
Creative Industries in China and the UK Scoping and Workshop Report



1 Introduction

China has the largest video games industry and the second largest film industry in the world. It is home to more cinemas than any other country and is the world's biggest investor in VR and AI. The UK is an international creative industries powerhouse exporting its creative goods and services across the globe. British content - film and TV, performing arts, design, video games and music - are all recognised as world leading. There are enormous opportunities for China and the UK to successfully collaborate and to mutually benefit from that collaboration. Successful collaborations will stem from a new level of understanding between the two countries and a commitment by government, academia and industry on both sides.

The Arts and Humanities Research Council (AHRC) of the UK – a constituent body of UKRI (UK Research and Innovation) - has been successful in securing £5M, plus co-funding from Chinese partners, for a major new international programme seeking to develop research-industry partnerships between the UK and China in the creative industries.

The programme will be delivered over four years in partnership with the Engineering and Physical Sciences Research Council (EPSRC); Innovate UK (IUK); the Shanghai Theatre Academy (STA); and the Shanghai Economy and Information Technology Commission (SEITC). The overarching aim of the programme is to enable a rapid scaling-up of engagements between the UK and China, with a specific focus on Shanghai, in order to facilitate new collaborations in the creative industries that deliver sustained economic, cultural and intellectual benefits in both countries. AHRC commissioned BOP Consulting to undertake this scoping study to inform the wider programme.

This report highlights areas of possible collaboration between the UK, China and Shanghai creative industries. The report provides a set of recommendations to the AHRC, other funding partners and stakeholders where there are opportunities for collaboration that a programme of funding could successfully support. The report will also inform potential applicants to the funding programme so they can better understand the opportunities and the context for any potential collaborations as well as the potential barriers to collaboration. The recommendations are not meant to be exclusive or exhaustive, but are a guide to both funders and potential collaborators in shaping future calls and applications.

For this report, in addition to drawing on our seven years on-the-ground experience working in China, we carried out extensive desk-based research and, where available, identified data pertaining to the opportunities and barriers for collaboration. We analysed policy-related documentation from the UK, Chinese and Shanghai governments, focusing on areas where policy and interests overlap. We also carried out several high-level consultations with industry professionals and academics in China and the UK to supplement the desk-based research.

On 6-7 November 2018, a workshop organised by the AHRC, STA and SEITC was held in Shanghai. The workshop was attended by industry and academic representatives from China and the UK. This report also reflects the discussions and findings from that workshop.

This document references source material throughout. Readers are encouraged to use that source material to further explore any specific areas of interest. References are in English and Chinese.

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2 Executive Summary

- 2.1 Both the UK and China have identified the creative industries as central to the development of their overall economies. Both countries have committed to accelerating the growth of their respective creative industries through policy and funding. These commitments come at a time of economic change in both countries, with the UK scheduled to leave the EU and China transitioning from a manufacturing-based economy to a knowledge-based economy.
- 2.2 The UK's creative industries are one of the country's fastest growing industries. The country has excelled at internationalising this industry as a net exporter of creative services and products. The UK has ambitious growth, employment and export targets for the industry. To achieve these targets, the government has an industrial strategy in place which includes: investing over £50M / ¥ 446M CNY into an immersive technologies and experiences R&D programme with industry and academia, and investing over £80M / ¥ 714 CNY to develop nine industry and university R&D clusters and a new Creative Industries Policy and Evidence Centre. This work is being led by the AHRC.
- 2.3 Economic reform and a growing urban middle class in China are driving the growth in the culture and creative industries (CCI) and the consumption of creative goods and services across the country. The government has clear targets and national development strategies to grow the industries. The Shanghai government has identified specific sectors and sub-sectors of the creative industries as central to the city's development. These include: film and television; performing arts; animation and gaming; 'Cyberculture'; and creative design. There are specific policies and funding programmes in place to support this development and to support Shanghai and the country compete internationally.
- 2.4 The UK is home to some of the world's leading businesses and researchers in the creative industries. As an exporter of creative goods and services, the UK is a recognised global leader. As a relatively small country, international trading relationships are critical to achieving growth targets. For China, sustaining growth in the creative industries is critical to mitigating economic slowdown; while transitioning to a knowledge-based economy is dependent on the development of an internationally competitive industry. Mutually beneficial collaborative relationships are critical if both countries are to realise their ambitions successfully.
- 2.5 There remain many challenges and barriers to collaboration between the two countries. For example, both countries have relevant skills and talent shortages. While the UK is a thriving creative exporter, the industries are dominated by SMEs and micro-businesses that struggle to commit the resources necessary to working in China. Meanwhile, China's creative industries are growing rapidly, but they struggle to compete internationally and there are heavy restrictions in China with regard to direct importation and distribution of foreign content.
- 2.6 The recommendations and considerations presented in this document (see Section 11 and 12) are reflective of academia, industry and government policy and practices in both countries and intend to support the AHRC in developing and sustaining a programme that enables a rapid scaling-up of collaborations between the UK and China – with a specific focus on Shanghai as China's creative industries powerhouse. The programme will facilitate new collaborations in the creative industries that deliver sustained economic, cultural and intellectual benefits in both countries.
- 2.7 This report should also inform industry and academic stakeholders and potential programme applicants to better understand the areas for potential collaboration which are mutually beneficial for China and the UK, and to help overcome existing barriers to collaboration.
- 2.8 Recommendations in this report propose the development of research and development programmes that:
 - Provide a basis for shared policy, regulatory and industry evidence exchange

- Explore how China and the UK can legally, ethically and commercially share data and information
- Explore and compare audience behaviours in both countries
- Support the internationalisation of Chinese film and video productions and post-production services, and support Chinese producers to improve the quality of their productions
- Support the diversification of China's video games industry
- Support the rapid scaling-up of talent and skills development across the creative industries in China and the UK
- Enable existing UK-related immersive technologies and experiences related resources and capacities to cooperate collectively with a relevant consortium of Chinese partners
- Support the discovery and sharing of creative content-related data and copyright information between China and the UK

2.9 The following considerations cut across all areas of interest. The considerations are designed to support partners to maximise the opportunities and the impact from a China-UK research and development programme, and sustain the benefit from that programme:

- Provide a shared on-the ground expert project and partnership liaison service
- Maximise the use of available industry park and cluster infrastructure in China
- Include an ongoing evaluation process with appropriate measures of success and quality that are reflective of the two countries
- Explore the different cultures and approaches to innovation in both countries
- Explore how to leverage private sector financing in both China and the UK to support research and development in both countries

3 UK Creative Industries

- 3.1 In 1997, the UK was the first country to map and quantify the creative industries as a defined economic sector. The sector is made up of nine sub-sectors: advertising and marketing; architecture; crafts; design; film, TV, video, radio and photography; IT, software and computer services; publishing; museums, galleries and libraries; and music, performing and visual arts.
- 3.2 Since 2010, the gross value added (GVA) of the sector has increased by over 40% and in 2016 the sector contributed £91.8Bn. of GVA. The sector now generates over 5% of the UK economy. It is the sector with the largest growth in employment in the UK since 2011, with over 25% of employment growth during that period.
- 3.3 The UK Creative Industries exported almost £20Bn of services in 2014, making it a net exporter of creative services, with imports of £8.7Bn. during the same period.
- 3.4 In 2018, the UK Government committed to investing more than £150M across the creative industries to achieve a GVA of £150Bn. and to create an additional 600,000 new jobs by 2023¹. A major part of the government's industrial strategy is to ensure that the sector can take advantage of international opportunities with a target to increase exports by 50% by 2023.
- 3.5 As part of this strategy, the government, together with industry and academic support, will invest over £50M in an immersive technologies and experiences programme called the *Audience of the Future Challenge*.² The aim of the challenge is to support the development of the immersive sector and to create the next generation of immersive products, services and experiences. The challenge will do this by bringing businesses, researchers and technologists together to create new experiences for audiences.
- 3.6 Through the AHRC, the government is also investing over £80M in nine creative industry R&D clusters across the UK and in a new Creative Industries Policy and Evidence Centre that focuses on bringing together research and industry in mutually beneficial partnerships.³ One of the clusters will include a new National Centre of Excellence in Immersive Storytelling to develop training and research programmes in immersive storytelling.⁴ These investments will bring together expertise in academia and industry, and aim to tackle major challenges within the creative industries, promoting growth and development in that sector.
- 3.7 Other strands of the UK government's strategy to grow the creative industries include:
- further measures to tackle copyright infringement,
 - reducing barriers to accessing finance and investment,
 - creating a new industry and government Trade and Investment Board to help increase exports, and
 - increasing the supply of skills and talent by supporting an industry-led creative careers programme.⁵

¹ UK Governments, Creative Industries: Sector Deal, 2018

² <https://www.immerseuk.org/audience-of-the-future/about-audience-of-the-future/>

³ <https://ahrc.ukri.org/newsevents/news/r-d-investment-set-to-provide-step-up-for-creative-industries/>

⁴ <https://ahrc.ukri.org/newsevents/news/winners-to-host-new-creative-industries-centre-of-excellence-announced/>

⁵ <https://www.gov.uk/government/publications/creative-industries-sector-deal/creative-industries-sector-deal-html#executive-summary>

4 Chinese and Shanghai Creative Industries

China

- 4.1 The Chinese government defines the culture and creative industries as consisting of the following 'core categories': press and information services; content creation and production; creative design services; cultural communication channels; cultural investment and operation; cultural entertainment and leisure services.⁶
- 4.2 These industries are central to the Chinese government's plan to move away from a manufacturing-based economy to a service and knowledge-based economy.⁷
- 4.3 Economic development coupled with the explosive growth of China's middle class has resulted in a booming demand for creative and cultural products and services. In 2017, the total value of China's cultural industries was estimated at RMB 3,450Bn. (£380Bn.), accounting for almost 5% of GDP, and up by 12% from 2016. This follows a growth of 13% from 2015 - 2016.⁸
- 4.4 For 'urban households', the share of expenditure on services rather than goods is now at 40%, twice the share from 20 years ago. Entertainment is a key service sector.⁹
- 4.5 The 'digital and creative' industries was included in the Chinese government's 13th Five-Year Plan as a strategic area of focus.¹⁰ The government sees this industry as a driving economic force to *"mitigate the slowdown of the country's overall economy"*.¹¹
- 4.6 China is now the world's second biggest spender on R&D and is narrowing the gap with the US. Funding on basic research however remains lagging.¹²
- 4.7 Academia plays a key role in advising and shaping cultural policy in China. Many of the leading universities have research centres dedicated to the creative and cultural industries. The China Academy of Social Sciences (CASS) includes a Research Centre for Cultural Policy and is responsible for shaping and informing national cultural and creative industry policy.¹³

Shanghai

- 4.8 The cultural and creative industries is a pillar industry in Shanghai. In 2016, the added value of the cultural and creative industry reached RMB 331Bn. (£36.3Bn.), accounting for about 12% of the local GDP.¹⁴
- 4.9 Founded in 2004, the Shanghai Creative Industry Research Centre at the Shanghai Academy of Social Sciences (SASS) plays a leading role in the development of policy for Shanghai's creative industry.¹⁵
- 4.10 Shanghai's 13th Five-Year Plan for culture reform and development (2016-2020) sets out the local

⁶ The latest catalogue and categorisation of the cultural industries - by the Ministry of Statistics

⁷ 2018 China Modernization Report: Study of Modernization of Industrial Structure,

<http://www.modernization.ac.cn/document.action?docid=57081>

⁸ http://www.sohu.com/a/242212813_351788

⁹ China's Economic Transformation: Lessons, Impact, and the Path Forward, Peterson Institute for International Economics,

<https://piie.com/publications/piie-briefings/chinas-economic-transformation-lessons-impact-and-path-forward>

¹⁰ http://www.gov.cn/xinwen/2017-03/20/content_5178955.htm

¹¹ <http://www.stats.gov.cn/zjtj/zthd/sjtr/d8jkfr/qt/201709/P020170915597836129730.pdf>

¹² <http://science.sciencemag.org/content/362/6412/276>

¹³ <http://www.cassrccp.com/>

¹⁴ <http://www.creativecity.sh.cn/chanyezhenci/detail.aspx?id=93>

¹⁵ <http://www.sass.org.cn/>

government's plan to position Shanghai as "*China's cultural centre and an international cultural metropolis*".¹⁶ This includes developing Shanghai into the following: "*Global film and TV Creation Centre*"; "*The Capital of Asian Performing Arts*"; "*Global comics, Animation and Gaming Creation Centre*"; "*Leading role in China's Internet Culture*"; and "*A Creative Design Centre with International Influence*".¹⁷

- 4.11 To achieve this, the government has developed policies to accelerate the development of the cultural and creative industries, focusing on the following sub-sectors: film and television; performing arts; animation and gaming; 'Cyberculture'; creative design; publishing; 'Art Trading'; and 'Cultural Equipment'. As recently as August 2018, the government announced that an industry development and investment fund will be established to support those sectors.¹⁸
- 4.12 The target for these policies is to have the CCI account for 15% of the city's GDP by 2022 and 18% in 2030.¹⁹
- 4.13 In accordance with the *One Belt, One Road* (OBOR) initiative, the Shanghai government is responsible for promoting Shanghai as China's 'international cultural trade base', to strengthen cultural trade with countries along the OBOR.²⁰

¹⁶ <http://www.shdrc.gov.cn/wcm.files/upload/CMSshfgw/201706/201706020439001.pdf>

¹⁷ <http://shzw.eastday.com/shzw/G/20171214/u1ai11069790.html>

¹⁸ http://www.gov.cn/xinwen/2018-08/29/content_5317379.htm

¹⁹ <http://www.shccio.com/ztzc/1493.jhtml>

²⁰ <http://www.shanghai.gov.cn/nw2/nw2314/nw2319/nw12344/u26aw53799.html>

5 Film and TV

UK

- 5.1 The screen industries in the UK (film, high-end TV, animation and video games) account for almost 10% of the UK creative industries and over 130,000 jobs.²¹ Excluding video games, film, high-end TV and animation account for over 90% of the screen industries in the UK. The skills and services required for those sub-sectors have significant areas of overlap.
- 5.2 In the UK, the TV industry is a unique blend of public service broadcasting and commercial production. UK video content is highly valued internationally, with TV exports rising to more than £1.3Bn. in 2015/16, an increase from £1.2Bn. in 2014/15.²² UK film and video production skills are also highly valued internationally, with £1.69Bn. inward investment in film in 2017, a 23% increase on the previous year; and £684M for high-end television production, a 27% increase.²³

China and Shanghai

- 5.3 With more than 45Bn. CNY in box office revenues in 2017, China is the second largest film market in the world.²⁴
- 5.4 Shanghai is the birth place of China's film industry. In the early 20th century, the majority of film productions in China originated from Shanghai. During the Second World War, a group of Shanghai film professionals moved to Hong Kong and kick-started the development of the Hong Kong Film industry.
- 5.5 The Shanghai government has committed Shanghai to become a “*Global Film and Television Production Centre*” and a “*Global Animation and Gaming Production Base*”. In addition to the broader creative industries strategy, the Shanghai government has a number of specific supporting policies for the development of the film and TV industry in the city. This includes a 200M CNY funding commitment.²⁵
- 5.6 In line with these policies, there are a number of ‘film clusters’ in development across the city. One such cluster includes the “*Pudong International Film and Television Industry Park*”. The park is part of a 25Km² area in Pudong that includes Disneyland in China. The objective for the cluster is to develop an ecosystem for the development of film and television in China and to become an international destination for film and TV production.
- 5.7 In 2016 film box office revenues in Shanghai topped 3Bn. CNY and helped the city become the number one consumer of film in the country.²⁶ Revenue from Shanghai-related film productions has increased dramatically in the past three years, rising from 1Bn. CNY in 2015 to 3.6Bn. CNY in 2017.²⁷
- 5.8 There are more cinema screens in China than in any other country in the world. In 2017, Shanghai added an additional 67 cinemas with a total 419 screens, taking the total number of cinemas in the city to 320 with 1837 screens.²⁸ There are already more than 1,300 film companies and studios registered in Shanghai,

²¹ <https://www.bfi.org.uk/education-research/film-industry-statistics-research/reports/uk-film-economy>

²² <http://www.pact.co.uk/news-detail.html?id=impressive-growth-in-uk-television-exports-up-10-to-1-326m>

²³ <https://www.bfi.org.uk/news-opinion/news-bfi/announcements/bfi-statistics-2017>

²⁴ <https://variety.com/2017/film/asia/china-box-office-expands-by-2-billion-in-2017-1202650515/>

²⁵ <http://wgj.sh.gov.cn/node2/n2029/n2031/n2062/u1ai155301.html>

²⁶ <https://www.jfdaily.com/news/detail?id=57020>

²⁷ https://www.sohu.com/a/220980195_699621

²⁸ <https://www.jfdaily.com/news/detail?id=57020>

including Alibaba Pictures and iQiyi Pictures.²⁹

- 5.9 Internationalising and exporting Chinese film is part of the government's *"Going Out"* strategy, which became part of national policy in 2011. Success of Chinese film in the international market is important for the development of the industry: international collaborations and co-productions are considered important to helping Chinese films compete internationally, as they encourage knowledge exchange and help internationalise the domestic industry.
- 5.10 A new Film Industry Promotion Law was launched after 12 years of research and review and came into effect in March 2017. It aims to develop the film industry and further encourage international cooperation.
- 5.11 There are coproduction treaties between China and the UK for both film and TV, and co-productions are successful in China with 8 of the top 10 'domestic' films in 2016 described as co-productions.
- 5.12 Relative to Hollywood blockbusters, post-production budgets for Chinese films are low. Successful Hollywood blockbusters can generate ten times the global revenues of successful Chinese films. For example, there were four foreign films that generated over 1Bn. USD at the box office worldwide in 2016, yet only three Chinese films topped 300M USD. Expectations for relatively low returns at the box office keep budgets for post-production low; this can have an adverse effect on quality.
- 5.13 Relative to the UK, the Chinese VFX and animation sector is still at an early stage of development. The domestic industry is dominated by a small number of production companies that provide end-to-end services, including VFX services. Despite an increasingly comprehensive offer from Chinese post-production companies, their VFX capabilities vary. To improve these services, Chinese companies are increasingly looking to partner with foreign service providers.
- 5.14 The Chinese government is supportive of new formats. Between 2012 and 2015, the Chinese National Film Development Fund Committee subsidised film productions using new formats. This support for the new formats follows a surge in the number of IMAX theatres in China and by the end of 2016, there were over 400 IMAX theatres in China, 35% of the worldwide total, with another 300 theatres planned.³⁰
- 5.15 By the end of 2016, over 600M people were consuming online video content in China. Audiences are from a younger demographic than traditional television viewers and seek out a wider variety of programming including more international programmes not offered by traditional TV. Like their foreign counterparts, some of China's leading online TV and video platforms – including Youku Tudou, iQIYI and LeTV – produce their own premium shows.

Barriers

- 5.16 While foreign films generally have a higher value at the box office in China than domestic productions, challenges for foreign film and TV productions and producers in China remain. These include understanding differences in taste between western and Chinese audiences, censorship and political sensitivity, and policies to protect the domestic market. The film and TV industry in China has tight restrictions on the importation of foreign content.³¹ While more foreign films have made their way to Chinese cinemas in recent years³², tighter control is possible in the near future. In September this year, the National Radio and Television Administration (NRTA) published a 'discussion draft' on the 'Provisions on Administration of Import and Broadcasting of Overseas Audio-Visual Programs'. The provisions apply to 'overseas' films, TV programmes, animation and documentaries. If implemented in their present form, the provisions will further restrict the streaming and broadcasting of foreign film and TV content in China. One of the stated objectives

²⁹ http://www.sohu.com/a/150866970_388075

³⁰ <https://www.imax.com/content/imax-and-omnijoi-cinemas-expand-partnership-china-40-theatre-agreement>

³¹ <http://chinafilminsider.com/foreign-films-in-china-how-does-it-work/>

³² <https://www.scmp.com/news/china/diplomacy/article/2169837/china-quietly-opens-door-more-foreign-films>

of this process is to support the domestic Chinese entertainment industry and to improve domestic 'standards'.³³

- 5.17 China's film industry is going through a period of restructuring following recent reports of a crackdown on tax evasion.³⁴ Although the number of co-production permits has increased in recent times, there is lack of clarity on how to co-finance and co-produce during a period of restructuring. Of course, tax reform and industry reform can be positive for the sector and while likely to slow production in the short term, better regulations could provide more certainty to domestic and international producers.
- 5.18 Restrictions are not limited to film, with 'foreign cartoons' prohibited on TV during the 'golden hours' of 5 – 8PM.³⁵
- 5.19 The recent merging of censor and publicity departments in China reflects tougher censorship in line with government policy and potential further restrictions on producers, domestic and international.³⁶
- 5.20 In September this year, NRTA published a draft of the 'Provisions on the Participation of Overseas Personnel in Production of Audio-Visual Programs'. The provisions propose to limit the proportion of 'foreign creatives' in domestically produced programmes to below 20%.³⁷

Examples of Collaborations

- 5.21 Several UK universities with established partnerships in China already provide undergraduate and post-graduate programme in TV and Film. This includes the Xi'an Jiaotong Liverpool University³⁸ and the University of Nottingham Ningbo.³⁹
- 5.22 UK industry bodies including PACT⁴⁰ and BAFTA⁴¹ have established professional exchange programmes in China to support knowledge exchange and capacity development.

³³ <http://news.sina.com.cn/o/2018-09-20/doc-ihkhfqnt0872132.shtml>

³⁴ <https://www.theguardian.com/film/2018/oct/04/fan-bingbing-mysterious-disappearance-chinese-film-star-elite>

³⁵ <http://www.china.org.cn/english/culture/177877.htm>

³⁶ <https://www.reuters.com/article/us-china-parliament-media/china-tightens-grip-on-media-with-regulator-reshuffle-idUSKBN1GX0JG>

³⁷ <http://news.sina.com.cn/o/2018-09-20/doc-ihkhfqnt2331022.shtml>

³⁸ <http://www.xjtlu.edu.cn/en/find-a-programme/undergraduate/film-and-television-production>

³⁹ <https://www.nottingham.ac.uk/pgstudy/courses/cultural-media-and-visual-studies/film-television-and-screen-industries-ma.aspx>

⁴⁰ <http://www.pact.co.uk/member-services/event-listing/event-detail.html?id=uk-china-creative-exchange-2018>

⁴¹ <https://www.shine.cn/news/metro/1806227013/>

6 Immersive Experiences and Technologies

- 6.1 Immersive experiences are a new form of content and require new and innovative ways to tell stories, using a combination of new and existing technologies. These processes and skills draw on expertise from across the creative industries and associated technology sectors. This new industry spans the performing arts, theme-parks, exhibitions, video games, film and more.
- 6.2 The immersive technologies market includes: virtual and augmented reality; 360 filming; arcade technology; and more. It is still in its infancy but is expected to reach £100Bn. worldwide by 2020.⁴²

UK

- 6.3 As a reflection of the relative health of these emerging industries in the UK, the UK immersive technologies industry has attracted the second highest share of global investment in the period until 2016.⁴³
- 6.4 The UK is also a recognised leader in immersive theatre. This year, the UK announced its first immersive theatre space.⁴⁴ Many of the world-leading immersive theatre producers and shows are from the UK, including: Punchdrunk; You Me Bum Bum Train; and Curious Directive's Frogman, a show that combines VR technology and theatre.
- 6.5 The UK is the largest market for AR and VR in Europe, with the majority of UK companies focused on producing content.⁴⁵
- 6.6 The UK government has committed to ensuring the UK is well-placed to take advantage of this new industry and the country's position as a world leader in the creative industries. The government has committed to invest over £50M into an immersive technologies programme called the *Audience of the Future Challenge*⁴⁶. The programme will do this by bringing businesses, researchers and technologists together to create new immersive experiences for audiences.

China and Shanghai

- 6.7 Of the 1.7Bn. USD invested globally in immersive technologies in the 12 months up to the first quarter of 2016⁴⁷, over 1Bn.USD came from China.⁴⁸
- 6.8 The Chinese government has issued policies specific to the development of immersive experiences and technologies, including the following:
- In September 2018, the Ministry of Culture issued a document titled “*Opinions on Promoting Transformation and Upgrading of Cultural and Entertainment Industry*” in which it promotes the integration of advanced technologies, such as VR and AR, into the cultural and entertainment industry.⁴⁹
 - The *2006-2020 China Middle and Long Term Science and Technology Development Plan* encourages VR related technology and systems for medical science, entertainment, arts, education, military and industrial manufacturing.

⁴² <https://www.digi-capital.com/news/2017/01/after-mixed-year-mobile-ar-to-drive-108-billion-vr-ar-market-by-2021/>

⁴³ <https://growthenabler.com/flipbook/pdf/Market%20Pulse%20Report%20-%20ARVR.pdf>

⁴⁴ <https://www.thestage.co.uk/news/2018/uks-first-purpose-built-immersive-theatre-space-unveiled/>

⁴⁵ <https://www.pwc.co.uk/issues/innovation-and-technology/mapping-the-growth-of-virtual-reality-in-the-uk.html>

⁴⁶ <https://www.immerseuk.org/audience-of-the-future/about-audience-of-the-future/>

⁴⁷ <https://www.digi-capital.com/news/2016/04/arvr-investment-hits-1-7-billion-in-last-12-months/>

⁴⁸ <https://www.cbinsights.com/research/ar-vr-startups-china-investors/>

⁴⁹ http://www.gov.cn/xinwen/2016-09/22/content_5110939.htm

- In August 2016, the National Development and Reform Commission announced plans to establish a national VR/AR lab. Domestic companies can apply for dedicated funding for R&D and industrial applications in sports, military, education and other areas.
- 6.9 Local government policy initiatives are encouraging the development of VR clusters in industrial parks. For instance, the city of Nanchang has established a VR industrial park and is providing funding and other incentives for VR companies. The cities of Fuzhou and Chengdu have also established VR industrial parks with policy incentives to attract both domestic and international companies and investment.
 - 6.10 The Shanghai government is keen to work closely with industry to develop these emerging industries. In September 2018, the Shanghai government and 163.com, one of China's technology giants, signed a strategic collaboration and agreed to establish a '*cultural and creative technology industry base*'. The collaboration specifically references AR and AI, and also aims to promote Shanghai's video games sector.⁵⁰
 - 6.11 China's leisure industry has been growing steadily at a rate of over 10% year-on-year in recent years. The country has the second largest spending on leisure and entertainment in the world, which includes spending on VR, AR and related immersive entertainment. Spending is expected to reach RMB400Bn. by 2019.⁵¹
 - 6.12 Between 2015 – 2016, hardware accounted for almost 80% of all immersive technology investment in China.⁵² While there has been a boom in hardware development, content development is lagging behind. Many content developers in China are choosing not to invest in VR content R&D because of the relatively large development costs and uncertain business model.
 - 6.13 China has the largest number of shopping centres in the world - over 4,000⁵³. However, the traditional business models for those centres i.e. retail combined with cinemas and F&B, is becoming less attractive to consumers. In first-tier Chinese cities, to increase footfall, a proportion of the footprint of shopping centres is now dedicated to arts and culture. Immersive entertainment is seen as a potential driver for further growth in such shopping centres.
 - 6.14 Chinese museums and galleries are also using 'digitised exhibitions' and an appetite for visual technology to draw large audiences. Audiences include many who would not usually visit a museum or pay for the experience. Young Chinese people and members of the new middle class are for example drawn by experiential exhibitions, considered more entertaining than the idea of 'fine art'.
 - 6.15 There is a growing demand for VR experiences to 'activate' commercial spaces. By the end of 2016, China had more than three thousand VR arcades in shopping malls⁵⁴, internet cafes and amusement parks. Arcades are popular because high-end VR hardware is expensive. The arcade experience allows customers to gain access to this expensive hardware at a relatively low price.
 - 6.16 Theme parks are a booming industry in China, with an estimated combined turnover of over 45Bn. CNY for 2018, with turnover estimated to reach more than 90Bn. CNY by 2022.⁵⁵ This would place China as the largest theme-park market in the world. Popular IP, mix-reality, immersive experiences and spectacular live performances are seen as a way to attract visitors to theme-parks.⁵⁶
 - 6.17 Live spectacles are also increasingly used to attract domestic tourists to developing tourist destinations. Zhang Yimou's outdoor spectacle "*Impression:Liu Sanjie*", developed in 2002, caused a spike in domestic tourists to Yangshuo. Other 'Impression' spectacles were produced in other tourist destinations including Lijiang and Hangzhou.

⁵⁰ <http://www.chinaz.com/news/mt/2018/0930/942441.shtml>

⁵¹ <https://www.iiresearch.com.cn/Detail/report?id=3251&isfree=0>

⁵² <https://technode.com/2016/10/19/chinas-virtual-reality-investment-is-moving-its-focus-from-hardware-to-content/>

⁵³ <https://retail.emarketer.com/article/china-glut-of-shopping-malls/59318504ebd4000b2ceae033>

⁵⁴ <https://www.forbes.com/sites/charliefink/2017/12/19/vrar-in-china-an-emerging-giant/#3a4a2d6c7573>

⁵⁵ Qianzhan Industry Research Institute, bg.qianzhan.com

⁵⁶ <https://uk.reuters.com/article/uk-china-tech-theme-park/virtual-reality-boom-brings-giant-robots-cyberpunk-castles-to-china-idUKKBN1DO02J>

Barriers

- 6.18 The theme-park industry in China is booming, however the domestic market is over-reliant on foreign design teams. In addition, positioning, brand and audience development are areas that require further support for the industry to grow.⁵⁷
- 6.19 Popular IP is highly valued in China and seen as a way to further develop the theme-park and immersive experience market. Understanding how to adequately protect and value foreign IP remains a problem. There is also a relative lack of experience in merchandising and the related licencing industries in China.
- 6.20 There is a shortage of quality mixed-reality content available for global audiences. Production is expensive and there is a relative lack of experience in writing and designing content and experiences for mixed-reality formats.
- 6.21 Although prices have fallen in the past few years, the cost of high-end VR/AR hardware is still prohibitive. This, coupled with an uncertain business model for content, is stalling industry development.
- 6.22 The UK's immersive technologies sector is dominated by SMEs which will have limited resources and capacity to commit to working in China.

Examples of Collaborations

- 6.23 Existing China and UK immersive experience collaborations across the performing arts include SMG's production of Punchdrunk's *Sleep No More*⁵⁸ and the Beijing Yidiantong Cultural Communication Company's and Les Enfants Terribles' co-production of *Alice's Adventures Underground*⁵⁹.
- 6.24 Merlin Entertainment have worked on a number of immersive and interactive destinations in China including: Shanghai Dungeon; Peppa Pig World Shanghai; Legoland Discovery Centre Beijing, Peppa Pig World Beijing and Little Big City Beijing.

⁵⁷ <https://www.qianzhan.com/analyst/detail/220/180723-7e6455e0.html>

⁵⁸ <https://www.punchdrunk.com/sleep-no-more/>

⁵⁹ <https://www.ebpuk.com/productions/alices-adventures-underground-china>

7 Video Games

- 7.1 The international market for video games continues to grow, reaching £138 Bn. USD in 2018, an increase of over 13% from 2016/17.⁶⁰

UK

- 7.2 The UK video games industry is valued at over £5Bn. and is the 5th largest video games market in the world.⁶¹ The market is growing strongly and is up by over 12% from 2016. The market for mobile games is now worth over 20% of the overall market, at over £1Bn.⁶²
- 7.3 On average, UK video games businesses generate over 60% of their revenue outside the UK.⁶³ This includes exporting services and licencing game-related IP.
- 7.4 Similar to the film and TV industries, the video games industry benefits from a tax relief scheme. Dedicated public funding for video games in the UK is however far lower than for TV or film. The UK Games Fund is a government backed £4M fund to support prototype-stage development.⁶⁴

China and Shanghai

- 7.5 China is the largest video games market in the world with sales revenues over 200Bn. CNY in 2017 and with over 500M players. GVA of the Shanghai games industry in 2017 was almost 60Bn. CNY, with over 25% of the national share and over 8% of the global share.
- 7.6 In total, 12 companies generate 90% of revenues from video games in China. Tencent and NetEase dominate the video games market with over 50% of the entire video game market and over 60% of the mobile game segment.
- 7.7 The Chinese market is dominated by mobile games, which make up almost 50% of the market. Consoles account for a relatively small proportion of the market. In comparison, in the global market, console games account for over 30% of the market. These differences are a result of the only recently lifted ban on consoles in China.
- 7.8 In 2015, the decision by the Ministry of Culture to allow the sale of consoles in China unlocked a huge potential market. However, there is still strict censorship on imported console games. The legacy of the ban on consoles means that local studios do not have the necessary skills and experience to produce console games.
- 7.9 E-Sports accounts for over 20% of revenue from video games in Shanghai, with over 40% of e-sports events in China taking place in Shanghai.^{65/66}

⁶⁰ 2018 Global Games Market Report, Newzoo

⁶¹ <https://newzoo.com/insights/infographics/the-u-k-gamer-2017/>

⁶² <https://ukie.org.uk/press-release/2018/03/uk-games-market-grows-124-record-%C2%A3511Bn-2017>

⁶³ <http://ukie.org.uk/news/2017/11/ukie-member-survey-prospects-exports-satisfaction>

⁶⁴ <https://ukie.org.uk/a2f/UKGamesFund>

⁶⁵ <http://www.gamelook.com.cn/2018/05/328465>

⁶⁶ http://www.iresearchchina.com/content/details8_33047.html

Barriers

- 7.10 Industry bodies in the UK note a funding gap to help existing businesses scale up⁶⁷. This includes funding to support businesses to work internationally.
- 7.11 According to policy released by SAPPRFT and the National Copyright Administration, in order to control the publishing process, foreign developers must work with local publishers to distribute games in China. The Chinese government has to approve every video game on sale in China. In March this year, the government stopped approving all new games, domestic and international.⁶⁸ This move is having an adverse effect on domestic and foreign producers.⁶⁹ It is reported that the intention of the government is to force game studios to improve the 'quality' of the games and take 'social responsibility'.⁷⁰ It is not certain when the effective ban will be lifted.
- 7.12 The Chinese government is also keen to limit the 'unhealthy' effects of video games. In April 2018, the Ministry of Education issued an urgent notice to all primary and middle schools, and a letter to all students' parents, about enforcing strict control on the time the students spend online gaming and with other 'unhealthy' internet content, in an attempt to prevent online and video games addiction.⁷¹
- 7.13 Few universities in Shanghai offer video game-related courses - most professionals come from computer science programmes or are trained 'in-house'.⁷² There is a reported shortage of talent to fill the roles of 'Game Designer', 'Game Programmer' and 'Game Planner'.⁷³

Examples of Collaborations

- 7.14 Tencent has made an agreement with the University of Oxford to host e-sports tournaments and help develop e-sports related courses at the university.⁷⁴

⁶⁷ <https://www.gamesindustry.biz/articles/2018-09-21-filling-the-gap-in-uk-games-funding>

⁶⁸ http://games.ifeng.com/a/20180831/45146568_0.shtml

⁶⁹ <https://venturebeat.com/2018/08/15/chinas-game-regulation-mess-is-starting-to-hurt-developers/>

⁷⁰ <http://www.scio.gov.cn/37236/37377/Document/1623460/1623460.htm>

⁷¹ http://www.moe.gov.cn/srcsite/A06/s3325/201804/t20180424_334106.html

⁷² <http://wemedia.ifeng.com/68953557/wemedia.shtml>

⁷³ <http://www.xiaqingmao.com/news/93-cn.html>

⁷⁴ <https://esportsinsider.com/2018/05/tencent-university-of-oxford/>

8 Data-driven Design and AI

- 8.1 Data, and the use of data to inform the development of products and services, touches all industries, including the creative industries. For example:
- Data is used to better understand film audiences' behaviours and tastes, and to inform investors and funders as to what films will be profitable⁷⁵
 - Machine learning and AI is being used to optimise animation processes⁷⁶
 - Data and advanced statistical analysis is informing how fashion designers design products that will sell.⁷⁷

UK

- 8.2 The UK is already a leading nation in the development of businesses producing world class data-driven and AI products and services.⁷⁸ Famously, Deepmind is a UK-founded AI company that went on to be acquired by Google/Alphabet in 2014 for a reported £500M.⁷⁹
- 8.3 To build on this strength and keep up with international competition, this year the UK government announced that it will commit, alongside industry and academia, almost £1Bn. to develop the AI sector.⁸⁰ Policies for the advancement in AI sit alongside the government's commitment to develop the immersive technologies industry.⁸¹

China and Shanghai

- 8.4 China is aiming to be the world's leader in AI by 2030. To do this, the government will spend billions in R&D funding. China already dominates AI investment: in 2017, almost 50% equity funding of AI start-ups globally came from China.⁸²
- 8.5 This is in line with the government's 2017 '*Next Generation Artificial Intelligence Development Plan*'⁸³ and last month's announcement that the Shanghai government will launch a 100Bn. CNY fund for developing the AI industry⁸⁴
- 8.6 In December 2016, the Shanghai '*Big-data Application and Innovation Centre*' was established.⁸⁵ Most recently, in June 2018, the government published a policy document titled '*Implementation Plan to Promote Shanghai Creative & Design Industry*' and set out a plan to develop the following areas:
- The use of 'big-data' to support fashion, architecture, advertising, and graphic and multimedia design
 - Increase the integrated use of AI, big data, cloud computing and AR in the CCI.
 - Use 'AR, big data analysis, interactive design and AI, to promote the integration of CCI and

⁷⁵ <https://digit.hbs.org/submission/making-a-legendary-data-driven-movie/>

⁷⁶ <https://medium.com/@lara.petrov/towards-new-ai-based-animation-ba61cf7e89ba>

⁷⁷ <https://channels.theinnovationenterprise.com/articles/8230-big-data-hits-the-runway-how-big-data-is-changing-the-fashion-industry>

⁷⁸ <https://www.sonovate.com/quickview/50-hottest-uk-ai-companies/>

⁷⁹ <https://techcrunch.com/2014/01/26/google-deepmind/>

⁸⁰ <https://www.gov.uk/government/publications/artificial-intelligence-sector-deal/ai-sector-deal>

⁸¹ <https://www.gov.uk/government/news/immersive-technologies-for-audiences-of-the-future-new-funding>

⁸² <https://multimedia.scmp.com/news/china/article/2166148/china-2025-artificial-intelligence/index.html>

⁸³ http://english.gov.cn/policies/latest_releases/2017/07/20/content_281475742458322.htm

⁸⁴ <http://www.chinadaily.com.cn/a/201809/18/WS5ba0ade9a31033b4f4656be2.html>

⁸⁵ <http://sh.people.com.cn/n2/2016/1228/c134768-29523271.html>

technology'⁸⁶

Barriers

- 8.7 China's new Cybersecurity law heavily limits the collection and use of Chinese citizens' data by foreign businesses and institutions. The law also requires businesses to use authorised data-centres in China to store that data, with limitations on the movement and access of that data 'overseas'.⁸⁷
- 8.8 There is a global shortage of talent across AI and related disciplines.⁸⁸ There is also a reported lack of understanding as to how best to apply AI across industries⁸⁹, including the creative industries. Although creative jobs tend to be resistant to automation⁹⁰, understanding how best to harness and combine AI with creativity will be important for the future of the industry.

Examples of Collaborations

- 8.9 The University of Birmingham and the Southern University of Science and Technology of China (SUSTech) are working together to establish a joint programme of research into AI.⁹¹

⁸⁶ <http://www.shanghai.gov.cn/nw2/nw2314/nw2319/nw12344/u26aw56214.html>

⁸⁷ <http://www.china-briefing.com/news/chinas-cybersecurity-law-an-introduction-for-foreign-businesspeople/>

⁸⁸ <https://www.bloomberg.com/news/articles/2018-02-07/just-how-shallow-is-the-artificial-intelligence-talent-pool>

⁸⁹ <https://www.forbes.com/sites/steveandriole/2017/05/15/the-lack-of-intelligence-about-artificial-intelligence/#3ce6a6b35ebd>

⁹⁰ Creativity Vs Robots , Hasan Bakhshi, Carl Frey and Michael Osborne, 2015, <https://www.nesta.org.uk/report/creativity-vs-robots/>

⁹¹ <https://www.birmingham.ac.uk/news/latest/2017/12/new-artificial-intelligence-centre.aspx>

9 Intellectual Property and Copyright

UK

- 9.1 The UK has a world-leading IP and copyright system. In the most recent Global Intellectual Property Index, the UK was placed third and fourth on the copyright index. China was placed 39th and 35th respectively.⁹²
- 9.2 As part of its strategy to develop the creative industries, the UK government has highlighted a need to further tackle copyright infringement. This will include working closely with online intermediaries and rights holders to agree new *“Codes of Practice in: social media, digital advertising and online marketplaces.”*⁹³
- 9.3 The data systems and infrastructure for creative content are not harmonised in the UK. This makes discovery of copyright information difficult and hampers the development of new business models around copyright, domestically and internationally. Some industry groups and businesses are working to address this issue.^{94/95}

China

- 9.4 In China, international and domestic IP and copyright holders until recently notoriously faced obstacles in asserting, managing, valuing and licensing their works. As far back as 2007, the sale of products that infringed on trademarks, copyrights, patents, design rights and a number of related rights were estimated by the OECD to account for 8% of China's GDP.⁹⁶ Problems with IP and copyright infringement in China were perceived as one of the biggest barriers to the development of the Chinese creative industries and for trade with international IP and copyright holders. This has changed in recent years following reform.
- 9.5 A crack-down on IP and copyright infringement was followed by a surge in the number of intellectual property rights (IPR) cases heard in China with over 130,000 cases heard in 2014, an almost 20% increase from the year before.⁹⁷ In response to this increasing number of IPR cases, the government in 2014 established three dedicated IP courts in Beijing, Shanghai, and Guangzhou, which have since heard more than 30,000 cases.⁹⁸
- 9.6 In 2016, the National Copyright Administration of China (NCAC) launched the Internet Sword Action initiative to investigate copyright infringement across publishing, mobile apps, e-commerce and content platforms, online advertising and cinemas.⁹⁹ In 2017 it is reported that China shut down over 2,500 sites offering pirated content.¹⁰⁰
- 9.7 IP and copyright reform in China have stimulated legitimate trade among Chinese and international publishers, technology companies, creators and copyright holders. A sample of some subsequent noteworthy deals include:
- pre-empting the copyright crack-down, Alibaba signed a distribution deal with German music rights company BMG, one of the first of its kind in China¹⁰¹ (March 2015)
 - Tencent announced that it expected to invest up to 5 billion CNY in original video content and in acquiring rights to video content in 2016.¹⁰² At the same time, it announced that it would become

⁹² Global Intellectual Property Index 2016, Taylor Wessing, <https://united-kingdom.taylorwessing.com/en/ip-index/about-gipi>

⁹³ <https://www.gov.uk/government/publications/creative-industries-sector-deal/creative-industries-sector-deal.html#executive-summary>

⁹⁴ <https://www.prsformusic.com/press/2017/prs-for-music-and-ppl-launch-joint-initiative-to-link-data-sets>

⁹⁵ <http://copyrightthub.org>

⁹⁶ <https://www.oecd.org/sti/38707619.pdf>

⁹⁷ <https://www.reuters.com/article/china-economy-ipr-idUSL1N1EC04Q>

⁹⁸ <http://thediplomat.com/2017/07/how-china-is-emerging-as-a-leader-in-global-innovation-and-ip-rights/>

⁹⁹ <http://www.ncac.gov.cn/chinacopyright/contents/518/330487.html>

¹⁰⁰ <https://www.scmp.com/tech/policy/article/2169623/chinas-copyright-watchdog-eyes-3000-websites-amid-latest-piracy>

¹⁰¹ <https://uk.reuters.com/article/uk-alibaba-bmg-idUKKBN0MQ0UL20150330>

¹⁰² <http://www.universalmusic.com/universal-music-group-tencent-music-entertainment-group-enter-strategic-agreement-significantly-expanding-chinese-music-market/>

the exclusive Chinese partner of Believe Digital and will distribute its catalogue of over 6 million songs.¹⁰³ (November 2015)

- Corbis Images was sold to the Visual China Group, China's equivalent of Getty Images¹⁰⁴ (Jan 2016)
- Tencent announced the signing of a major multi-year music licensing agreement with Universal¹⁰⁵ (May 2017)

9.8 These deals and the subsequent availability of legitimate quality content has resulted in a large increase in the 'paid for content'¹⁰⁶ market in China, which was worth 212.3Bn. CNY in 2016 - an increase of almost 30% from the previous year.¹⁰⁷

Barriers

9.9 While policy and regulatory changes in China have improved the landscape for copyright protection and trade, problems with piracy persist:

- In 2016, the Intellectual Property Research Institution at Zhongnan University of Economics and Law estimates piracy of 'internet literature' has resulted in a 4Bn. CNY to 6Bn. CNY 'annual loss' in revenue and a loss of up to 10Bn. CNY from digital music.¹⁰⁸
- The Copyright Research Centre at the Tencent Research Institution calculates revenue loss from online video piracy in 2015 at over 15Bn. CNY. This value is more than 35% of the total market value in 2015 and exceeds 50% of total advertising revenue.¹⁰⁹
- The Business Software Alliance suggests pirated software has resulted in almost 9Bn. USD loss of potential revenue in China in 2014.¹¹⁰

9.10 IP and Copyright data, systems and infrastructure are not harmonised between China and the UK, or across the creative industries in the respective countries. Finding rights-holder information is difficult – particularly so across borders and using different languages.

9.11 For some collecting societies in China, there is a lack of transparency between the societies and their members regarding data collection methods, and also a lack of reliable data available for the societies.¹¹¹ It is also reported that there is a lack of national databases, data standards and infrastructure to support more harmonised, efficient and reliable data collection methods.¹¹²

9.12 Recent copyright reform in China has resulted in large licensing deals between some of China's largest technology and media companies, and international content providers. These upfront licensing deals are prohibitively expensive for most smaller businesses and start-ups that want to provide content to users.

9.13 Registering copyright in China is difficult for foreign rights holders. While not mandatory, registering copyright in China is an important step for rights holders who wish to licence, protect and trade their copyrighted work.

¹⁰³ <https://www.musicbusinessworldwide.com/believe-digital-strikes-deal-tencent-china/>

¹⁰⁴ <https://www.reuters.com/article/us-corbis-m-a-vcg-idUSKCN0V101L>

¹⁰⁵ Tencent announced it has 'copyright cooperation' in place with more than 200 record companies, many from Asia including YG(Korea), LOEN(Korea), CUBE(Korea), Emperor Entertainment Group (Hong Kong)

¹⁰⁶ Types of content include games, video, music and digital publishing

¹⁰⁷ <http://www.ncac.gov.cn/chinacopyright/upload/files/2017/4/25231828313.pdf>

¹⁰⁸ http://www.legaldaily.com.cn/legal_case/content/2016-04/26/content_6603071.htm?node=33834

¹⁰⁹ http://www.legaldaily.com.cn/Finance_and_Economics/content/2016-12/28/content_6938750.htm?node=75684

¹¹⁰ http://www.cnii.com.cn/internetnews/2014-08/04/content_1416231.htm

¹¹¹ <http://ent.qq.com/zt2014/uantan43/>

¹¹² "The state of China's collective rights management in the context of the United States and Japan", Fengyan Zhang, 2017
<http://journals.sagepub.com/doi/full/10.1177/2059436417695894>

For example, proof of registration of a copyrighted work - while not absolute proof of ownership - is typically a pre-requisite before a platform in China is required to respond to any take-down notice related to that work¹¹³; and copyright registration of video games is necessary before they can be legally distributed through Chinese video game distribution platforms.¹¹⁴ The registration of copyright is administered by the Copyright Protection Centre of China (CPCC).¹¹⁵ While it is possible for individual foreign rights holders to register their copyright in China, it is difficult. Rights holders need to provide proof of identity from their embassy and provide registration materials, including evidence of copyright translated by an authorised translation company. Also, the registration services provided by the CPCC are in Chinese. Consequently, registration by foreign rights holders is typically carried out by an agency or a lawyer. This can be prohibitive for right-holders, particularly independent rights holders and creators.

Examples of Collaborations

- 9.14 The Centre for Digital Copyright and Intellectual Property Research in China was a research centre at the University of Nottingham Ningbo China funded by the AHRC. The centre aimed to support research and innovation capacity development in China through research in digital copyright and intellectual property.¹¹⁶

¹¹³ <http://www.chinalawblog.com/2016/01/copyright-takedowns-in-china-part-iv-whatever-you-do-register-your-copyrights-first.html>

¹¹⁴ <http://www.yodo1games.com/archives/learn-about-chinas-new-mobile-game-regulations.html>

¹¹⁵ <http://www.ccopyright.com.cn/index.php?optionid=980>

¹¹⁶ <https://qtr.ukri.org/projects?ref=AH%2FN504300%2F1>

10 Skills, Capacity Development and Financing

- 10.1 Both China and the UK have ambitious GDP and employment targets for their respective creative industries. If those targets are to be realised, both countries will have to develop the talent pipeline to increase the availability of skilled talent.
- 10.2 Creative jobs are resistant to automation and the effects of AI, with 87% of creative workers in the UK at low or no risk¹¹⁷. Research by the World Economic Forum lists key skills for the future; one is 'creative thinking'.¹¹⁸
- 10.3 Businesses that combine arts and science skills within businesses are 10% more productive than the average firm.¹¹⁹

UK

- 10.4 Skills shortages across the screen industries have been identified as a barrier to investment and growth in the UK. To tackle this skills shortage, the BFI has developed a '*Future Film Skills*' programme to add an estimated 10,000 new entrants to the industry over the next five years.¹²⁰
- 10.5 SMEs and micro businesses make up a large proportion of the UK's creative industries. Although creative businesses are more productive than comparably-sized businesses in other sectors, the relatively limited resources that small businesses have access to make scaling up for and committing resources to overseas business development difficult.¹²¹
- 10.6 For almost 20 years, investment in intangible assets in the UK has been greater than that for tangible assets. UK investment assets protected by IP rose to over £70B in 2014.¹²²
- 10.7 Access to finance for creative businesses and SMEs in the creative industries is notoriously difficult in the UK, with creative industries businesses less likely to apply for financing in the first place, and more likely to be rejected when they do.¹²³

China and Shanghai

- 10.8 China's recent cultural infrastructure boom i.e. the number of new theatres, museums, cinemas etc., has not been matched by an appropriate increased supply of talent. Educational offerings have fallen behind and there are not enough qualified professionals, particularly in areas that are not focused on the 'traditional arts'. Consequently, it is recognised by the industry that there is a shortage of qualified people to work for and manage creative and cultural institutions.
- 10.9 Employees in China's video game industry are typically paid higher than in other technology sectors. Experienced developers and designers are in high demand, and companies compete intensively in search of new talent. However, there is a reported talent shortage in the industry which stems from a limited number of video games-related university programmes. The few programmes that do exist don't sufficiently prepare

¹¹⁷ Creativity Vs Robots , Hasan Bakhshi, Carl Frey and Michael Osborne, 2015, <https://www.nesta.org.uk/report/creativity-vs-robots/>

¹¹⁸ The Future of Jobs, World Economic Forum, 2016, <http://reports.weforum.org/future-of-jobs-2016/>

¹¹⁹ The Fusion Effect: how firms gain from combining arts and science skills, Nesta, 2016, <https://www.nesta.org.uk/blog/the-fusion-effect-how-firms-gain-from-combining-arts-and-science-skills/>

¹²⁰ <https://www.bfi.org.uk/news-opinion/news-bfi/announcements/bfi-national-lottery-future-film-skills>

¹²¹ <https://www.nesta.org.uk/report/creative-nation/>

¹²² https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/561709/Estimating-UK-Investment-intangible-assets-IP-Rights.pdf

¹²³ <https://www.bl.uk/collection-items/access-to-finance-for-creative-industry-businesses-econometric-analysis-from-the-uk-survey-of-sme-finance-appendix-1>

students to perform at an international standard.

10.10 Shanghai is the home of China's financial services, and the government is open to using a combination of policy, public and corporate funds to support the growth of the creative industries. In November 2014, the government issued a policy document titled '*Financing to Support Development of the Cultural Industry*'. Policies included:

- Encouraging and supporting 'cultural companies' to IPO
- Encouraging the use of 'cultural corporate bonds', 'cultural industry investment funds', and the development of a 'cultural VC fund'
- Reducing the loan threshold of cultural companies
- Launching credit and insurance products designed for cultural companies
- Establishing a 'pilot zone for culture-finance collaboration'
- Leveraging the financial policies in the Free Trade Zone
- Supporting 'innovation in cultural financing'¹²⁴

Barriers

10.11 In addition to a shortage of industry professionals and qualified graduates, it is reported that universities and academia also suffer from a shortage of experienced researchers and tutors. This is further contributing to the talent shortfall in industry, as universities do not have the resources to scale existing academic programmes.

10.12 There are increasing restrictions on capital outflow from China, with a particular focus on limiting Chinese overseas invest in 'film and entertainment'.¹²⁵

10.13 The IPO suggests that a lack of understanding of the value of a business's IP in the UK means that businesses are not in a strong enough position to better exploit their IP.¹²⁶ This means that businesses are not adequately prepared to leverage their IP for investment or other funding purposes.

Examples of Collaborations

10.14 The University of York is working with the China Culture Investment Group (CCIG) to develop a new education and industrial training provision aimed at overseas students, including Chinese students. The total project investment by CCIG is expected to be up to £200M. The first cohort of students is due to enter the programme in September this year.¹²⁷

10.15 The Chinese video games developer Perfect World has established its own education division to support video games talent development. The company works in collaboration with Abertay University, Scotland, to share video games expertise.¹²⁸

10.16 In 2016, UK's Ingenious Media established a joint venture with the Chinese group Hejing Culture. The deal was reported to be worth \$200M and aimed to support the co-production of independent films for the

¹²⁴ <http://shcci.eastday.com/c/20141124/u1ai8459375.html>

¹²⁵ <https://www.bloomberg.com/news/articles/2017-08-18/china-further-limits-overseas-investment-in-push-to-reduce-risk>

¹²⁶ Banking on IP, IPO, 2013, <https://www.gov.uk/government/publications/banking-on-ip>

¹²⁷ <https://www.york.ac.uk/news-and-events/news/2015/ccig-partnership/>

¹²⁸ <https://www.abertay.ac.uk/news/2018/abertay-enters-strategic-partnership-with-perfect-world/>

international market.¹²⁹

¹²⁹ <https://www.ft.com/content/f4ce29ca-356c-11e6-a780-b48ed7b6126f>

11 Recommendations

This section presents a series of recommendations to the AHRC, Shanghai Theatre Academy, the Shanghai Economic Information Technology Commission and other funding and academic stakeholders. These recommendations should inform the proposed China-UK creative industries research and development programme as well as support applicants to that fund.

The recommendations reflect areas of interest where policy and practice in China and the UK overlap, and where there are barriers to collaboration in those areas that a programme of research and development might help overcome. The recommendations also reflect discussions and findings from the workshop hosted in Shanghai on 6-7 November 2018 at the Shanghai Theatre Academy. The workshop was attended by representatives of industry and academia from both countries.

Many of the recommendations overlap, with areas of interest reflective of an industry where skills, techniques and research migrate between sectors and sub-sectors. These recommendations reflect the industrial, economic and political contexts at the time of writing. The dynamic and ever-changing nature of the creative industries in both countries suggests that opportunities and barriers may emerge that do not yet exist and that these recommendations therefore do not reflect.

The recommendations are not meant to be exclusive or exhaustive but are a guide to both funders and potential collaborators in shaping future calls and applications. There are likely opportunities for collaboration that go beyond what is covered in the recommendations, and that may arise through the development of the funding programme.

The recommendations, where possible, propose to make the best use of existing resources and to maximise the strengths of both countries. They also look to ensure that any benefit from a programme of research and development is in keeping with the overarching objectives of the funding programme. Those objectives include the mutual academic, cultural, social and economic interests of both countries, and the potential for sustainable longer-term collaboration.

The recommendations cover large areas of research and industry, and sustainable collaboration may require additional support, funding and investment. It is possible that additional support is borne out of partnerships and opportunities initially funded through this programme. The recommendations and additional considerations in Section 12, highlight the importance of fostering strong, long-lasting partnerships as a basis for the future development of the programme and future collaborations.

11.1 Develop a shared policy, regulatory and industry evidence exchange programme

The Chinese, Shanghai and the UK governments have wide ranging and sophisticated policies to support the development of the creative industries, domestically and internationally. Relevant sector and sub-sector industry bodies and academic bodies have their own associated policies. China's regulatory landscape is particularly complicated for international businesses and research bodies to navigate, and the UK has its own nuanced regulatory structures.

The dynamic nature of these policies and regulations, coupled with language barriers, can combine to obfuscate respective policies and regulations. Better mutual understanding of the respective policy and regulatory landscapes would support and expedite collaboration.

Industry and trade activity, including audience and consumption patterns, in China and the UK's respective creative industries is very different. Exports and international consumption drive the UK's creative industries; domestic consumption drives China's creative industries. There are many areas where a better understanding of supply and

demand in both countries would inform and improve trade.

Indeed, better mutual understanding of these areas would inform future funding programmes and investments and provide vital intelligence to Chinese and UK stakeholders who want to work on future collaborative research and development.

The UK has recently established a Creative Industries Policy and Evidence Centre. China and Shanghai has its own government-linked policy, regulatory and trade research centre, based in Shanghai.

Recommendation: *A shared policy, regulatory and industry evidence exchange programme between the two countries should be developed that supports existing relevant bodies in both countries to observe, map and disseminate policy, regulatory and trade information. The programme should ensure that both countries obtain equal benefit from that exchange and that the benefit is sustainable. Information and data produced through the programme should inform future funding programmes, collaborative research and development, and trade.*

11.2 Develop a programme of research to explore how China and the UK can legally, ethically and commercially share data and information

The creative industries rely on access to, use and reuse of data and existing information for many aspects of research, trade, product and service development. Machine learning and AI processes depend upon access to large data and information sets, typically pertaining to user behaviour. Content platforms rely on access to existing libraries of media, collections and archives.

Ready access to data drives AI and machine learning techniques and AI has been identified as a strategically important area of industry for both the UK and China. Both countries have ambitious policies in place to develop these areas. China is the world's largest funder of AI research and the world's largest investor in AI-related businesses. AI and data analytics have many applications across the creative industries, e.g. to support advanced animation processes, game design, analysing and informing audience behaviours, and for making trade and product design decisions.

China and the UK have large bodies of existing media, collections and archives that have the potential to be reused and published in the respective other country. There are also opportunities to develop new products and services, and areas of research based on existing information, media and content that exist in the respective countries.

Both China and the UK have strict legal and regulatory regimes in place to protect citizens' data and information. These measures can block the use of data and information for cross-border research and development purposes. There are also significant ethical considerations in the development of new commercial products and services that use individual's data and publicly own information.

Recommendation: *A programme of research should be developed to explore how China and the UK can legally, ethically and commercially share data and information for the mutual benefit of the respective creative industries. The programme needs to: identify potential useful data and information resources, address legal and technical boundaries, relevant security protocols, different data and information standards and propose realistic solutions for the sharing and use of data and information if available. The programme should consider the ethical aspects of data and information sharing, particularly data pertaining to individuals and information that is publically owned and protected. Creative industries related applications should be at the core of the programme and ensure the benefit from the programme is mutual to both countries.*

11.3 Develop a research programme that explores and compares audience behaviours in both countries

The creative industries in China and the UK are structured very differently, and audience behaviours and consumption patterns in both countries reflect two very different industries. How and where Chinese audiences access creative content is very distinct to the UK. For example, China has its own domestic music and video streaming platforms, games distribution platforms and social media and communications platforms. Many content platforms popular in the UK are not available in China.

Popular content types, formats and genres are also very different. For example, mobile gaming dominates popular video game formats in China, the Chinese government incentivises historical and socially responsible films, and there is a high turn-over of popular sentimental and romantic TV and online video series.

There are however also areas where UK and Chinese audience tastes and behaviours overlap. Doctor Who is for example one of the most viewed TV and online video series in China, and animated features and Hollywood superhero blockbusters dominate Chinese box office.

Demographic differences in China are particularly pronounced, as decades of rapid economic development have resulted in large differences in behaviour between the old and young. The differences in behaviours between the young and old in the UK is less pronounced. China is comparatively very big, and audience behaviours vary widely between provinces and cities. In addition, the very different social and political contexts for culture and creative content should be considered, if behaviours and tastes between the two countries are to be better understood.

A shared understanding of audience behaviours in both countries would maximise the opportunities for collaborations between the two countries.

Recommendation: *A research programme that explores and compares audience behaviours in both countries should be developed. The programme should reflect the structural differences between the two countries, e.g. different platforms, censorship limitations, popular format types, while incorporating demographic and aesthetic differences. The programme also needs to reflect the dynamic and evolving nature of audience behaviours and provide a means to effectively capture and measure that changing nature. The programme should make best use of existing audience behaviour research in both countries and inform future research and development collaboration between the two countries. The programme should also consider the restrictions on data sharing between the two countries, specifically data pertaining to individuals.*

11.4 Develop a research and development programme that supports the internationalisation of Chinese film and video productions, and supports Chinese producers to improve the quality of their productions

As a net-exporter of film and video and associated services, the UK's film and TV industries is an international success story. China is the world's second largest consumer of film, with the largest number of cinema screens in the world, with Shanghai the biggest consumer of films in China.

In an attempt to protect and develop the domestic industry, the Chinese government has implemented strict controls over the importation of foreign film and video. However, relatively limited success domestically and internationally for Chinese productions is keeping budgets comparatively low and is hampering industry development. These limitations directly impact the quality and development of domestic production and post-production services and processes: SFX and animation are for example below international standards.

The Chinese and Shanghai governments have committed to the internationalisation of Chinese film and video and to bringing quality in line with international standards. This is to enable Chinese productions to compete internationally and to grow exports in this area. This is a process the UK is well-placed to support.

Recommendation: *A research and development programme that supports the internationalisation of Chinese film and video productions and supporting services, and demonstrably supports Chinese producers to improve the quality of their productions should be developed. The programme should focus on specific areas where Chinese productions are currently evidently lacking and where the UK is well placed to support, for example: post-production; SFX and animation; pre-production; and "story structure". The programme should support extending existing relevant research in the UK so that it is applicable in China, and support UK businesses to apply and develop their work with Chinese producers. The programme should be evaluated so it is mutually beneficial and sustainable, and*

has demonstrable impact, i.e. how do you measure quality improvement in this area? The programme should reflect the limitations of UK SMEs to work and commit resources overseas by making best use of existing resources and infrastructure in China, such as existing Chinese and Shanghai based film industry parks. The programme should ensure that existing IP and any IP developed as a result of the programme is appropriately protected.

11.5 Develop a research and development programme that supports the diversification of China's video games industry

China has the largest video games industry in the world. The industry is driven by the domestic consumption of Chinese games with a large portion of those games for mobile platforms. The industry is also dominated by a small number of very large games producers, i.e. NetEase and TenCent. The UK video games industry is structured very differently with exports driving the industry and the industry dominated by a large number of small producers.

There are strict regulations regarding the publication of video games in China, with the government approving the publication of all video games. In March 2018, the government stopped approving all new games, domestic and international. According to the government, this effective ban on all new games is in response to the perceived negative effects of screen addiction on society and intends to encourage games producers to improve the likely social impact of their games.

Following international trends and in response to recent developments, the video games industry in China is evolving, with e-sports accounting for a relatively large and growing portion of the entire industry. Indeed, taking the government's lead, social gaming and the use of gaming for social benefit is becoming a topic of interest to academia and industry in China.

China is experiencing a critical shortage of skills and talent to satisfy the demand of the industry, and the UK has some of the world's most innovative and respected video games development, education and training programmes.

Recommendation: *A research and development programme that supports the diversification of China's video games industry should be developed. The programme should focus on areas where the industry is lacking in China and where there is encouragement from government, academia and industry to diversify, e.g. social gaming, gaming for sustainable urban development, performative gaming and e-sports. The programme should also support the development of skills in these areas by maximising existing research and related programmes from the UK. The programme should support UK producers in these areas and related universities and institutions to work in China, with the benefit of the programme sustainable and mutual to both countries.*

11.6 Develop a research and development programme that supports the rapid-scaling up of talent and skills development across the creative industries in China and the UK

China and the UK have ambitious targets for the growth of their respective creative industries and both countries acknowledge skills shortages as the biggest barrier to growth. If growth targets are to be realised, talent and skills will need to be effectively developed.

Talent shortages coupled with the increasing impact of automation on all industries make talent development across the spectrum of creative skills critical to the economic success of both countries. Many creative skills are recognised as applicable across sectors within the creative industries and across other industries.

The UK has a comparatively long and successful track record of developing creative industry-related skills and professional development programmes both in higher-level education and in the private sectors.

Many UK universities have already developed campuses and academic programmes in China to support the development of talent in China. Many UK universities also already have a high contingent of Chinese students in their programmes in the UK.

There is much to be mutually understood about how the respective industries could be optimised for the purposes of developing talent. There are also alternative and innovative ways to optimise and scale the development of the next generation of talent.

Recommendation: *A research and development programme that supports the rapid-scaling up of talent and skills development across the creative industries in China and the UK should be developed. The programme should explore how existing research and institutions can be harnessed to accelerate the development and supply of talent in both countries. A consortium and cluster-based approach would unlock value across the industry and across institutions. It is important that any talent development programme focuses on skills that are applicable across sectors, can feed multiple industries and are future-proof, such as design; interactive design and story design; animation and SFX; video games design and related computer engineering. The programme should be deployable quickly and at scale, sustainable and beneficial to both countries.*

11.7 Develop a programme that enables existing UK-related immersive technologies and experiences to cooperate collectively with a relevant consortium of Chinese partners

Immersive experiences, associated technologies (e.g. headsets, handsets, performance capture, 4D cinema) and associated sectors (e.g. performing arts, gaming, theme parks) have been identified as an area of strategic importance for both the UK and China. Both countries are committed to developing this area of industry through R&D, investment and policy support.

Unlike other areas and sectors within the creative industries, immersive experiences and technologies are at a relatively nascent stage of development. Technologies and standards are changing rapidly, non-linear storytelling techniques are evolving and business models remain uncertain.

This area draws on skills and talent from across the creative industries, and immersive experience formats and technologies are typically applicable across multiple industries.

For the purposes of accelerating the development of immersive technologies, the UK has recently provided significant funding for the establishment of several related industry clusters. This includes a National Centre of Excellence in Immersive Storytelling to develop training and research programmes in immersive storytelling. The UK has also invested in a parallel programme called *Audiences of the Future* with an aim to accelerating the development of immersive technologies.

China is the world's largest investor in VR and related technology, with the majority of that investment in hardware. Immersive technologies provide a means to scale access to culture and creative content for the largest audience in the world. The Chinese and Shanghai governments have identified immersive technologies and experiences as a potential means of providing cultural experiences to mass audiences in public spaces. The rapid growth in the leisure and cultural tourism sectors is driving the consumption of innovative technology-enabled experiences, e.g. theme parks, and as part of 'spectacular' performances and installations. Yet there remains a shortage in China of immersive experiences and producers with the capacity to satisfy demand.

Recommendation: *A programme that enables existing UK-based immersive technologies and immersive experiences-related resources and capacities to cooperate collectively with a relevant consortium of Chinese partners should be developed. The programme should be compatible with the objectives of the UK's existing Audiences of the Future initiative and relevant industry clusters. The programme should streamline access to the Chinese market for existing audience-ready experiences available in the UK and those experiences that are borne out of the UK's cluster programme and Audiences of the Future initiative. The programme should support existing research and skills in the UK to be applied in China to develop new audience-ready experiences appropriate to the fast-changing demands of this new market. The programme will require sustained on-the-ground support in China with the right infrastructure and a consortium of appropriate partners. The programme should focus on areas where there are identified complimentary gaps in research, technology and audience-ready experiences. The programme should ensure that existing IP and any IP developed as a result of the programme is appropriately protected and shared amongst programme partners.*

11.8 Develop a research and development programme that supports the discovery and sharing of creative content-related data and copyright information between China and the UK

China and the UK have different IP and copyright regimes. Facilitating the registration, discovery and licensing of IP and copyright is fundamental to the development of the creative industries and for cross-border protection and trade.

Following a major crackdown on piracy in China in recent times, there has been a major increase in the number of cross-border licencing and publication deals between Chinese content platforms and foreign publishers. Piracy however remains an international problem and finding copyright information pertaining to overseas content remains a problem for platform owners and copyright users in China.

In China, formal registration of copyright is important for protection, i.e. to support take-down notices and as a means of 'proof' of ownership. Yet, registering copyright is difficult for foreign copyright-holders in China.

In addition, upfront content licencing deals for content platforms can be prohibitively expensive, hampering the development of potential new business models for creators and copyright holders.

Recommendation: *A research and development programme that supports the discovery and sharing of creative content-related data and copyright information between China and the UK should be developed. The programme should explore how to optimise and harmonise Chinese and UK copyright and content data and infrastructure, including streamlining the process of copyright registration for UK copyright holders in China. The programme should consider what potential new business models could be developed if content and copyright data was more easily available between the two countries and the likely positive impact on piracy. The programme should make best use of existing appropriate research and available services and technology in both countries.*

12 Further Considerations

There are many economic, academic and social reasons for China and the UK to cooperate and successful cooperation will stem from a new level of understanding between the two countries. However, considering logistical, cultural and structural differences, the nature of cooperation between the two countries is different to what the UK might experience when cooperating with another country. In addition to language barriers and time differences, Chinese business and research culture and practices are very different to that of the UK.

In addition to the recommendations presented in Section 11, this section provides additional considerations to the AHRC and other stakeholders for the purposes of supporting the proposed funding programme. The considerations provided in this section cut across all areas of interest and are designed to support the partners to maximise the opportunities and the impact from a research and development programme, and to sustain the benefit from that programme. These considerations reflect our experience of working in China, the barriers to collaboration presented throughout this report as well as discussions between stakeholders during the November workshop.

12.1 Provide a shared on-the ground expert project and partnership liaison service

The success of the proposed collaborative funding programme will rely on productive, trusting and sustainable partnerships. Successfully working in China is typically contingent on maintaining face-to-face relationships and good 'guanxi.'¹³⁰

Sourcing and carrying out due diligence on potential project partners in China can be difficult and time consuming. In consideration of language differences and an apparent lack of transparent public business information services, sourcing relevant information pertaining to individuals, companies and institutions is complicated.

It is particularly complicated within the creative industries as they span a wide and varied number of disciplines across technology, culture, design and art, and include specific laws and regulations for each sector and sub-sector. Indeed, the role of culture in China has a specific and unique political and social context.

Manging and sustaining a relationship once the right partner has been identified is also difficult. The nuances of negotiation, project management and business culture can appear obscure without prior experience of working in China. This is in addition to language differences and different communication practices.

Consideration: *To support UK stakeholders source, evaluate, manage and sustain Chinese partners, the AHRC should consider providing a shared on-the ground expert project and partnership liaison service for relevant stakeholders. The liaison service would support the entire funding programme, sourcing and providing due diligence on potential partners, and helping to maintain partnerships once a project has commenced. The liaison would also help the AHRC navigate the commercial and academic landscape, providing expert creative industries advice and support throughout the funding programme. To best support the programme, the liaison service would require knowledge and experience of both the UK and Chinese contexts.*

12.2 Maximise the use of available industry park and cluster infrastructure in China

It is reported that there is over 100km² of industry parks and clusters in Shanghai, spanning many different sectors and areas of industry, including the creative industries. Industry parks and clusters in China are typically focused on a specific area of industry, for example film and TV, bio technology or fashion. These spaces and places are often supported by local government and industry and can include university partners.

¹³⁰ <http://www.worldlearnerchinese.com/content/what-guanxi>

Access and use of these places are sometimes incentivised with low or zero rental costs for preferred tenants and businesses. Indeed, local government can provide monetary incentives to businesses, local and foreign, to establish a presence.

The objective for these places is to encourage and accelerate the development of specific industries and sectors in line with government policy and market demands. To do so, operators and developers also attempt to provide the most appropriate services and facilities to a specific industry, i.e. laboratories for bio-tech; screening rooms and studios for film and TV; textile facilities for fashion.

Considering the number and variety of industry parks and clusters, associated policies, language and communication barriers, foreign businesses find it difficult to understand how best to access and utilise these places and any associated incentives.

Consideration: *The AHRC with Chinese partners should maximise the use of the available industry park and cluster infrastructure in China and Shanghai across the funding programme where appropriate. A matching exercise of existing industry parks and clusters appropriate to each area of the funding programme would be beneficial. Enabling access to the most appropriate industry parks and clusters for UK businesses and researchers could ensure access to appropriate relevant services and facilities.*

12.3 Include an ongoing evaluation process

The overarching objective for the proposed funding programme is to support and scale-up China and the UK creative industries collaboration. While the funding committed to the programme for this purpose is significant, the success of the programme will not be determined by the availability of funds but through the development of effective research and development collaborations.

This document outlines existing barriers to collaboration between China and the UK and respective industry development challenges. Successful collaborations will be determined by, and should be driven by, a desire to mutually overcome these barriers and in response to these development challenges.

There are many reasons why effective research and development collaborations between Chinese and UK partners is difficult to achieve; expectations of success and what determines success can be different, expectations for impact and the scale of that impact can be different and understanding how success can be achieved through failure can be different. However, the process of collaboration and understanding what makes an effective collaboration is important and would benefit future collaboration.

Consideration: *The proposed funding programme should include an ongoing evaluation process. The evaluation should include appropriate measures of success and quality that are reflective of the two countries. The evaluation should account for and allow time for projects to mature, while accounting for the rapid pace of change and the changing nature of the creative industries in both countries. The evaluation should reflect likely different expectations and likely differences in measures of success on both sides. The evaluation should also capture and measure where the benefit to collaboration is likely to accrue and the likely longer-term impact and sustainability of collaborations.*

12.4 Explore the different cultures of innovation in the two countries

The culture of innovation in China and UK is considerably different, and the two countries have different approaches to research and development for the purposes of supporting innovation.

China's approach to innovation is typically top-down and systemic, with government policy providing strong direction to industry and academia on the areas where innovation should happen. For example, China has very clear policies directed at industry and academia for the purpose of developing China's AI industry.

UK government has similar industry guidance and strategies; however, innovation is typically understood as driven by the market and by individuals, with government incentivising through funding and supporting policies.

China's economic model supports the existence of large state-owned enterprises (SOEs) with SOEs playing an important role in the development of innovation through research and development, acquisitions and investment in new businesses.

In addition, China's rapid economic development has led to a culture where the design and development of new products and services happens more quickly than would be expected in the UK. This is known as China Speed¹³¹, where the agile model of development is adopted by default.

These different approaches to innovation provide interesting and potentially fruitful opportunities to combine and explore.

Consideration: *The proposed research and development programme should explore, as part of each area of activity, the different cultures and approaches to innovation. The programme should also reflect how the process of innovation is often determined by national government policy in China, so any research and development should be in line with and supported by government policy. The funding programme should ensure that there is appropriate Chinese local government and SOE support for each area that the programme intends to explore. The programme should also account for the expected pace of development in both countries and how they are likely to differ.*

12.5 Leverage private sector financing in both China and the UK

Shanghai is the capital of China's financial services. Investment in creative and IP-based products and services has become more popular in China in recent times as the country transitions from a manufacturing-based economy to a knowledge-based economy.

The UK has a track record of investing in and developing innovative forms of financial products for the purposes of leveraging, developing and scaling creative products and services. The UK government provides tax relief schemes for investors to boost entrepreneurship and to help small start-up companies to raise equity finance. Indeed, there is a suite of tax relief schemes specific to the creative industries in the UK that is encouraging investment in creative businesses and original creative IP, e.g. film, animation, video games.

There are significant regulatory and economic barriers for Chinese investors who wish to invest in foreign businesses, and vice-versa. The Chinese government has tight restrictions on outbound investment. Recently, this has included restrictions on outbound investment in 'sensitive areas', including cinemas, entertainment and news media.

The Chinese government also tightly controls foreign culture and creative industry businesses that wish to operate independently in China. Foreign businesses in certain 'cultural' sectors require local joint venture partners and government approval before they can operate in China. Policies that restrict and permit foreign companies to work in China vary across different provinces, cities and city districts.

¹³¹ <https://www.theverge.com/2017/5/30/15710524/china-speed-smartphone-hardware-oem-arm>

However, if a programme of research and development is to be sustained and to effectively produce products and services that are market-ready, private sector support and potential investment is important.

Consideration: *The proposed funding programme should explore how to leverage private sector financing in both China and the UK to support research and development in both countries. This should include exploring the role of and benefit to academia in that process. The programme should consider how private sector financing, in line with regulatory developments, should be structured and sustained for the proposed programme and for the sustained long-term mutual benefit of both countries. This should also include how existing and new IP is protected and leveraged.*

13 About the Authors

BOP Consulting is an international research and strategy firm specialising in culture and the creative industries. We combine top-class research and analytical skills with an in-depth knowledge of the creative economy. We work with national and city governments, support agencies and cultural and creative businesses - we know how to use public and private resources to create supportive environments for the sector. Many of our projects result in published work, which is of the highest editorial quality and effectively targeted at policy-making and/or business audiences.

Our China operation was established in 2013 and focuses on supporting international businesses and governments to grow their cultural and creative activities in China. We understand both the political context and practical realities of doing business in China.

Through our work in China, we provide the following support and services:

- Inward Trade Promotion Strategies for Culture and Creative Industries in China: we advise government agencies on how to best drive growth in exports and trade with China.
- Market intelligence: we provide on-the-ground, contextual and expert intelligence on the culture and creative industries in China, specifically in the following sectors and sub-sectors: visual arts and heritage, live entertainment, film and video, IP and licensing.
- Practical Market Entry Advice for Cultural and Creative Businesses: we work with commercial clients to localise their products for China, find the right partners and navigate local policies, regulations and customs.

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