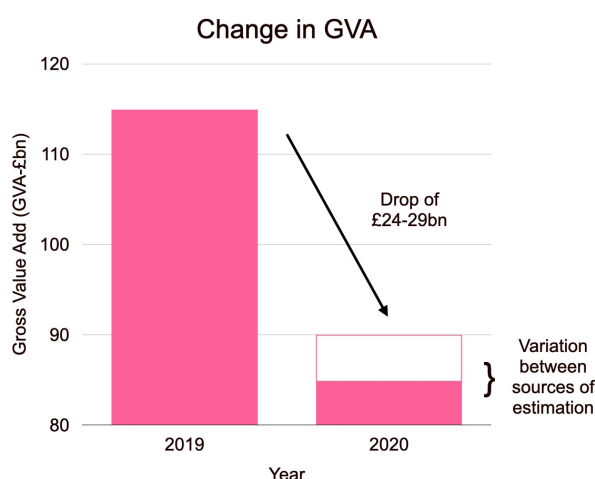
Creative Industries remain one of the largest contributors to UK GDP, and have many underlying strengths.

Estimates for job losses vary from 100,000 to 400,000: the structure of labour market and variable definitions makes estimation problematic (this is not a UK specific reporting issue). How much of those job losses are permanent is unknown.

However, it is not all bad news with streaming and gaming seeing single digit growth (one report quotes 9% compared to 2019). Also, companies providing technology services to the Creative Industries (eg CreaTech businesses providing infrastructure for game development and simulation) have also grown. Many examples of institutions such as the National Theatre and Rambert pivoting to streaming their back catalogue and investing in innovative, new interdisciplinary commissions. Indeed, High-end TV and film had a stellar quarter at the end of 2020 as the industry quickly developed new working practices and secured financial assistance from the private Sector.

Many of the biggest winners are, however, outside of the UK such as the large

Change in GVA

Sources: DCMS, Oxford Economics, EY, Authors own calculations

Creative Industries GVA Growth

Sources: DCMS figures 2010-2019. Calculated by authors for 2020.

---

[7] The higher figure comes from THE PROJECTED ECONOMIC IMPACT OF COVID-19 ON THE UK CREATIVE INDUSTRIES, published by Oxford Economics, July 2020. The lower figure comes from the authors using full year estimates for 2020 available March 2021. There is high uncertainty in both estimates given the fluidity of the situation.

streaming platforms (eg Netflix), and technology companies such as Zoom. This reinforces a finding of the original report that the UK continues to struggle to build scale technology businesses that compete internationally with the FAANG-ZT (see earlier comment).

In 2020 over 800,00 new small businesses were set-up in the UK (a 41% increase on 2019). A survey by web-company GoDaddy shows that 75% of 16-24-year-olds said they started their own business because there were not enough employment opportunities for them in the current economic climate (this translates to around 600,00 of the start-ups). The Creative Industries was the most popular Sector: nearly one in five young entrepreneurs is targeting the Creative Industries[8].

The negotiated EU-UK Trade and Cooperation Agreement has little to say about Services and the Creative Industries. Much remains the same for TV and Film, but EU exit is seen as particularly problematic for touring musicians and others in the performing arts (eg the National Theatre has cancelled European tours in the short term). The main issue is work permits and visas costs for UK artists and crew. As a result, when artists travel to EU countries they may choose to hire local crew instead of taking UK crew with them until workarounds or bilateral agreements are made. New and emerging artists are particularly disadvantaged by the current situation.

Smaller UK support acts are particularly disadvantaged from increased touring costs for the EU. They are not usually getting paid, they rely on sales of merchandise, and are operating on very thin margins. Also, their touring applications for other territories such as the US depend on being able to demonstrate that they have been successful

(eg touring in EU) and can prove their worth. For those sub-Sectors involved in making and production (eg luxury goods, craft and fashion) complex VAT charges, export paperwork, handling costs and Customs delays are also causing concern. There is a need to provide sound and specialist guidance (there is an uneven patchwork of local sources currently eg the EU Post-Transition London Business Resource Hub). Longer term there is a need to negotiate more favourable reciprocal agreements within Europe that are specific to Creative Industries, backed-up with specialist support.

Despite the noise around EU exit, the UK continues to enjoy a positive reputation across the world, particularly amongst young people: to a large extent this is because the UK Creative Industries have continued to engage globally with audiences and consumers. In an Ipsos MORI poll in 2020, the UK was the most attractive country for young people across the G20[9], and there is still a view that our education system is world-class.

In the short-term, consumer behaviour has shifted dramatically towards online during the pandemic and there is a question concerning whether it will revert to previous patterns once lockdown is over, or will new blended-learning models accessing combinations of live and online experience be the norm. In the retail world there is the notion of 'revenge shopping' to describe the anticipated surge when personal freedoms are returned and vaccines have removed the fear factor and this may help the design and fashion sub-Sectors.

The pandemic has revealed many of the longstanding fault-lines in the Creative Industries. For example, the lack of representation for the Creative Industries as

---

8 https://startupsmagazine.co.uk/index.php/article-covid-19-creates-boom-early-entrepreneurs-aged-under-25
9 Featured in The Integrated Review of Security, Defence, Development and Foreign Policy ("Global Britain in a Competitive

a whole, fragility of the gig economy, weak cash flows and dependency on royalties (which dropped by 35%, according to The European Grouping of Societies of Authors and Composers), disparities based on geography et cetera. As mentioned above, leaving the EU has revealed other fault-lines such as lack of preparedness for complexity in exporting goods, and navigation of rules for visas and there is no 'go to' source of advice for the Creative Industries currently (although an Export Office is under consideration).

The Self-Employment Income Support Scheme (SEISS), Coronavirus Job Retention Scheme (CJRS) and other measures (eg the £1.57 billion Recovery Fund and the 2021 Budget top-up for the Creative Industries) have been welcomed, but focused on anchor institutions such as flagship theatres around the country. Through a lack of representation or design these schemes have excluded support for the those in the gig economy (the backbone of the industry) on PAYE freelance contracts, and this part of the ecosystem may take many years to recover. In addition, a consequence of Brexit is that may result in a transfer some of the gig economy outside of the UK as touring musicians hire in the destination country to avoid visa costs (rather than take UK citizens with them).

Major industry players and collective management organisations (eg Performing Rights Society for Music) have created their own hardship funds, often with an emphasis on support for smaller businesses and freelancers. As examples, Netflix contributed $150m and the Incorporated Society of Musicians Members Fund has made £200,000 of hardship funding available. However, many are still looking to leave the industry because of a lack of job security, and perceived lack of UK government financial support for significant parts of the creative labour market (and some other countries viewed as having addressed this unique labour market more effectively). Recent submissions to the Parliamentary Select Committee on Culture, Media and Sport, plus publications from the Creative Industries Council, have brought renewed focus on these challenges.

Sustainability

Business, government, civil society and thought leaders continue to sharpen their focus on the risks of climate change. The World Economic Forum Global Risks Report 2021 highlights immediate concerns regarding the pandemic and links to social inequality, but also shows that the highest likelihood risks of the next decade are the climate and environmental ones. It also cautions that economic bounce-back may further exacerbate those risks.

Consumer attitudes have shifted, too. A survey of consumer trends (published in late 2020 by the World Economic Forum) revealed that two-thirds of consumers expressed the view that businesses should demonstrate greater involvement in social and environmental outcomes post-pandemic.

Implicit and explicit public awareness of the Sustainable Development Goals (SDGs) has also been dramatically raised in the last year by events such as wildfires in Australia, melting glaciers and accelerated iceberg calving (the natural process of icebergs berthing new icebergs). Christian Aid estimate that the top ten extreme weather events in 2020 have cost the world over £100 billion. Reinsurance company Munich Re put the figure for all extreme weather events at close to £200 billion. 2020 is likely to be the warmest or second warmest on record. 2020 also brought in a greater number of initiatives in the Creative Industries related to both climate change and non-climate SDGs such as reduction in inequality and gender equality. For example, the UK gaming industry launched a diversity pledge,

#RaiseTheGame. So far over 100 organisations have become pledge partners. Current inter-governmental initiatives, such as the United Nations International Year of Creative Economy for Sustainable Development, are also bringing greater attention to all of the SDGs in the context of the Creative Industries. A number of projects and communities have been established under the Year of Creative Economy banner to show how the Creative Industries can be a driver for inclusive and sustainable growth.

International Year of Creative Economy for Sustainable Development 2021

As an example, communities such as Creativity, Culture & Capital (a multi-stakeholder group including Nesta and the British Council) are showing how newer investment models such as impact investment[10] can better align capital in the Creative Industries with the SDGs as the world 'builds back better.' There is a recognition in all of these Year of Creative Economy initiatives that the Creative Industries are transformative in terms of job creation and exports, as well as having a key role in communicating values such as equity and equality.

However, the climate emergency remains high on the agenda, with the drive to transition economies to net-zero carbon emissions (as enshrined in UK law in 2019 as a goal for 2050), being joined by biodiversity loss as a top priority. 2021 marks the start of the United Nations Decade on Ecosystem Restoration and there will be a UN Biodiversity Conference, crucial to the development of the post-2020 global biodiversity framework, later in 2021 in China. In addition, there are expert meetings this year on scientific advice and implementation. To quote the Executive Secretary of the United Nations Convention on Biological Diversity, "These meetings provide us with a tremendous opportunity to ensure that the protection and sustainable use of biodiversity is integrated into policies that will guide the post-pandemic economic and development recovery plans."

This focus on climate change and safeguarding nature seems especially true for younger consumers, fans, creative professionals and makers who are moved to act by powerful statements on the environment from figures such as Sir Richard Attenborough and Greta Thunberg, as well as artists ranging from Billie Eilish to Blackpink. Moreover, there is a general call within the Creative Industries for a green recovery, often led by the youngest voices (Generations Z and Alpha[11]). This new green wave also leans towards the view that established economics are harmful as they promote profit over everything and perpetuate infinite growth-led models.

Major consumer Brands have also stepped up their focus on the UN Sustainable Development Goals during 2020, linking action on SDGs to their brand purpose post-pandemic. Suppliers in the Creative Industry (eg designers, advertising) are following suit.

For fashion in particular, sustainability connected to the notion of being purpose led is coming into stronger focus (eg UAL collaboration between luxury group, Kering, IBM and Vogue Business on fashion values). Establishment of the UK Research & Innovation Textiles Circularity Centre[12] is another major step forward for sustainable

---

[10] Impact investing is an investment strategy that aims to make positive social and environmental returns, as well as profits. In recent years it has moved from the margins, to being accepted by major investors such as Black Rock.

[11] Generation Alpha first appeared in a 2008 report from McCrindle Research.   This generational cohort is the first to be born entirely in the 21st Century. Typically, 2010 is taken as the earliest date for this generation.

[12] https://www.rca.ac.uk/research-innovation/research-centres/materials-science-research-centre/textiles-circularity-centre/

fashion (covering areas such as post-consumer waste, advanced materials and consumer experience). This is one of five new interdisciplinary centres focused on circular economy issues.

The switch to Streaming and online ways of working and consumption has revived old arguments about the footprint of these technologies when so much electricity still comes from non-renewables. For example, music streaming may have a larger carbon footprint than CD and vinyl at their peak of production[13]. However, already in 2021, prominent companies such as Netflix have already declared ambitious net-zero targets.

"Netflix will achieve net zero greenhouse gas emissions by the end of 2022, and every year thereafter. We have a plan called Net Zero + Nature."

Emma Stewart, Ph. D.
Netflix Sustainability Officer

There is an intense focus on Sustainability at intergovernmental levels in 2021. For example, ahead of the Italian Presidency of the G20 in 2021, the Italian Ministry of Foreign Affairs funded research on the role of the Circular Economy in stimulus packages for post-coronavirus economic recovery.[14] Indeed, the G20 Summit in Rome (October 2021) will rest on three pillars; People, Planet, Prosperity. The Planet pillar is concerned with "responses to key issues such as climate change, land degradation, biodiversity loss...these are issues that have been on the G20 agenda for a long time and on which we now need to act quickly, and with new levels of ambition."

The UK will host the G7 in Summer 2021 (The Cornwall Summit), and "tackling climate change and preserving the planet's biodiversity" is one of the four priorities on the agenda.

The 26th Conference of the Parties of the United Nations Framework Convention on Climate Change (COP26) in Glasgow, Scotland in November 2021 will be a focal point for awareness raising and new initiatives related to climate change in the UK and globally. Notably, there will also be a fringe programme "demonstrating, and celebrating, the power of artists, creative professionals, designers and design-thinking to contribute in tackling the climate emergency."

The drive towards a Circular Economy model for parts of the Creative Industries with extended physical supply chains (eg fashion) continues to accelerate as a number of the papers at the Sustainable Innovation 2021, seven day Zoom conference demonstrate[15].

Currently, the EU Green Deal and development of the EU Circular Economy Action Plan 2.0 continue to be influential as long-range blueprints for industry transformation. However, there is no UK equivalent yet for the Creative Industries beyond mentions in the Industrial Strategy first published in 2017. The March 2021 UK government Decarbonisation Strategy does reference the Circular Economy, but the Creative Industries are not mentioned in the strategy explicitly.

---

[13] https://theconversation.com/music-streaming-has-a-far-worse-carbon-footprint-than-the-heyday-of-records-and-cds-new-findings-114944

[14] Watch one of the key webinars here https://www.iai.it/en/eventi/role-g20-support-circular-economy.

[15] https://cfsd.org.uk/events/sustainable-innovation-2021/programme/

Industry 4.0

Industry 4.0 celebrates its 10th anniversary in 2021. All of the individual technologies are maturing, but there remains a shortage of creative professionals and skills with appropriate digital skills. Inevitably digital transformation has been dramatically accelerated by the pandemic. Opinions vary- is it 3 years, or as much as a decade in a year? This speed of change means that there are still many issues with generating a living wage from digital models for all in the Creative Industries.

During the pandemic, the Creative Industries quickly innovated with Industry 4.0 tools. Most of the success stories were interdisciplinary, and combined multiple technologies and novel business models.

Examples include:

- UK VR start-up Emperia (an alumnus of the Digital Catapult's Augmentor Programme) immersive virtual art and fashion shows
- Rambert's creativity in exploiting cameras and a streaming platform to deliver an original live dance-theatre-film commission live from their Southbank Studios. This has been followed-up with a hybrid season for 2021
- DJ Duo Disclosure using Twitch to produce the first online, live single released as a digital collectible using a blockchain (referred to as a NFT[16], or non-fungible token, where authenticity and ownership is protected by blockchain technology)
- Dua Lipa's ground-breaking livestream that crossed theatre, music, dance, cinematography boundaries, with a business model that offered tiered, paid views based on level of experience, and licensing deals in China and elsewhere

Remote, collaborative work rapidly became the norm in the Creative Industries during 2020. Major beneficiaries tend to be non-UK companies such as Zoom, whose user-base doubled within a few weeks of the first lockdowns.

UK Industry 4.0 Initiatives such as Made Smarter are starting to attract interest from manufacturers in the Creative Industries looking for a competitive edge post-pandemic (primarily textiles so far). In addition, the new High Value Manufacturing Catapult-led Made Smarter Smart Factory Innovation Hub pilot could also accelerate Industry 4.0.

However, the preponderance of freelancers and small businesses in the Creative Industries means that many companies remain unable to extract all the value from their intellectual property and did not invest in R&D during 2020 (despite availability of government funding). Prolonged furloughs and lack of access to laboratories and incubators during 2020/21 due to social-distancing requirements further exacerbated the situation.

CreaTech

CreaTech ("the intersection of creativity and technology") has also benefitted during 2020. A recent report[17] commissioned by the Creative Industries Council revealed that the UK is in the top three destinations for Venture Capital (VC) investment in CreaTech, and that the level of investment rose 22% in 2020 compared to 2019.

This equates to £1bn of VC investment, with artificial intelligence and related areas receiving roughly half. Domestic (UK) and US investors provided over 80% of the funds. As a comparison, CreaTech is currently seeing more VC cash injection than Energy start-ups (but still a quarter of that invested in FinTech).

---

[16] NFTs contain identifying information recorded in Smart Contracts on a blockchain (most NFTs are part of the Ethereum blockchain). This special type of token is covered by standard ERC-721, which implements an application programming interface for tokens within Smart Contracts. This standardisation has enabled rapid expansion since 2018.

[17] THE CREATECH REPORT 2021: Mapping the intersection of technology and creativity. Part 1 Investment.

Despite this growth in investment, employment in the sub-Sector fell by 38% in the same period. Whilst some of it is surely due to the pandemic, this may be an early warning sign about how these businesses grow (ie headcount does not follow funding and revenues in a simple relationship), as this has been observed in other Sectors such as Finance.

During the past year some of the strongest innovations in digital have come from collaborations between academia and established players such as the Royal Shakespeare Company (eg dream.online, funded by Innovate UK through the Industrial Strategy Challenge Fund, supported by a team from the University of Portsmouth, and using the EPIC Unreal Engine to create virtual sets), the BBC and Sony, rather than CreaTech per se.

Also, UK Creative Industry start-ups remain notably absent from global top 10 lists of start-ups by revenue and levels of capital injection in 2020 (Improbale.io almost makes list in UK in terms of investment), and investment in R&D remains low in the Creative Industries[18]. Again, the UK appears to lead in terms of ideas and smaller-scale businesses, but less effective at scaling-up.

Education and learning

A positive feature of lockdowns has been the increase in people pursuing free and paid-for online educational opportunities in the Creative Industries' increasing interest in personal development, learning something new and well-being (eg free online filmmaking courses from the BFI). One online provider of adult education, Shaw Academy, saw Photography and Graphic Design become the most popular courses. For some students this is for a distraction or a hobbyist interest, but for some it will certainly signal a change in career path.

During 2020 and 2021, artists and creators have kept engaged with their fans and customers by providing workshops and masterclasses online. This is continuing to happen at a previously unseen scale.

Educational institutions and companies in the Creative Industries, and those who provide learning resources, have also seen a marked uptake from adults on furlough and those made redundant. Fee-paying examples include short courses from the University of the Arts London in subject such as 3D Design and Fashion Styling, and guitar maker Fender offering subscribers three free months of guitar, bass or ukelele lessons over the first lockdown (this resulted in a six-fold increase in adoption).

However, lockdowns and social-distancing have had a significant impact on Higher Education for the Creative Industries. For those studying music and the performing arts it has meant lack of access to equipment, fellow performers and rehearsal rooms. Where collaboration is essential (such as TV and Film) it has meant compromises and struggles with slow network connections. More generally the move to eLearning has put pressure on lecturers and students alike as courses have been rapidly converted to online only and hybrid models.

Inevitably, this has affected students in many different ways, with the less well-off often suffering most in terms of access and well-being. The original promise of an egalitarian internet has been replaced by a digital divide and the reality of UK social structures. UK universities have (for the most part) successfully switched to online learning in the short-term. However, there is some dissatisfaction amongst student over the lack of rebates on fees and the lack of time to complete course work as lockdowns are released.

---

[18] R&D in Creative Industries Survey: 2020 Research report. Prepared for the Department for Digital, Culture, Media and Sport By OMB Research.

Leadership in education are reviewing the lessons of the past year and pondering what comes next as finances have been squeezed and there is some evidence that enrolments may drop as young people favour a start-up over a degree or vocational qualification and a highly competitive job market.

During 2020 UK Universities brought more future-focused courses to the market eg UCA digital fashion course.[19] However, the pace of technology change in the Creative Industries has increased, and curricula and facilities are not keeping up.

EdTech entrants in Exec Education market have also boomed during 2020 eg Eruditus celebrate their 10-year anniversary and obtained Series D funding[20]. In the creative space, they notably offer 'Innovation of Products and Services: MIT's Approach to Design Thinking' short programme online. Increasingly these businesses are offering Small Private Online Courses (SPOCs) that are attractive to smaller businesses and individuals.

The UK leaving the EU also meant the UK lexiting the Erasmus+ scheme (the European Commission's Programme for education, training, youth and sport). March 2021 saw the launch of the UK government's £110m Turing Scheme to replace Erasmus+. This new scheme will fund 35,000 global exchanges from September 2021 (including university study, school exchanges, and industry work placements). Increasing social mobility is a key aim of the new scheme, and another contribution to levelling-up.

---

[19] https://www.uca.ac.uk/study/courses/ma-digital-fashion/

[20] Venture Capital funding is issued as a series of rounds (e.g. seed, A, B, C, D etc). Series D funding means that a start-up has reached the scale where it is saturating its markets and preparing for exit via an Initial Public Offering or similar. Start-ups that reach this stage can end up as Unicorns (billion dollar valuations).

Predicted GVA Growth to 2030
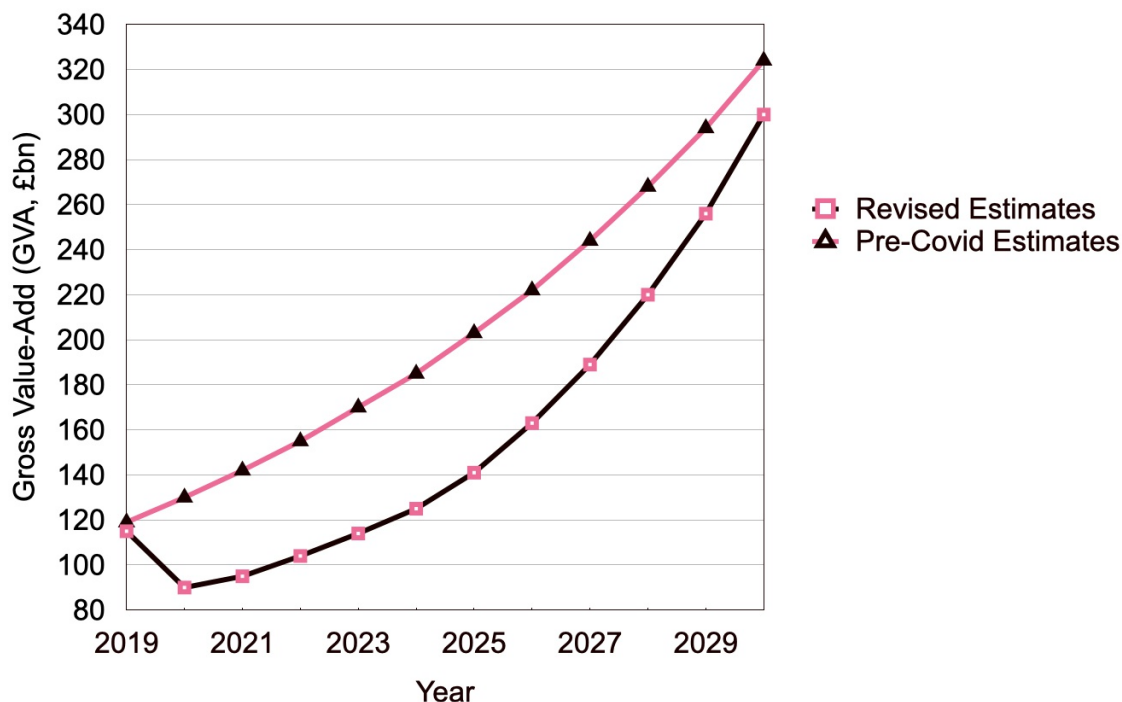
Sources: Calculated by authors.

Revised outlook for the Creative Industries

Recovery and regeneration

Worldwide there is a view that the Creative Industries are at the heart of economic and social regeneration and recovery post-pandemic, and have an important role in addressing some of the wider inequalities in society that have been brought to light by the pandemic.

Despite rising production costs in multiple sub-Sectors due to investment in digital, health and safety measures, post-Brexit export controls et cetera, a bounce-back may be faster than expected especially in sub-Sectors such as TV and film as the final Quarter 2020 has shown.

The model used for the April 2020 Foresight report has been updated based on publicly available sources. The original prediction was for a Creative Industries Sector GVA of circa £300bn by 2030, and the updated model suggests that this figure will be closer to £250bn.
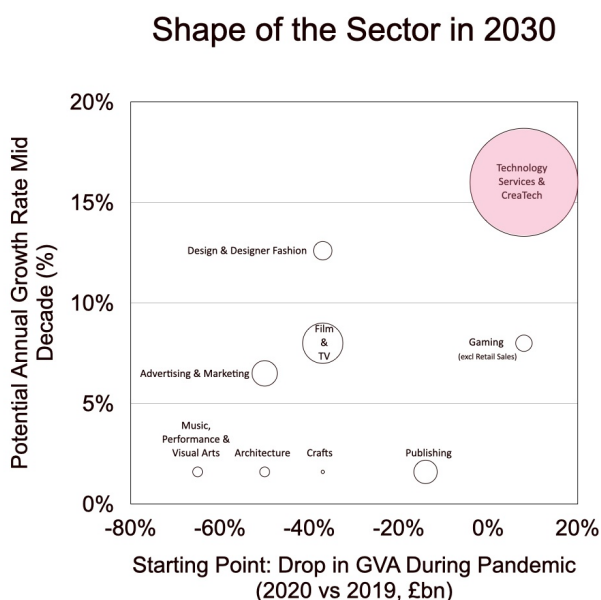
The assumptions driving the recovery are:

- Another year of government and private Sector support to help rebuild the gig economy and preserve smaller venues
- 2021 is the last year of lockdowns and social-distancing measures for music and the performing arts
- Government actions to level-up (address regional inequalities) start to have a more pronounced impact on the economy
- Widespread take-up nationwide of 5G and gigabit broadband between 2025 and 2028 provides a kickstart for Industry 4.0 and CreaTech (eg immersive entertainment start-ups)
- Advertising, Gaming, TV and Film, electronic publishing and streamed entertainment continue to grow at increasingly higher rates compared to the rest of the economy over the decade
- That digital transformation of the Creative Industries accelerates dramatically and

the home-grown Technology Services and CreaTech sub-Sector grows accordingly

- Design (especially Fashion Design) grows faster to meet the demand for sustainable, purpose-led apparel (including secondary markets such as those involved in re-use of clothing)
- The 2021 Integrated Review of Security, Defence, Development and Foreign Policy assertions about attractiveness of the UK for foreign youth hold true

If these assumptions hold, then the Creative Industries may only be around 13% lower turnover by the start of 2030 than the original prediction, with the gap closing quickly post 2030 as CreaTech start-ups scale-up.

Shape of the Sector in 2030

Sources: Calculated by authors.

Diagram Notes:

- Size of bubble shows relative GVA contribution of each sub-Sector at the start of 2030

- These estimates do not use DCMS/ONS data - multiple data sources used, including anecdotal inputs from interviews

- There is higher than usual uncertainty in making estimates of GVA and growth rates. Readers are encouraged to treat this illustrative and not quantitative

No attempt has been made in this update to re-evaluate the position on export of Services. However, the position on exports of Goods from the Creative Industries may remain unchanged (or even benefit) as further trade deals are struck and the Integrated Review of Security, Defence, Development and Foreign Policy is acted upon.

Also, the shape of the Creative Industries in 2030 may be quite different if the bounce-back for each sub-Sector is uneven (eg it will take performance-based sub-Sectors longer to return to growth), and the digital acceleration continues. The figure left, below, shows how Technology Services and CreaTech may dominate the Creative Industries landscape in terms of GVA by 2030 because they have not suffered the dramatic losses of other parts of the Creative Industries during the pandemic, and the underlying growth rate may even have increased. Contrast this with TV and Film where there is a large drop in GVA during 2020 and the predicted growth rate by mid-decade is less than half that CreaTech.

However, this chart comes with a health warning! To reach the scale outlined, Technology Services and CreaTech are dependent on a significant injection of capital (eg from Venture Capitalists), audiences embracing new ways to experience performance, music etc, and the rest of the Creative Industries ecosystem being healthy.

This latter point is particularly important at this moment in time, and brings uncertainty. For example, a CreaTech making immersive technology for theatres can only do so if there are theatres and audiences. A company providing cloud infrastructure for freelancers and small creative businesses needs a sufficient number of customers with the skills to exploit the technology.

Also, if this prediction holds true, then there will be a much greater need to focus on the impact of the Creative Industries in terms of energy consumption and CO_2 emissions (primarily from data centres). The recently published Decarbonisation Strategy, together with the existing net-zero target and commitment to renewables, provides the basis for a 'greening' of the UK industrial base. However, the Creative Industries are not 'Foundation Industries' in this context and, as mentioned earlier, are not included

explicitly in the strategy (part of the problem is that this is an ecosystem, rather than a neatly delineated industry).

Extensive multi-stakeholder engagement across the ecosystem is needed if recovery and regeneration of the Creative Industries is to address the diversity of challenges ahead in a timely and affordable manner. Desirable outcomes go beyond the financial performance of the Creative Industries: digitisation, improving Sustainability, levelling-up and reducing the fragility of the gig economy to name a few. Many of the priority issues cannot be addressed by a single stakeholder group or government department.

Major stakeholders in capability building for the future include:

- Policy makers in central, regional and local government who can provide policy support and access to structural funds, grants, government-backed loans and insurance schemes
- UK and foreign investors who could be incentivised to invest in UK creative businesses and UK entrepreneurs
- Multinational streaming companies that could be encouraged to invest in UK content
- Technology companies that could adjust their business models to pay creators more fairly
- Further and higher education organisations that could be incentivised to partner with industry for research and development
- The hundreds of thousands of businesses and organisations in the UK creative ecosystem
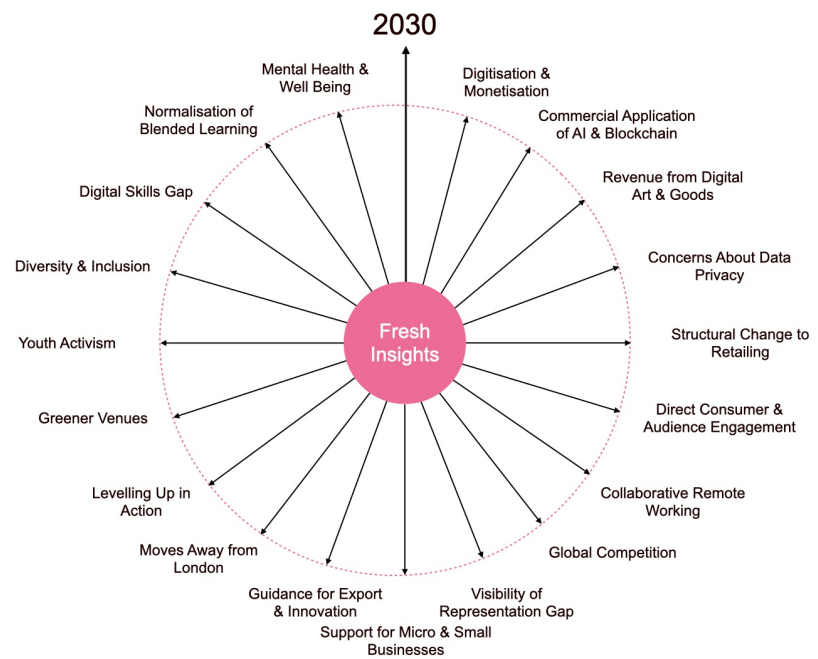
Fresh insights

The insights and trends in the April 2020 report remain valid. For example, the digital skills gap trend identified in the original report has intensified over the last year and is expected to continue to be a significant feature of the Creative Industries in the UK for many years.

While some have come into sharper focus or have accelerated, there are new insights:

- The pace of digitisation has increased significantly. This has been associated with artists and creators exploring new ways to monetise their output and to reach out internationally
- The importance of Intellectual Property Rights cannot be understated (especially for streamed and other digital experiences)
- Creative Industries commercial application of artificial intelligence and blockchain is progressing faster than expected. In late 2020 Microsoft and OpenAI agreed to exclusive GPT-3 licensing, making automation of writing and composition that is almost indistinguishable from human creation accessible to many more organisations. Blockchain has also leapt forward with respected organisations such as Sotheby's acknowledging that NFT marketplaces are here to stay. Two years ago, these marketplaces were viewed as niche, but they have seen huge transaction growth in the last year: for example, between October 2020 and March 2021 transaction volume on the OpenSea NFT marketplace (the largest) has grown over 100 times
- Artists and creators recognising that digital art and goods are a viable revenue stream (eg digital premieres, avatars and digital fashion, unique goods on NFT marketplaces etc)

- The inexorable rise of concern over data privacy and 'Big Tech'
- Long-predicted structural changes to the Retail Sector are happening. This involves widespread closures of Retail stores and High Streets becoming less attractive as destinations for fashion shoppers. Debenhams closure and Arcadia collapse, with online platforms acquiring brands but not the real-estate, as examples. This has been associated with a dramatic rise in ecommerce and new distribution channels, and newer forms of online consumption (eg subscription fashion). However, margins are thin
- The importance of artists and designers directly engaging with consumers and audiences via social media
- Rapid adoption of technology-enabled collaborative, remote ways of working across the creative life-cycle
- Disruption of the UK Creative Industries beyond the pandemic: global competition, automation etc
- The need for representation, and reform for the gig economy labour market
- The Creative Industries Council becoming more vocal regarding the importance of Sector-specific Government support for the micro and small businesses that are the backbone of the Creative Industries (eg access to grants, export advice etc) compared to pre-COVID-19. This need has been acknowledged by the Parliamentary Select Committee for Culture, Media and Sport
- Increased need for central, regional and local government support for the Creative Industries in terms of advice (eg exporting) and finance for risk-taking and innovation (eg R&D grants that are more appropriate to the Creative Industries than Smart Grants)

- Public and private investment in local and regional projects and venues. For example, to address inequalities and secure jobs and cultural capital outside of London (a kind of enforced levelling-up). Also important in terms of urban revival and the rejuvenation of the night-time economies of cities

2030

Mental Health & Well Being · Digitisation & Monetisation · Normalisation of Blended Learning · Commercial Application of AI & Blockchain · Digital Skills Gap · Revenue from Digital Art & Goods · Diversity & Inclusion · Concerns About Data Privacy · Youth Activism · Structural Change to Retailing · Greener Venues · Direct Consumer & Audience Engagement · Levelling Up in Action · Collaborative Remote Working · Moves Away from London · Global Competition · Guidance for Export & Innovation · Visibility of Representation Gap · Support for Micro & Small Businesses · Fresh Insights

- Further levelling-up by major organisations in the Creative Industries relocating outside of London and the South East. The BBC pledging to move 400 jobs from London to new bases in Leeds, Cardiff, Glasgow, and Birmingham (and a cumulative £700m of spending over six years going with the move) as an example
- The need for greener, safer venues and festivals
- Youth activism in respect of the climate emergency alongside a broader, societal reconnection with nature and greenspaces during lockdown. There are signs that this may translate into a better understanding of sustainability (eg in relation to fashion)
- The promotion of diversity and inclusion in the Creative Industries
- The need for training in the tools and technologies of digital transformation and Industry 4.0
- Blended and eLearning, initially as ways out of lockdown but becoming normalised

- The importance of the Creative Industries for mental health and well-being, and the challenges to mental and physical health of working in the Creative Industries (currently a poorly understood area)

Difficulties measuring the Creative Industries in terms of employment numbers, revenues and exports were highlighted in the original report. Trying to analyse the impact of the pandemic, and responses to it, have reinforced the view that this has to be fixed as a priority.

Recommendations

These new insights bring updated implications for policy makers (eg DCMS) and for education and research (eg University leadership teams and Innovate UK).

For policy makers

1. **A unified vision and strategy for the Creative Industries**. Recovery from the events of the last 12 months is a multi-year endeavour (perhaps even a decade). Foremost, this needs a new and unified strategic 'Industrial Strategy' for the Creative Industries that acknowledges its scale, unique opportunities and challenges (for example, the high dependence on individuals and smaller businesses). The CBI has gone further and called for a "national economic vision and strategy."

   Currently, Creative Industries policy makers are working from multiple inputs such as the UK Industrial Strategy and Sector Deal from 2017/18, and the more recent Plan for Growth announced in the March 2021 Budget: it is a siloed

approach. The positioning of the Creative Industries as a cornerstone of UK soft power in the 2021 Integrated Review of Security, Defence, Development and Foreign Policy, and effective post-pandemic recovery, needs to be backed up with an implementation strategy and plan that cuts across DCMS, BEIS, DfE, HMT and other central government departments, and considers the views of the devolved governments and regions.

2. **Engagement with the full scope of the Creative Industries**. In crafting any new strategy, it will also be important to engage with the breadth and depth of the Creative Industries (from multi-nationals to freelancers). This is not currently the case, and how to achieve this is a key challenge. Industry 4.0 tools could be deployed to engage at scale with the millions employed in the Creative Industries and to develop recommendations in months, rather than years.

3. **Improved representation and focused support**. An option for improved representation is to re-shape The Creative Industries Council and issue a new mandate for the entire Creative Industries. This mandate could also include increased focus on urgent topics such as ways to restructure the freelance labour market and increase the number of scale start-ups in the UK (eg incubators and hubs).

4. **A more inclusive approach to the Creative Industries**. There is a need to balance the needs of all parts of the Creative Industries Sector, not just the major institutions or higher growth sub-Sectors (eg CreaTech). For example, policies that encourage industry and academic collaborations, or training and

education on business and technology skills, need to be segmented and tailored to user needs and means.

Developing a broader portfolio of policy interventions may be of particular benefit to the innovative, smaller businesses who are creating new digital or hybrid experiences for future audiences with new patterns of consumption.

5. **Commit more public funds and promote private investment**. There is an immediate need for the UK Creative Industries to get back on track as an employer, and to return to growth. More investment in recovery is needed in the short-term (eg government-backed structural funds): in a recent report by E&Y (for the The European Grouping of Societies of Authors and Composers) it was proposed that the European Parliament should earmark at least 2% of the Recovery and European Resilience Facility for the Creative Industries.

Keeping people in the industry in the medium to long-term requires a review of the social and economic protections offered to freelancers. During 2021 and 2022 it may also require a Sector-specific support programme for those freelancers who currently fall outside of the various support schemes (such support could be a partnership between public and private Sectors). Otherwise, some estimates suggest over 100,000 will permanently leave the Creative Industries.

For the hard-hit events, performance and music parts of the industry, additional interim measures such as government backed insurance guarantees, priority access to Sector-specific structural

funds or loans may be needed for a quick restart and to overcome organiser reluctance to commit finance. Without this, there may be a further exodus of people from the Creative Industries.

6. **Make international working and trade more straightforward.** Investing in appropriate specialist exporting advice to the Creative Industries is also urgently needed in this new era post the EU-UK Trade and Cooperation Agreement.

Developing robust work-arounds for the gaps in the Agreement may help in the short-term, but an equivalent of the visa scheme for highly-skilled workers (announced in the March 2021 Budget), and negotiating additional bilateral agreements for the unique needs of the Creative Industries are required for longer term prosperity.

7. **Create a resilient creative infrastructure for the future**. A co-ordinated approach to public and private investment in infrastructure is needed to create resilience for the long-term. In the Creative Industries, infrastructure includes buildings, performance venues and spaces, specialist incubators, accelerators and workplaces, studios, and the information and communication technologies that are so crucial to day-to-day activities. Any approach has to go beyond simply safeguarding at risk facilities and preventing decline.

With increased focus on Industry 4.0 (including digital creation and distribution), there is a need to push forward on 5G and broadband in the Creative Industries. Project Gigabit will help those within scope, but there is widespread concern over the UK missing the 2025 targets. Satellite

broadband systems such as Starlink (available since January 2021 in the UK, with OneWeb due 2022 onwards), whilst filling some gaps in rural areas, are expensive.

8. **Take further action on Sustainability now**. The Creative Industries may face a 'Bitcoin scale energy consumption problem' unless there is a Creative Industries focus on electrification / decarbonisation post-pandemic. Remote interaction and working will likely continue to accelerate both in terms of consumption and production. For example, widespread adoption of virtual sets for TV/Film and theatre, further expansion of streamed content and gaming, a step-change in high performance computing for design simulations, expansion of NFT usage etc).

   Also, the rapid growth and potential scale of CreaTech and other energy intensive start-ups (eg using 3D printing at scale) needs to be factored into government plans, preferably as part of a comprehensive, Sector-specific approach to Sustainability (i.e. including setting biodiversity net gain targets).

For skills and knowledge

9. **Make digital up-skilling a priority**. There is a digital skills gap in the Creative Industries. If predictions on the growth of digital in the Creative Industries are correct, then the pipeline of undergraduates with the desired skills is insufficient to meet demand. Also, those working in the Creative Industries already have the same need, yet courses are still being offered in formats that do not suit the needs of busy people. There is an opportunity to move to more flexible models of delivery ("bite--sized") and make better use of technology (eg mobile delivery).

The last year has also shown that those working in the Creative Industries (as well as in art and culture institutions) need an upgrade in skills and knowledge for managing financial risks and innovating digital business models. This applies across the Creative Industries, but is particularly important for the performing arts and venue-based organisations, where profitable digital engagement with audiences has been problematic (many have relied on charity, Patreon and PayPal tip-jars to earn a precarious living).

More generally, the Creative Industries clearly need to acquire the mindset and expertise to dematerialize and monetise their businesses (i.e. exploit their intellectual property through NFTs). Too often this is seen as flying in the face of the artistry and craft that underpins everything, but it is both a survival and a growth strategy (eg through streaming and other digital platforms). Again, there is an important role for Higher Education in providing courses not just to undergraduates but to the time-starved artists and entrepreneurs of the Creative Industries (and those who have switched into the industry as a response to job loss or boredom).

10. **Make digital a core organisational competence**. The rapid digitisation of the Creative Industries over the last year needs to be reflected in business plans and research. The role of IT functions in those plans also needs to change to reflect a closer partnership with the rest of the business: more is required of IT departments than just sorting out Zoom licenses.

    Digital transformation of the Creative Industries is quickly driving technology to the heart of creative work, and organisations need to keep pace with the changing nature of creative work.

The pace of change is likely to require a capital injection that can only be met by collective action or with the support of third-parties (such as technology providers or multi-national creative organisations).

As an illustration of the speed of change, here are some recent examples: the arrival of the GPT-3 artificial intelligence model[21] in 2020 has moved automation of creative output forward dramatically, initially for text. Convincing AI voice generation platforms (eg from companies such as sonantic.io) may change game, TV and film production as much as CGI did two decades ago. Deepfake technology is already being used in high-end TV and Film production.

11. **Increase focus on industry collaboration and research**. To build a long-term talent pipeline aligned to the needs of the Creative Industries across the UK and globally, Universities could better engage with the businesses and thought leaders in the Creative Industries to align education and learning goals with industry needs in both academic and vocational spheres.

During this period of accelerated change in the Creative Industries there are also many opportunities for basic and applied research (not just in technology and techniques, but also new ways of working and adjacent areas such as well-being). Of course, academics can pursue research independently of industry partners, but again the speed with which the Creative Industries are changing, and a move to more capital-

intensive, technology-based projects, makes collaboration attractive. The same applies to improving collaboration with government backed Clusters (local, regional) and Knowledge Transfer Networks.

In a Sector with so many small companies (and 2020 alone saw around 800,00 started in the UK), collaboration for R&D is essential. However, in 2020 only around one in 10 firms had collaborated with a third-party research organisation or University on R&D (taken from the OMB Research Report - see footnote 18). Technology Services and CreaTech firms were the most likely, with Design firms the least likely. Access to public support and networking opportunities are cited as constraints.

12. **Match education and learning to the structure of the industry**. The Creative Industries are massively fragmented, and will remain so. The majority work in organisations of 10 people or less, or freelance. There is already a digital skills gap and the high growth of technology use in the Creative Industries over the coming decade will make this wider. There is also a need for basic business skills. For people working in the Creative Industries (and undergraduates) there is demand for education and learning delivered flexibly, remotely and bite-sized. 2020 has shown that blended-learning models will work; the challenges is how to get the blend right for such a diverse Sector, and how to be more creative in the use of technology for delivery a satisfying and effective learning experience.

---

[21] Generative Pre-trained Transformer 3 is an autoregressive language model that uses deep learning to produce human-like text

Conclusions

As vaccinations roll-out there is much talk of a 'new normal' or a second 'Roaring Twenties' (the explosion of creativity and economic prosperity) that followed the Spanish Flu of 1918. Whilst there is disquiet over the EU-UK Trade and Cooperation Agreement in respect of the Creative Industries, it is better than No Deal, and there are other trade negotiations (eg United Kingdom-Japan Comprehensive Economic Partnership Agreement) where the Creative Industries have greater prominence.

However, even with a healthy bounce-back led by advertising, e-publishing, gaming, TV/Film, designer fashion, and technology services to the Creative Industries, modelling for this update suggests that the Creative Industries could be smaller in 2030 than pre-pandemic, pre-EU exit estimations predicted. The potential shortfall is not only in music and the performing arts (partly because of smaller venues closing, touring challenges and an exodus of freelance artists, technicians and crew) but also CreaTech start-up growth being slowed by a lack of appropriate digital skills and an inadequate or delayed infrastructure.

Two potential scenarios leading to 2030 were presented in the original report:

A. **Invest to sustain**: a green path to growth and industry transformation

B. **New ways to grow**: innovations global demand generation and the creative supply chain

2020 certainly looked a lot like the second, particularly for those sub-Sectors whose output lends itself to becoming digital content. For example, the National Theatre at Home streams have reached international audiences at an impressive scale. Respected, but less known, musicians with dedicated UK followings such as Leddra Chapman and Hattie Briggs now have a paying international fanbase through their livestreams.

But the 'mood music' in society going forward feels more like the first. There is a new green wave growing out of youthful activism. After Millennials and Generation Z, there is Generation Alpha for whom the environment is universally important topic. One study shows 95% of Alpha consider taking care of the environment as essential compared to 57% of Millennials. There are also significant shifts in business towards sustainable forms of production and a re-think on consumer-relationships that may finally address wasteful consumption. Indeed, major consumer brands are getting behind initiatives that are better aligned with the SDGs such as Doughnut Economics or the Economic of Mutuality[22].

Consumer confidence in the UK is improving, and there is a roadmap out of lockdown for 2021. Having time to re-think what society values most has brought the importance of the Creative Industries to the fore, alongside sustainability and the positive side of technology in the arts and culture. Long may that last.

---

[22] Doughnut Economics originates from a 2012 Oxfam paper A Safe and Just Space for Humanity by Kate Raworth of Oxford University, and seeks to re-frame economics such that planetary boundaries are not overshot. The Economics of Mutuality started within Mars and Oxford University and is aimed at "transforming the Economic System by Creating a Mutuality of Benefits Among All Stakeholders."

APPENDIX

Summary of Findings and Recommendations from the April 2020 Report

Prior to the pandemic, the Creative Industries were set to grow much faster than the rest of the UK economy (possibly up to three times faster), reaching a Gross Value Add (GVA) of around £300bn by 2030. This would amount to between 9 and 11% of UK GDP. Exports could be expected to exceed £100bn (from approximately £46bn in 2019).

The Creative Industries are highly fragmented today, and the study estimated that by 2030 there will be over 350,000 micro businesses and SMEs in the Creative Industries, employing over 3 million people, with more than 95% employing fewer than 10 people.

Key findings

Eight trends were identified in the original study. A number of these trends are inter-twined.

Four trends are identified that could reshape Sustainability and the Creative Industries in the UK over the next decade:

1. Automation to support creatives, and improve productivity as well as drive energy and resource efficiency (note: Creative Industries are viewed as resilient against job losses due to automation)
2. Growing awareness of the urgency to address climate change, and appreciation of the need for more action by the Creative Industries
3. Growing social engagement in the Creative Industries through the network of Creative Hubs across the UK (local, regional and national)
4. Innovative design (specially to address the needs of products, services and experiences in a de-carbonised and more Circular Economy)

The Creative Industries are already acting on Sustainability, but approaches are highly fragmented and there is little cross-fertilisation across sub-Sectors.

Millennial and Generation Z voices (younger people in general, not just students and professionals) are now clearly present on the global stage at the forefront of a new 'green' wave of environmental activism, and will demand the Creative Industries act on their concerns.

The UK government has signed a target of net zero carbon emissions by 2050 into law, becoming the first of the G7 to do so. As information and communication technologies will enable the UK Creative Industries to grow much faster than the rest of the economy, it is essential this growth should be de-carbonised.

Four trends are identified that could reshape Industry 4.0 and the Creative Industries in the UK over the next decade:

1. UK Creative Industries export growth (economic and cultural value)
2. Greater competition for audience and consumer attention, making for a more competitive environment (referred to as the 'attention economy')
3. Digital creation (eg of content, product designs etc)
4. Sustainable design of products, services and experiences in a low-carbon, more Circular Economy.

In recent years, Industry 4.0 technologies have led to the emergence of a new rapidly-growing Creative Industries sub-Sector at the intersection of creativity and technology: CreaTech. However, there are questions about the scope and potential overlap with other Sectors.

Due to fragmentation, many stakeholders in the Creative Industries are not involved in policymaking or knowledge exchange. The current policymaking process and governance relies too heavily on central government and the larger creative businesses that can afford dedicated roles. In many other UK industrial Sectors there is a single trade body that can act as a voice in policy making. In the UK Creative Industries there are multiple trade federations and related bodies.

Adoption of innovative and sustainable design practices in the Creative Industries will require artists, designers and entrepreneurs in the Creative Industries to think and work differently and adoption of Industry 4.0 tools for digital creation

The mass of the Creative Industries (and the broader ecosystem that supports it) is based on independent talent, freelancers, micro and medium-sized businesses, and a gig economy. Many Higher Education and Executive Education offerings are not well-suited to those already in employment. They need greater flexibility, remote learning and more modular delivery.

Recommendations

1. The experts involved in this study would like the government to embrace the long-term view of the economic development of the Creative Industries Sector (i.e. beyond that documented in the UK Industrial Plan and Sector Deal from 2018).
2. Government support to establish a new 'federation' focused on Creative Industries entrepreneurs in micro, small and medium-sized businesses. The existing Creative Industries Federation and Creative England would retain the Sector advocacy role, while this new body would focus on building capacity and capability in the Creative Industries amongst micro, small and medium-sized businesses.
3. Greater emphasis on Regional and Local investment for start-ups in the Creative Industries to encourage levelling-up. opportunity to establish tax-free Creative Industries Zones in UK regions (these could be modelled on the current Enterprise Zones in the UK (including financial incentives such as 100% first-year allowances for capital expenditure).
4. Enhance the existing Innovate UK business engagement programmes for micro, small and medium-sized businesses, but shaped around the characteristics and needs of the Creative Industries.

5. Creation of a specialist visa scheme along the lines of the Global Talent Visa launched recently for research and innovation.
6. Creation of incentives such as tax reductions and grants for smaller creative businesses that put in place sustainable practices and / or adopt Industry 4.0.
7. Promotion of partnerships with environmental technology companies to accelerate adoption of new materials and processes.
8. Incentives for virtual production and consumption to minimise transport and travel (eg of music performance).
9. Duty of environmental responsibility on every company in the Creative Industries (building on concept of Extended Producer Responsibility as discussed in the European Commission's Circular Economy Action Plan 2.0).
10. Technology companies may be sources of investment and education delivery. Industry 4.0 is capital intensive and changes rapidly so there is a need to find new ways to fund initial outlay and on-going refreshment, so students are always trained on the latest technology
11. Digital upskill for executives in Creative Industries.
12. To meet the net-zero goal set by the UK government, an immediate-action focus is required for Sustainability education and skills development i.e. gives people in the Creative Industries tools that allow them to make a difference quickly. This could mean education and training designed to be granular, bite-sized, or micro-modular and immediate, more like 'Life hacks'. This might be based on a blended learning model eg a mix of online and face-to-face content.
13. More generally, make a broad spectrum of awareness, education and training interventions for both Sustainability and industry 4.0. The expert participants suggested that the approach for the two million people working in the industry had to be structured appropriately as 'bite sized chunks', exploiting virtual classrooms as much as possible.
14. Sustainability education mandated and integrated into the curriculum for undergraduates.
15. There is a need for an agreed UK or international baseline for Sustainability and Industry 4.0 in the Creative Industries.
16. Executive Education for the Financial Sector change the perception amongst the investment community that UK Creative Industries are just a 'cottage industry' with no potential scale, or that they are 'hit based' (meaning that commercial success is somehow unknowable) and extraordinarily risky.
17. For the Creative Industries to deliver their full potential for inclusive, equitable and resilient growth, it is important to have a policy approach that is focused on creating an environment in which creativity flourishes.
18. Challenge the government to fully recognise the connection between creative subjects and STEM, the Creative Industries' growth potential and the future value of the Creative Industries more generally, to the UK economy nationally, regionally and as an export engine.

Professor Martin Charter
Director
The Centre for Sustainable Design®
Business School for the Creative Industries
University for the Creative Arts
email: mcharter@uca.ac.uk

Dr. Trevor Davis FRSA
Managing Director
Trevor Davis & Associates Ltd

email: trevor@curiousdemon.com