

# Harnessing Research and Development in the UK Creative Industries



10 Victoria Street London SW1H 0NB

Prime Minister 10 Downing Street London SW1A 2AA 'Sent by email only'

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Dear Prime Minister,

## Harnessing Research and Development in the UK Creative Industries

Creativity, design, and innovation are woven in our national DNA. From film to architecture, computer games, design, advertising and more, the UK's creative industries are an economic and cultural success story. We were therefore delighted to hear your commitment to grow the UK creative industries sector and welcome the publication of the Creative Industries Sector Vision. This provides an important policy framework to signal the government's ambitions and to catalyse further R&D and investment.

In recent years the creative industries have delivered more economic value than the life sciences, aerospace, and automotive sectors combined<sup>1</sup>. In 2020, creative businesses spent £3.3 billion on R&D, equivalent to 3.2% of the total gross value added (GVA) of the creative industries and a greater proportion than the UK economy average of 2.3%<sup>2,3</sup>. This R&D has produced spillover benefits across the wider economy in diverse areas such as defence, agriculture, healthcare, and education.

The creative industries are also important generators of new ideas and knowledge, with significant growth potential in sub-sectors that combine science and technology with the arts and humanities. Our accompanying annex includes case studies from across the sector.

#### Scope of our advice

Investment in R&D is crucial to the future success of the UK's creative businesses and to our wider creative economy. However, we have consistently heard that the creative industries continue to be seen as a lower priority for investment than traditional STEM sectors, despite their economic value.

<sup>1</sup> Creative Industries Policy and Evidence Centre, How lessons from UKRI's Creative Industries Challenge Programmes should transform the way we invest in R&D (2022), available at: https://pec.ac.uk/blog/transforming-investment-in-r-d

<sup>2</sup> ONS, Expenditure on R&D performed in UK businesses in the creative industries sector (2022), available at: https://www.ons.gov.uk/economy/governmentpublicsectorandtaxes/researchanddevelopmentexpenditure/ adhocs/14890expenditureonresearchanddevelopmentperformedinukbusinesses/inthecreative/industriessector/2020

<sup>3</sup> ONS, Business enterprise research and development, UK, (designated as national statistics) (2022), available at: https://www.ons.gov.uk/economy/governmentpublicsectorandtaxes/researchanddevelopmentexpenditure/datasets/ukbusinessenterpriseresearchanddevelopment

Following our engagement with government during the development of the Creative Industries Sector Vision, we committed to offer advice on further actions to support R&D, innovation, and technology in the creative industries. In developing our advice, we did not seek to cover all sub-sectors of the creative industries. We focused on four sub-sectors with varying approaches to conducting R&D: gaming; film and TV; design-led engineering; and conservation and heritage science.

Areas such as gaming, film, and live performance are characterised by rapid advances in technology, including Artificial Intelligence (AI). These sub-sectors are generating technological advances, as designers, and those in the creative and performing arts, work together to create highly innovative new products, experiences, and services. In areas such as design-led engineering and conservation and heritage science, R&D is focused on engineering, physics, and chemistry, but crucially is combined with specialist knowledge in areas of the arts and humanities, such as design and history.

Further, while the private sector dominates most of the creative industries, and government's role is largely to create the conditions for the industry to thrive, government has a more direct responsibility in the cultural and heritage sector. Here, different policy interventions are required to maintain our national cultural and heritage assets and maximise the opportunities they can provide.

#### The opportunity

Public investment in R&D in the creative industries should reflect the size, economic contribution, and future growth potential of the sector. Research commissioned by Creative UK shows that with the right investment, the sector could contribute £132 billion in GVA by 2025, which is over £28 billion more than in 2020, creating 300,000 new jobs<sup>4</sup>.

To deliver on your commitment to grow the UK's creative industries, we believe government should raise its ambitions further. The revitalisation of the FTSE 100 should come from UK creative businesses. Government should look to grow our creative industries companies on a similar scale to how France has grown its luxury goods market. This would help ensure creative businesses capitalise on the tech opportunities of the fourth industrial revolution and scale-up to become global leaders.

To help achieve this we propose six actions for government to further incentivise R&D, innovation, and technology in the creative industries:

 Recommendation 1: The Culture Secretary and Science and Technology Secretary should use the National Science and Technology Council to ensure public investment in R&D in the creative industries reflects the size, economic contribution, and future growth potential of the sector.

- **Recommendation 2:** The Chancellor and Culture Secretary should commission research from the Creative Industries Policy and Evidence Centre into the requirements and availability of scale-up finance for creative businesses.
- **Recommendation 3:** HM Treasury should work with the Office for National Statistics to prioritise improvements to data collection on creative industries R&D. This should support a future broadening of the definition of R&D eligible for tax relief to include arts, humanities, and social sciences research.
- **Recommendation 4:** The Department for Culture, Media and Sport should continue to undertake research to conserve the UK's cultural assets in museums, collections, and galleries, and work with the Department for Science, Innovation and Technology to capitalise on opportunities to value and digitise UK national collections.
- **Recommendation 5:** The Intellectual Property Office should, as a matter of urgency, clearly set out guidance on what standards or regulations AI companies need to adhere to with respect to copyright of creative content.
- **Recommendation 6:** The Department for Culture, Media and Sport and the Department for Education should work with Research England and the Office for Students to review the performance, geographical distribution, and financial support for small specialist creative institutions.

We would be delighted to discuss this topic in more detail with you and your Ministerial colleagues.

We are grateful to Professor Julia Black (President of the British Academy) for leading the development of this advice, with support from Paul Stein (Chairman, Rolls-Royce SMR Limited), Professor Brooke Rogers (Professor and Vice-Dean People and Planning (SSPP), King's College London), Saul Klein (Co-founder and Managing Partner, Phoenix Court), and Suranga Chandratillake (General Partner, Balderton Capital). We also thank policy teams across government and stakeholders across industry and academia who helped to inform our work.

This letter is copied to the Chancellor of the Exchequer; the Secretary of State for Culture, Media, and Sport; the Secretary of State for Science, Innovation, and Technology; the Secretary of State for Business and Trade; the Secretary of State for Education; the Foreign Secretary; the Minister of State for Tourism, Media, and the Creative Industries; the Minister of State for Science, Research and Innovation; the Minister for AI and Intellectual Property; the Cabinet Secretary and the Permanent Secretaries of HM Treasury, the Department for Culture, Media and Sport, the Department for Science, Innovation and Technology, the Department for Business

and Trade, the Department for Education, and the Foreign, Commonwealth, and Development Office.

Yours sincerely,

Dame Angela McLean

Co-chair

Lord Browne of Madingley

Co-chair

## Harnessing Research and Development in the UK Creative Industries

#### **Delivering the Creative Industries Sector Vision**

- 1. The creation and deployment of digital technology is integral to many sectors of the creative industries. While the formation of the Department for Science, Innovation and Technology (DSIT) has been welcomed by the sector, stakeholders have reported that this change has created uncertainty about where responsibility now lies in government for R&D in the creative industries, and concerns about coordination between DSIT, the Department for Culture, Media and Sport (DCMS) and the Department for Business and Trade (DBT).
- 2. The Creative Industries Council (CIC) will be critical in championing and supporting delivery of the Creative Industries Sector Vision. However, given the cross-cutting nature of R&D commitments, further ministerial oversight and co-ordination is needed to resolve challenges to implementation and ensure delivery. This includes taking a strategic approach to future spending review bids.

RECOMMENDATION



The Culture Secretary and Science and Technology Secretary should use the National Science and Technology Council to ensure public investment in R&D in the creative industries reflects the size, economic contribution, and future growth potential of the sector.

- 3. There is significant potential to achieve strategic advantage through science and technology in our creative industries. Therefore, support for R&D in the creative economy must be considered in the context of the Science and Technology Framework. The Culture Secretary and Science and Technology Secretary should use the National Science and Technology Council to co-ordinate delivery of R&D commitments in the Creative Industries Sector Vision and the Science and Technology Framework. Government action on priority technologies, such as AI, should align with the needs of the creative sector.
- 4. To leverage the wider spillover benefits of the creative industries on innovation in other sectors, government should work closely with the CIC to set out ground-breaking missions and ensure their delivery. Missions could be used to galvanise action across creative businesses, research institutions, and the public to provide important solutions to the UK's national goals, including net zero and improving public health<sup>5</sup>. These missions should showcase the UK as a global leader in the creative industries.

<sup>5</sup> Council for Science and Technology, Principles for science and technology moon-shots (2020), available at: https://www.gov.uk/government/publications/principles-for-science-and-technology-moon-shots

#### Scaling up the UK's creative businesses

- 5. UK creative businesses stand out from the rest of the economy due to their rapid growth and, considering their small average size, high levels of productivity<sup>6</sup>. Despite this, the creative industries remain undercapitalised by domestic institutional investors when compared to other industries and continue to face unique challenges in accessing scale-up finance<sup>7</sup>.
- 6. Creative businesses report that public and private funding is highly fragmented, difficult to navigate, and that investment in innovation undertaken by the sector can fall between the gaps of different funding schemes. This is particularly true of products and services that are either content-led (for example film and TV), iterative (for example games), or that require investment in "bespoke" items (for example fashion and high-end design). Investors may struggle to value the intangible assets that drive success in these sectors.
- 7. The Creative Industries Sector Vision states the government's intention to collaborate with industry and the British Business Bank (BBB) to ensure that creative businesses are supported at all growth stages. However, analysis from Creative UK shows that the BBB's investment criteria do not fit the business needs or models of creative companies<sup>8</sup> and should be changed in order to be fit for purpose for the creative industries. Financing via loans is not best suited to emerging intellectual property (IP) and content-driven businesses, which often require substantial R&D investment that can be too risky and speculative for debt funding, especially at an early stage. Greater equity finance, including venture capital (VC) investment, is needed to ensure the right companies get the right type of money at the right time.
- 8. We note that there is a general lack of data on the finance ecosystem for the cultural and creative sector. There is also a lack of research on the scale and impact of foreign direct investment (FDI) in the UK's creative industries. Available data from 2013-2020 shows mergers and acquisitions already account for 53% of all FDI in the creative industries compared to 31% in other service sectors9. This poses a risk to the UK's competitive advantage<sup>10</sup>.

RECOMMENDATION



The Chancellor and Culture Secretary should commission research from the Creative Industries Policy and Evidence Centre into the requirements and availability of scale-up finance for creative businesses.

Nesta, Creative Nation (2018), available at: https://www.nesta.org.uk/report/creative-nation/

Creative Industries Council, Access to finance (2018), available at: https://cic-media.s3.eu-west-2.amazonaws.com/media/471225/cic-access-to-finance-researchreport-june-2018.pdf

Creative UK, Creative Industries Investment Ecosystem (unpublished)
Creative Industries Policy and Evidence Centre, The nature of foreign direct investment in the creative industries (2022), available at: https://pec.ac.uk/ discussion-papers/the-nature-of-foreign-direct-investment-in-the-creative-industries

<sup>10</sup> Council for Science and Technology, Advice on encouraging scale up investment in innovative science and technology companies (2021), available at: https://www.gov.uk/government/publications/letter-to-the-prime-minister-on-investment-in-innovative-science-and-technology-companies

9. We recommend the Creative Industries Policy and Evidence Centre (PEC) provides further analysis on the nature and impact of FDI in the UK creative industries, and undertakes a wider mapping exercise of domestic investment in the sector, including via angels, venture capitalists, and institutional investors. This analysis should also be used to support DBT and the BBB to review eligibility criteria for current and future programmes and ensure available funding fits sector needs.

#### R&D tax relief for the creative industries

- 10. Tax relief is important to support innovation, growth, and international competitiveness across the creative economy. However, we have consistently heard that government should go further to better account for all forms of R&D in the creative industries. A 2020 DCMS survey found that 55% of responding UK creative businesses had undertaken some form of R&D in the previous three years according to the OECD definition<sup>11</sup>, but only 14% would be eligible for UK R&D tax relief<sup>12</sup>.
- 11. The model by which government supports R&D through tax relief is structured towards STEM-based research activities and does not map effectively on to knowledge creation in the arts, humanities, and social sciences (AHSS). This is despite businesses emphasising the interdisciplinarity of their R&D activities and challenging the view that AHSS and scientific R&D are always distinct activities13.
- 12. The current HMRC definition of R&D eligible for tax relief excludes AHSS R&D activities<sup>14</sup>. Whereas at least 23 other countries, including Germany, France, and South Korea<sup>15</sup>, recognise AHSS R&D in the scope of tax relief. The Creative Industries PEC suggests that approximately £321 million was spent by creative firms on AHSS R&D in 202016, which indicates that considerable amounts of R&D are being missed by the current definition of R&D eligible for tax relief. By failing to incentivise AHSS R&D, the government risks failing to support and ignoring the full value of R&D in the UK economy.

RECOMMENDATION



**HM Treasury should work with the Office for National** Statistics to prioritise improvements to data collection on creative industries R&D. This should support a future broadening of the definition of R&D eligible for tax relief to include arts, humanities, and social sciences research.

<sup>11</sup> OECD, Frascati Manual 2015: Guidelines for Collecting and Reporting Data on Research and Experimental Development (2015), available at: https://www.oecd. org/innovation/frascati-manual-2015-9789264239012-en.htm

<sup>12</sup> OMB Research, commissioned by DCMS, R&D in the Creative Industries Survey (2020), available at: https://www.gov.uk/government/publications/rd-in-the-

creative-industries-survey

13 Creative Industries Policy and Evidence Centre, Business R&D in the arts, humanities and social sciences (2023), available at: https://pec.ac.uk/policybriefings/business-r-d-in-the-arts-humanities-and-social-science

<sup>14</sup> HM Revenue & Customs, Claiming Research and Development (R&D) tax reliefs (2023), available at: https://www.gov.uk/guidance/corporation-tax-researchand-development-rd-relief

Creative Industries Policy and Evidence Centre, Key facts about R&D in the creative industries (2022), available at: https://pec.ac.uk/blog/key-facts-about-r-

<sup>16</sup> Creative Industries Policy and Evidence Centre, Estimating the contribution of arts, humanities and social sciences R&D to Creative Industries R&D (2023),  $available\ at:\ https://pec.ac.uk/blog/estimating-the-contribution-of-arts-humanities-and-social-sciences-ahss-r-d-to-creative-industries-r-d-to-creative-$ 

- 13. We endorse recommendations made by stakeholders across the creative industries sector, including the Creative Industries PEC<sup>17</sup>, Creative UK<sup>18</sup>, and the House of Lords Communications and Digital Committee<sup>19</sup>, to include AHSS R&D within scope of R&D tax relief. This would help place the UK level with globally leading competitive creative economies. The definition of R&D should not disadvantage the UK's creative industries, and creative companies should be supported to the same extent as other technology and software intensive companies.
- 14. To address concerns regarding potential fraud or error for R&D tax relief, and to better capture evidence on AHSS in R&D, HMT should work with ONS to prioritise improvements to data collection on AHSS R&D and creative industries R&D more generally. This should include more comprehensive coverage and larger creative industries sample sizes in the Business Enterprise Research and Development Survey as part of ONS' ongoing programme of improvements to this survey, and in the UK Innovation Survey. In broadening the definition of R&D eligible for tax relief to include AHSS, DSIT and HMRC should develop effective guidance and case studies for creative firms on eligibility to help maximise eligible uptake of the relief and minimise error.
- 15. The current levels of R&D tax relief claimed by the creative industries are not publicly available because data is only published at the two-digit SIC code level. HMRC should make data available at the four-digit SIC code level, to allow greater insight into the creative industries' use of R&D tax relief<sup>20</sup>.
- 16. HMT should work with DCMS to ensure that granular ONS data on supply chain linkages and job mobility between the creative industries and other sectors are made available. This will enable evidence to be gathered on the spillover benefits from R&D in the creative industries to other sectors. There is potential for wider impact from R&D in the creative industries if government actively drives these spillover benefits through policy interventions.

#### Identifying, maintaining, and capturing value from our world-leading cultural assets

17. The UK holds significant knowledge and cultural assets under management in museums, collections, and galleries. However, the value of these assets is unknown, and without understanding their full worth, we risk significantly underspending on the R&D required for their conservation. We welcome DCMS's Cultural and Heritage Capital Framework<sup>21</sup> which sets out government's ambition to value these assets.

<sup>17</sup> Creative Industries Policy and Evidence Centre, The Art of R&D (2022), available at: https://www.pec.ac.uk/research-reports/the-art-of-r-and-d

<sup>18</sup> Creative UK, Spring Budget Priorities (2023), available at: https://www.wearecreative.uk/wp-content/uploads/2023/02/Creative-UK-Spring-Budget-submission-2023-Summary.pdf

<sup>2023-5</sup>ummary.put

House of Lords Communications and Digital Committee, At risk: our creative future (2023), available at: https://publications.parliament.uk/pa/ld5803/ldselect/

<sup>20</sup> Creative Industries Policy and Evidence Centre, The State of Creativity (2023), available at: https://pec.ac.uk/research-reports/the-state-of-creativity

<sup>21</sup> Valuing culture and heritage capital: a framework towards informing decision making (2021), available at: https://www.gov.uk/government/publications/valuing-culture-and-heritage-capital-a-framework-towards-decision-making

- 18. Existing funding for conservation of cultural assets is sparse and was practically non-existent until the Research Infrastructure for Conservation and Heritage Science (RICHeS) programme<sup>22</sup> was introduced. Despite RICHeS, insufficient resources for conservation mean museums and galleries can only support small in-house specialist conservation teams, which risks research sustainability, the maintenance of UK collections, and the ability to enable and capture spillover benefits at scale.
- 19. Separately, there is an increasing move to digitise assets held in the UK's museums and galleries. The value of cultural assets may be exponentially increased through digitisation, allowing data to be better used and shared, thereby facilitating the creation of new knowledge, insights, innovation, and visitor experiences. While the scale of digitisation is expanding, it is unevenly distributed. 146 million item-level digital collection records exist, but 51% of these are held by just four institutions<sup>23</sup>.

**RECOMMENDATION** 



The Department for Culture, Media and Sport should continue to undertake research to conserve the UK's cultural assets in museums, collections, and galleries, and work with the Department for Science, Innovation and Technology to capitalise on opportunities to value and digitise UK national collections.

- 20.DCMS and DSIT should commission research into the percentage of publicly funded R&D spent on conserving UK national collections and cultural assets, and into how that compares to their total value. This analysis should complement current work aiming to identify the total value of the UK's physical cultural and heritage assets under management as part of DCMS's Cultural and Heritage Capital Framework.
- 21. With respect to the creation of digitised assets, we welcome the UKRI funded Towards a National Collection programme<sup>24</sup>, which is undertaking the R&D required to establish a future UK digital collections infrastructure to convene, maintain, and standardise digitised assets. AI could drive both the digitisation of collections and improve analysis of data through linking data sets. This would establish a new area of R&D in the creative industries, which could also have important spillover benefits. Investment for digitisation should be periodically reviewed by government to ensure that the level of spend matches the opportunity presented.

<sup>22</sup> Heritage Science Forum, RICHeS - Research Infrastructure for Conservation and Heritage Science, available at: https://www.heritagescienceforum.org.uk/what-we-do/riches

Collections Trust, Digital Collections Audit (2022), available at: https://zenodo.org/record/6379581
 Towards a National Collection, available at: https://www.nationalcollection.org.uk/

22. Government should also consider the value of the digital assets under management in the context of training data for large language models or generative AI. The development of a centralised digital cultural assets repository could be positioned to engage commercially with model owners. The Council has provided separate advice on the valuation of sovereign data assets in the context of large language models.

### AI and Intellectual Property (IP) rights of creators

- 23. New technologies and the rise of digitised culture are changing the way creative content is developed, distributed, and monetised<sup>25</sup>. Despite the government's response to the Pro-Innovation Regulation Reviews for digital technologies and the creative industries, we consistently heard the need for clarification on what standards need to be complied with when new digital products are developed.
- 24. While it may represent a growth area, the increasing use of AI to create or modify digital likenesses of images or voices raises ethical questions around how the technology can be used responsibly while respecting copyright ownership for creators<sup>26</sup>. Delays to the AI code of practice from the Intellectual Property Office (IPO) on copyright exemptions and AI is prolonging uncertainty.

**RECOMMENDATION** 



The Intellectual Property Office should, as a matter of urgency, clearly set out guidance on what standards or regulations AI companies need to adhere to with respect to copyright of creative content.

- 25. Representatives from across the creative industries must be included in advisory groups in the development of standards and regulations on AI to ensure that they consider the different needs of all of those within the sector (including performing artists and other content creators). Previously proposed copyright exemptions for the AI industry have shown a lack of understanding of the heterogeneous nature of the UK's creative industries.
- 26. The government should require and support the use of sector-wide verification mechanisms for safe, fair, and responsible AI content production and distribution, including digital signatures to trace where content originated.

<sup>25</sup> House of Lords Communications and Digital Committee, At risk: our creative future, Chapter 2 (2023), available at: https://publications.parliament.uk/pa/ld5803/

<sup>8</sup> House of Commons Culture Media and Sport Committee, Connected tech: Al and creative technology (2023), available at: https://publications.parliament.uk/pa/cm5803/cmselect/cmcumeds/1643/report.html

#### Supporting specialist creative institutions to address key skills shortages

- 27. We welcome the objectives in the Creative Industries Sector Vision to improve education, skills, and job quality in the creative industries. Through our engagement we heard the importance of improving creative apprenticeships to meet industry needs; ensuring the successful rollout of T-levels and Level 3 qualifications; and opportunities to build upon the model for Academy free schools (for example the London Screen Academy, East London Arts and Music, and BRIT School North).
- 28.Stakeholders also noted the important role of specialist institutions in the UK who provide high-level technical skills, primarily in the entertainment and media industries, but increasingly in broader sectors such as architecture, health, and transport. Small specialist creative institutions, such as Rose Bruford College and the Royal Central School of Speech and Drama, are reported to receive a lack of policy attention and face unique challenges due to their size, capacity, and need for often expensive specialist equipment and facilities<sup>27</sup>.
- 29. We note particular challenges facing small specialist institutions, including but not limited to:
  - a. The geographic distribution of high-quality small specialist institutions is London-centric.
  - b. There is an uneven distribution of support from government for high-cost subjects, and small specialist institutions that do not reach the Higher Education Innovation Funding (HEIF) income threshold are not supported to strategically develop knowledge exchange. This deprives them of funds which could be used to collaborate with industry.
  - c. The coding used to classify courses as eligible for additional teaching support funding is failing to recognise convergence in the teaching of creative and digital skills.
  - d. Small specialist institutions lack funding and resources to connect with local infrastructure and creative industries clusters.

RECOMMENDATION



The Department for Culture, Media and Sport and the Department for Education should work with Research England and the Office for Students to review the performance, geographical distribution, and financial support for small specialist creative institutions.

30. The review should support the development of a strategic approach to improve access to, and support for, small specialist institutions to maximise their potential to address national technical skills shortages. The government could also identify gaps in provision, for example in the gaming and film and TV sectors, where establishing specialist schools akin to specialist maths schools<sup>28</sup> could help address growing skills gaps.

<sup>27</sup> Higher Education Policy Institute, Small specialist and practice based universities are vital to competition and innovation in higher education (2023), available at: https://www.hepi.ac.uk/2023/04/27/small-specialist-and-practice-based-universities-are-vital-to-competition-and-innovation-in-higher-education/
28 The Russell Group, Specialist maths schools, available at: https://russellgroup.ac.uk/policy/case-studies/specialist-maths-schools/

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