



THE UK VIDEO GAMES SECTOR

a blueprint for growth



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FOREWORD

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The games sector is a highly dynamic, global success story. This report by Olsberg SPI presents how, why and where there is success, from the sector's 1980s birth in the UK to its ever-evolving nature today, and the creative, innovative experiences being developed and published by large, small, micro, independent and individual businesses – and, more importantly, why the UK should be leading the world in games right now.

The fastest, biggest-selling entertainment product of all time is made in Scotland. We believe many more of the almost 2,000 games and interactive entertainment companies in the UK have the opportunity to have similar success stories. Digital tools, technology, distribution and creative passion have made our sector what it is today.

However, the games industry is still young and needs nurturing. If it is to continue to punch above its weight, creating more jobs and more economic returns, we need action. This report makes five recommendations to government:

1. UK and EU funding to fully and equitably recognise the contribution of games, ensuring effective support alongside other creative industries
2. Support regional growth, FDI and exports across the UK
3. Grow, attract and retain the best talent
4. Create the best tax environment and digital marketplace to do business worldwide
5. Promote games-as-culture and celebrate cutting-edge UK innovation

These interventions will create more economic returns and a more resilient foundation that will nourish start-ups so that they can flourish and – most significantly – will enrich our everyday cultural life, inspire new ways of understanding the world around us, or simply provide hours of entertainment.

With their unique fusion of arts, creativity, passion, technology and fresh thinking, we believe games – making them, publishing them, playing them, servicing them, producing and reflecting culture through them – are the blueprint for the sort of creative, innovative economy our future and present citizens deserve.

THE UK VIDEO GAMES SECTOR

a blueprint for growth

EXECUTIVE SUMMARY

The UK Games industry blends the best of British creativity with leading technology, creating successful games exported around the world. The sector is a major generator of intellectual property and a leading example of the UK's growing reputation as a home for the creative, high-tech, knowledge-intensive companies that the country needs to succeed in the 21st century. By any measure, the industry is now one of the UK's major creative sectors, a source of economic growth and a mainstream part of British culture.

This independent report will show how the UK games industry has grown since the 1980s into a cultural and creative colossus. It will also demonstrate how the sector leverages this creativity through innovative, fast-evolving business models which are leading the way in digital exploitation of creative Intellectual Property (IP). It will suggest how support for the industry can be unified and magnified by a set of government and industry interventions which when combined will boost growth, investment and high-quality, high-productivity jobs across the country.

With the global games market expected to expand by 7.9% annually over the next five years – adding to the 1.6 billion people currently playing games, as well as the 1,000s making, selling and servicing them – the opportunity is enormous. Given the ambition of, for example, Video Games Tax Relief (VGTR), the UK is in prime position to benefit significantly from this. The VGTR policy aims to encourage British innovation and video games businesses in the UK; delivering on those ambitions by ensuring the UK remains a competitive and attractive place to create video games could see turnover increasing 51%.

However, there are some market failures the sector faces which threaten the global competitiveness and standing of the industry, as well as its potential to spill over and transfer knowledge, skills and innovation to other creative digital sectors. There is a major opportunity to improve this if the government builds on the strong basis which the VGTR intends.



The research

This research, **commissioned by video games trade body Ukie and conducted by Olsberg SPI**, was carried out in the second quarter of 2015. It is based on a series of confidential consultations with more than 40 stakeholders from across industry and government. In addition, it consists of a literature review of more than 60 reports, evaluations, and policy proposal documents from recent years, relating both to the UK and to the global games industry.

Games are now as much a part of our cultural conversation as film, music and TV.

Video games – a global economic and cultural success story

Games are global

There are currently an estimated **1.6 billion people playing games worldwide**, a market which is only set to grow. On conservative projections, it is estimated that **the games market will reach £82 billion by 2020**.

Games mean choice

Video games offer an extremely **wide choice of content across a large range of devices, platforms and products**. Games are played by **21 million people in the UK** – 44% of games players are female and 22% in the 45-64 age group.

Games are more than ‘just entertainment’

Games are beginning to reach beyond leisure into education and healthcare to provide wider social impacts and technology spill overs.

Games are the future

The scale of opportunities for both the creative and tech sectors as a result of new technologies is enormous – Artificial Intelligence Data Science, emerging Virtual Reality and Augmented Reality products are expected to be high value growth markets in games and also apply to other sectors. Globally the markets for eSports and games video content are also growing.

Games are mainstream culture

Games are now part of the UK’s cultural conversation. Games are cultural artefacts in their own right as well as spaces where new cultural experiences and value are produced.

The fast evolving UK sector

Games are growing

The UK is home to nearly 2000 games firms ranging from new micro-studios developing games for the burgeoning mobile market, to internationally respected independent studios, to large UK and international publishers. **Sixty-four percent of all registered games companies in the UK were incorporated in the last five years**, supercharged by the smartphone revolution.

21st Century Skills - STEAM

Games require a blend of Science, Technology, Engineering, Art and Maths to maintain its competitive position globally.

Games mean jobs across the country

Games companies generate high-quality, high-productivity jobs, with an average GVA per worker in 2014 of £68,250. These jobs are increasingly spread across the UK, with 12 established and six emerging games clusters across the country. The UK now boasts the highest number of mobile games jobs in the EU, with 5000 full-time employees.

Games tax relief means business

The VGTR is a major boon for the UK games sector. In the first half of 2015, a total of 89 games received interim and final certification, with a total budget of £348.9 million.

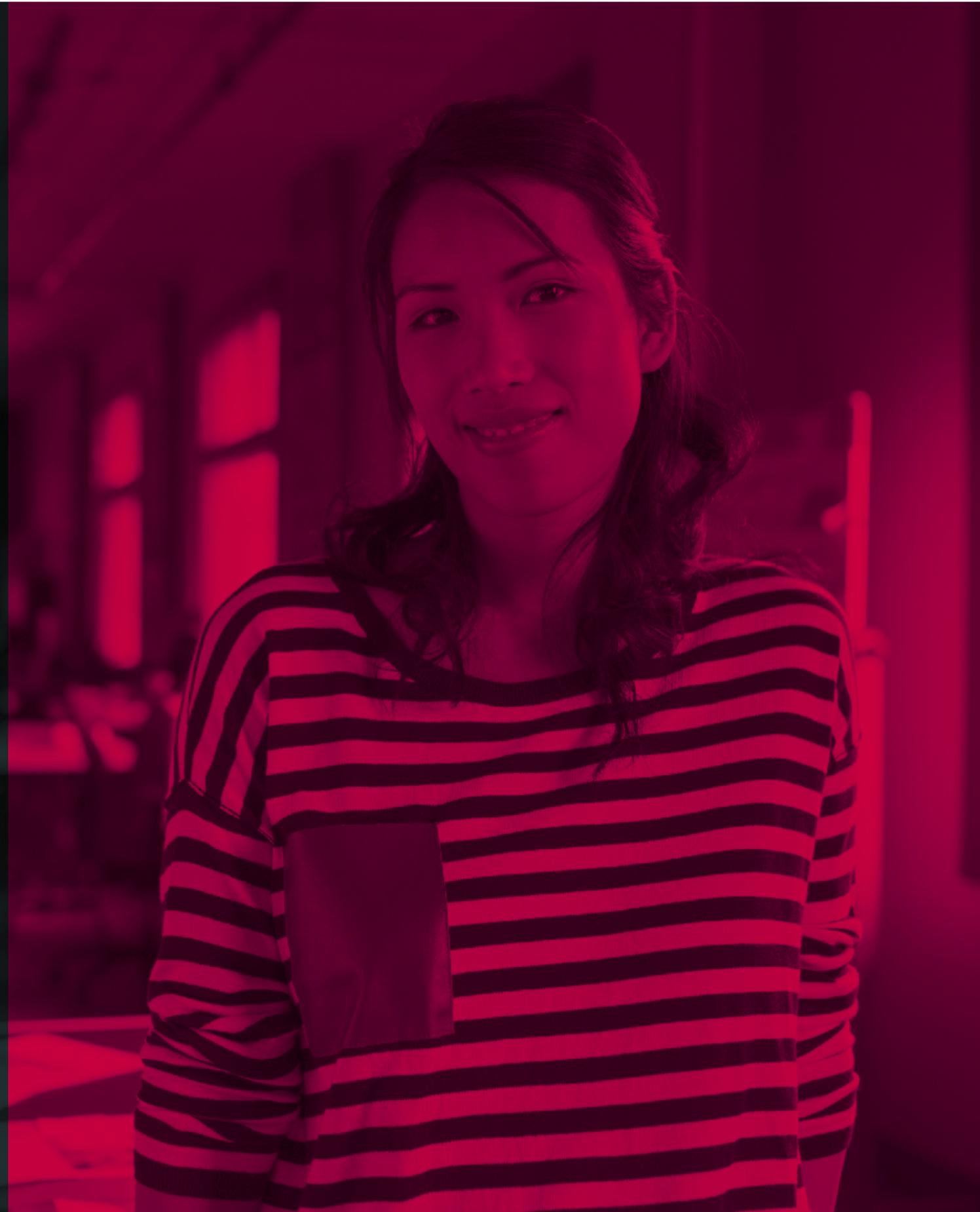
Growing domestic consumer market

The UK is the sixth largest games market in the world.



Getting the support right

- Games are a relatively new creative industry, and despite progress over the last Parliament, public funding for the sector is still poorly understood, coordinated and designed. This inhibits further investment, growth and exports in one of the UK's fastest growing export sectors.
- 95% of UK games businesses are Small and Medium-sized Enterprises (SMEs), with 64% of these being first registered in the last five years – further resources are needed to scale these businesses up and continue to develop supportive clusters outside of London.
- The 'war for talent' remains a major challenge and the UK requires skills development from school age onwards. Failure to recruit and retain the best talent can lead to investment locating elsewhere.
- Since 2008 the games industries of Canada, South Korea and the Nordic countries have grown fast – clusters in these countries all benefit from consistent support and incentives from their national and regional governments.
- The games sector relies on innovation and creativity – policy should encourage more risk-taking to help the UK to continue to create cutting-edge world class interactive entertainment.



The solution

The extra support recommended in this report would result in an extra **£1 billion in annual turnover from the sector by 2020.**

This extra support is required across the following broad areas:

- a. **better promotion and coordination** as evidenced in other creative industries;
- b. **support for regional growth**;
- c. developing and attracting the best **talent**;
- d. the best **competitive tax and regulatory climate**;
- e. better **recognition of its economic and cultural value and innovation**

Introduction of the policies in this report would also open the way to **increased innovation with other screen industries** in which the games industry is uniquely positioned.

This would in turn generate a mixture of **soft power benefits, export sales, and high-quality, high-productivity jobs** and opportunities for all across the UK.

UK and EU funding to fully and equitably recognise the contribution of games, ensuring effective support alongside other creative industries

| | Department |
|---|-----------------------------------|
| Ensure all relevant public agencies have a clear mandate to support games, new talent and new ideas from the sector. | DCMS, BIS, public spending bodies |
| Bring existing agencies together to identify additional investment for games sector skills over the period of the next spending review. Explore case for a games-specific funding settlement. | DCMS, BIS, public agencies |
| The UK should work with the European Commission to help Creative Europe recognise games' cultural role, and reform an outdated approach to funding. | DCMS, BIS, EC |
| UK Government to lead calls for reform of SIC system at UN and EU level to ensure new industries such as games are accurately measured. | BIS |

Support regional growth, FDI and exports across the UK

| | Department |
|---|-----------------|
| Drive regional economic growth by developing local plans for scaling-up existing games clusters. | BIS, DCMS, LEPs |
| Ensure that high-speed broadband needs are met in games and digital economy clusters by 2020. | BIS, DCMS |
| Officially benchmark national and regional growth in markets, international audiences, Foreign Direct Investment (FDI) and exports. | BIS |
| Launch an outcomes-based review of trade and investment support for the games sector, considering if there is a more efficient model for the implementation of current funding. | BIS |

Create the very best tax environment and digital marketplace to do business worldwide

| | Department |
|---|---------------|
| The VGTR has been a welcome boon for the UK games sector, the government should make sure it remains attractive and competitive. | HMT, DCMS |
| HM Treasury should also build on the Institute of Directors' recent report on SEIS and EIS, reforming the vehicle to make it more appropriate for the games sector as well as for other SMEs. | HMT |
| The UK should take an active role in negotiations across the Digital Single Market portfolio to champion the digital creative industries in which it leads the continent. The strong, competitive market that already exists for games across the EU must be protected against unintended consequences from reforms to consumer law, copyright, geo-blocking and other areas. | BIS, DCMS, EC |

Grow, attract and retain the best talent

| | Department |
|---|---------------------|
| Support STEAM education in schools, recognising the importance of Art as an essential discipline at GCSE, not just for the Creative Sectors, but for other high-productivity industries including design and engineering. | Industry, DfE |
| Fund early intervention in schools in games clusters through 12 Digital Schoolhouse hubs. | Industry, DfE, LEPs |
| Work with employers to ensure apprenticeship levy funding is appropriate for SMEs and fund Next Gen Skills Academy Higher Apprenticeships by and for games employers. | Industry, BIS, DCMS |
| The Skills Investment Fund (SIF) is working to support the industry talent, SIF or an alternative should be supported over the course of the next spending review. | DCMS |
| Carefully consider plans regarding Tier 2 visas, avoiding the implementation of new barriers for recruiting overseas talent. Ensure SMEs and start-ups are not disadvantaged by the new system. | BIS, Home Office |

Promote games-as-culture and celebrate cutting-edge UK innovation

| | Department |
|---|----------------------------------|
| Examine how innovation incentives can be used in emerging High-Value Opportunities like virtual reality or eSports, to allow the UK to capture the financial and cultural benefits these will generate. | BIS, DCMS |
| Hold Games Innovation Showcases across the country, demonstrating non-games applications of games tech to kick-start innovation and cross-sectoral communication. | DCMS, Regional Creative Agencies |
| Create a single UK Games Archive, drawing together the various existing projects into a coherent whole. This UK Games Archive should be linked to the BBC's proposed Ideas Service. | Industry, BBC |

THE UK GAMES SECTOR

a major part of economy and culture

Since the early 1980s the UK games sector has undergone phenomenal and rapid growth, exploding from programmer beginnings to become a major force in the global games market. With £3.9bn consumer revenues in 2014, the UK is estimated to be the sixth largest market, after the US, China, Japan, South Korea and Germany.^{1,2} While current projections predict that China will overtake the US in revenues this year, they also show the UK will retain its market position in 2018.³

The games industry is expected to be one of the fastest growing segments of the global media and entertainment sector over the next five years. Annual global revenues from games (excluding sales of game consoles and other equipment) are forecast to grow from £54.3 billion in 2014 to £73.6 billion in 2018⁴ – an annualised growth rate of 7.9%. Even if annual growth slowed to half that rate by 2020, the global games sector would be worth an estimated £82 billion by 2020.

The UK's success is underlined by the fact a British-made game – *Grand Theft Auto V* – is the fastest and biggest-selling entertainment product of all time. Following its release in September 2013, this game generated an unprecedented US\$1 billion (£640m) of sales within three days; by May 2015, it had sold more than 52 million copies worldwide.⁵ There are currently an estimated 1.6 billion people playing games worldwide, a market which is only set to grow.⁶

This traditional strength in games has been supercharged since the turn of the decade. 64% of all registered games companies in the UK were incorporated in the last five years, representing an annual growth rate of 23%.⁷ But they are vulnerable in a highly competitive global digital market.

¹ MCV and Ukie, Industry Valuation 2014.

² Newzoo, *Top 100 countries by games revenues, 2015*.

³ CGA and Newzoo: US & China Battle for #1, *World's Top Games Markets, Casual Games Sector Report 2015*.

⁴ Newzoo, 2014.

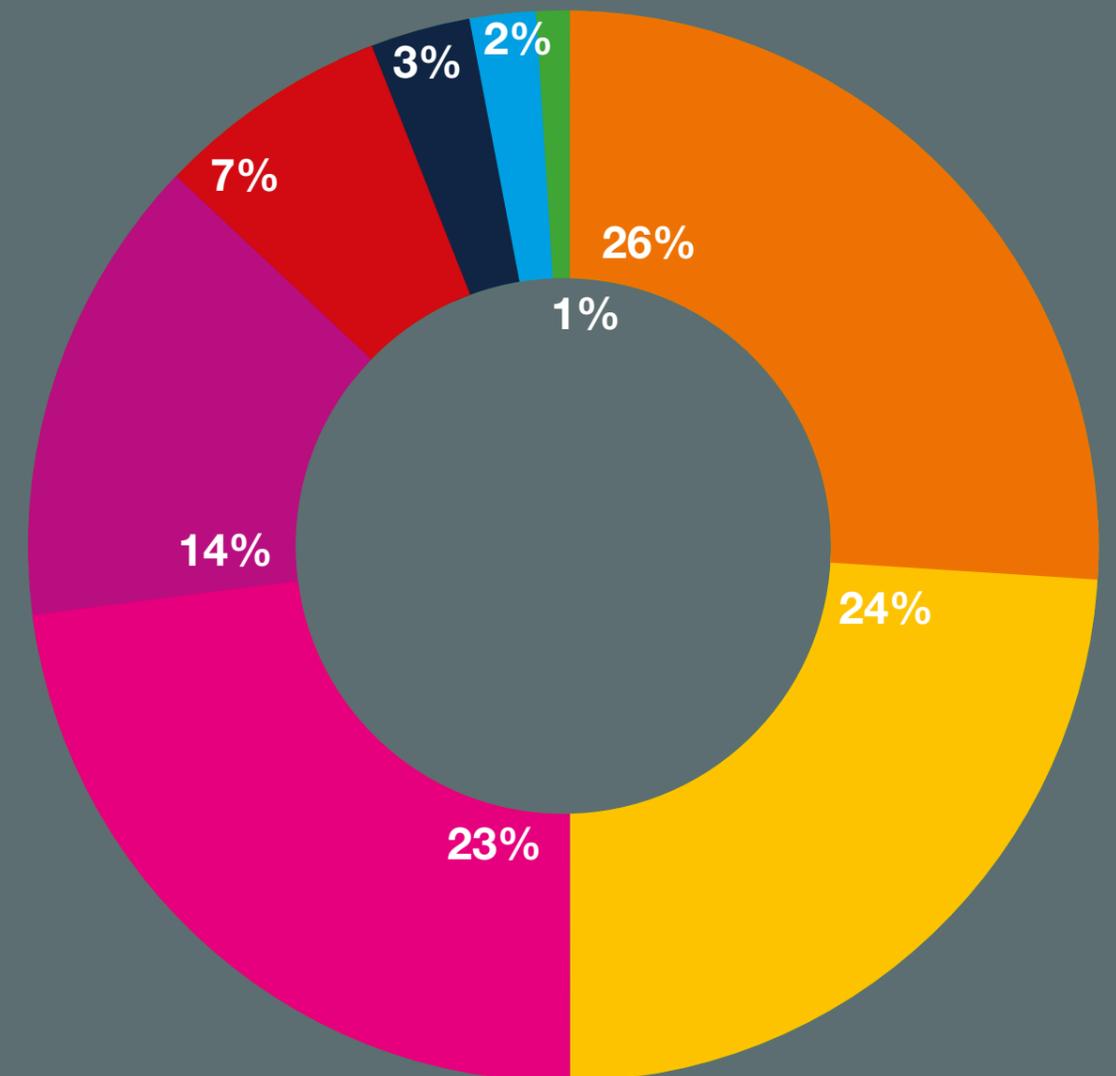
⁵ Guinness, *Guinness World Records 2014*.

⁶ Newzoo, *Global Games Market Report 2015*.

⁷ Nesta, *A Map of the UK Games Industry*, September 2014.

UK consumer market 2014

- Digital console and PC
- Boxed software
- Console hardware
- Mobile gaming
- Peripherals and accessories
- Pre-owned software
- Toys
- Books and magazines



Spending on game software in the UK (excluding spending on equipment) rose by **8.2%** to over **£2.6 billion** last year.⁸ Overall, the sector provided annual investment of **£503 million** and employed **13,700 creative staff** last year, an increase of **9.8%** from 2013.⁹

Market penetration

For the UK public games offer a huge array of experiences: from easy to pick up snackable games through to immersive, creative worlds and complex sports simulations across dedicated consoles, smart TVs, computers, tablets, mobiles and emerging platforms, such as virtual reality.

With such choice it is unsurprising that games players are drawn from a remarkably diverse demographic spectrum, challenging commonly held perceptions of a predominantly teenage customer base.

While a quarter of all UK players are 15-34 year old males, **43%** of games players are female and **22%** are in the 45-64 age group.

Video games are clearly an integral part of childhood – the age bracket with most players is the **6-10 year old group**, where **83%** play video games.

Games were played by **20 million people** (in Q1, 2015) in the UK, with **43%** of the population consuming an estimated total of **170 million hours** of games content per week.¹⁰

⁸ MCV and Ukie Industry Valuation 2014 and 2013

⁹ TIGA, *Making Games in the UK Today*, 2015.

¹⁰ ISFE/Ipsos MediaCT, *GameTrack - Q1, 2015*.

¹¹ Nesta, 2014.

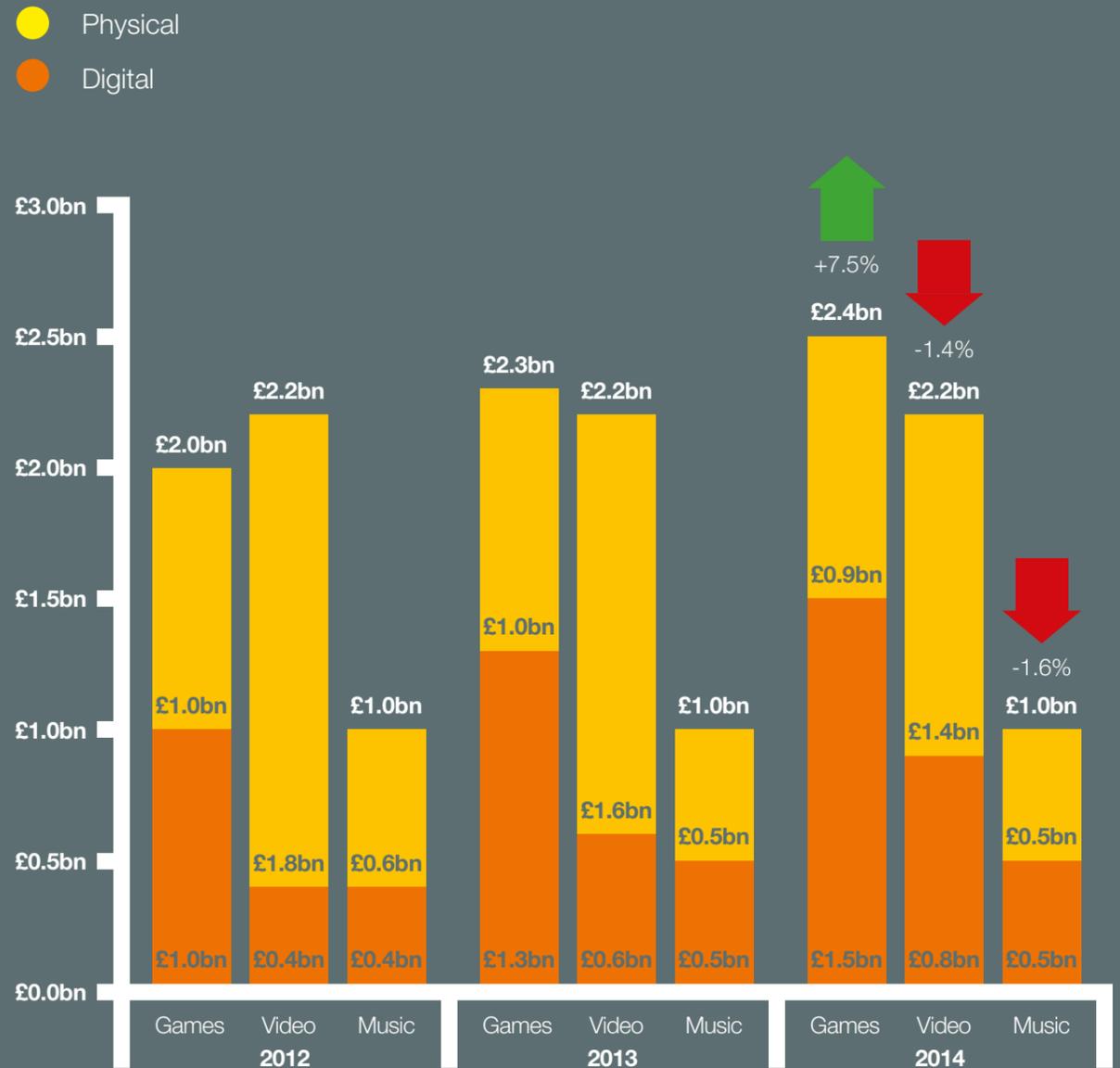
Total UK games companies by year, 1985 to 2013¹¹

● Cumulative
● New companies



In 2013 games overtook video in entertainment sales. Games are now the largest retail entertainment market in the UK, representing 43% revenues of the combined market in 2014. The segment grew by 7.5% while video and music decreased.¹² This sales growth has been generated over an increasingly complex range of products and platforms, and has transitioned from boxed physical to digital products, as well as a blend of both.

Sales of games, video and music in the UK, 2012-2014¹³



¹² Entertainment Retailers Association, Yearbook 2015.

¹³ Entertainment Retailers Association, Yearbook 2014.

The UK games sector is always innovating

At the heart of the success of the sector is its constant innovation. Ground-breaking video games such as the *Batman Arkham* trilogy, *DJ Hero*, *Elite*, *Fable*, *Goldeneye*, the *Grand Theft Auto* series, *Guitar Hero Live*, *LittleBigPlanet*, *Monument Valley*, *Moshi Monsters*, *Populous*, *RuneScape*, *Tearaway*, *Thomas was Alone*, *Tomb Raider*, *Until Dawn* and *Worms* are the brainchildren of UK developers.

UK games designers have created **new genres**, from massively multiplayer online games to artificial life games, **inspiring new industries** and the next generation of developers.

UK also **leads in the development of other genres**, including real-time strategy, racing and role-playing games.

The game-playing experience is also being augmented by **increasingly sophisticated use of Artificial Intelligence (AI)** and Big Data to constantly improve gameplay, feedback, and interactivity.

There have also been significant advances in how games are sold in the UK and across the globe. Today consumers benefit from **22 digital games services** (including mobile, social and cloud) in the UK, giving a huge range of choice.

Overall UK games market value:

£3.944bn¹⁴

£1.048bn

Digital Console and PC

Up 17.6%

(Revised 2013: £891m)

Source: IHS

£915m

Console Hardware

Up 46.2%

(2013: £626m)

Source: GfK Chart-Track

£288m

Peripherals and Accessories

Up 4.3%

(2013: £276m)

Source: GfK Chart-Track

£106.8m

Pre-owned Software

Up 10.7%

(Revised 2013: £96.4m)

Source: Kantar Worldpanel

£23m

Books and Magazines

Up 77%

(2013: £13m)

Source: Nielsen and Industry Estimates

Boxed Software

Down 6.3%

(2013: £998m)

Source: GfK Chart-Track

£935m

£548m

Mobile Gaming

Up 21.2%

(Revised 2013: £452m)

Source: IHS

Toys

Down 14%

(2013: £80m)

Source: NPD

£69m

£5.5m

Events

Up 96.4%

(2013: £2.8m)

Source: MCV Estimates

Movies and Soundtracks

Down 21.7%

(2013: £6.9m)

Source: Official Charts

£5.4m

¹⁴ MCV and Ukie, Industry valuation 2014.

The UK games sector grows with every new innovation, with expansion over the last 5 years supercharged by the evolution of mobile gaming and new business models.

The UK now boasts the highest number of mobile games jobs in the EU, with 5000 full-time employees in Britain. The freemium or in-game purchasing model has allowed for experimentation at no cost to the consumer, building ever bigger audiences - 21m European players downloaded a freemium game in April-May 2015.¹⁵

The majority of these consumers enjoy all their games at no cost: one of the market leading companies found that only 4% of their monthly unique users made in-app purchases.¹⁶ With a thirst for even bigger audiences and markets, European developers generate more than two thirds of their revenues outside of the EU in the USA, China and Japan. Last year six out of 10 apps in the iOS and Google Play stores were made by companies headquartered in Europe.

The UK also has a world-class reputation for its robust, advanced middleware and other technologies and techniques, such as motion capture and motion controls. In addition to the talent brought to the industry by an international workforce, games companies boast internal research and development programmes that ensure technological excellence that is transferable to other sectors. The games sector has also been at the forefront of the developments in data sciences and cloud-based applications, which are often leveraged to break ground in other high-impact sectors.

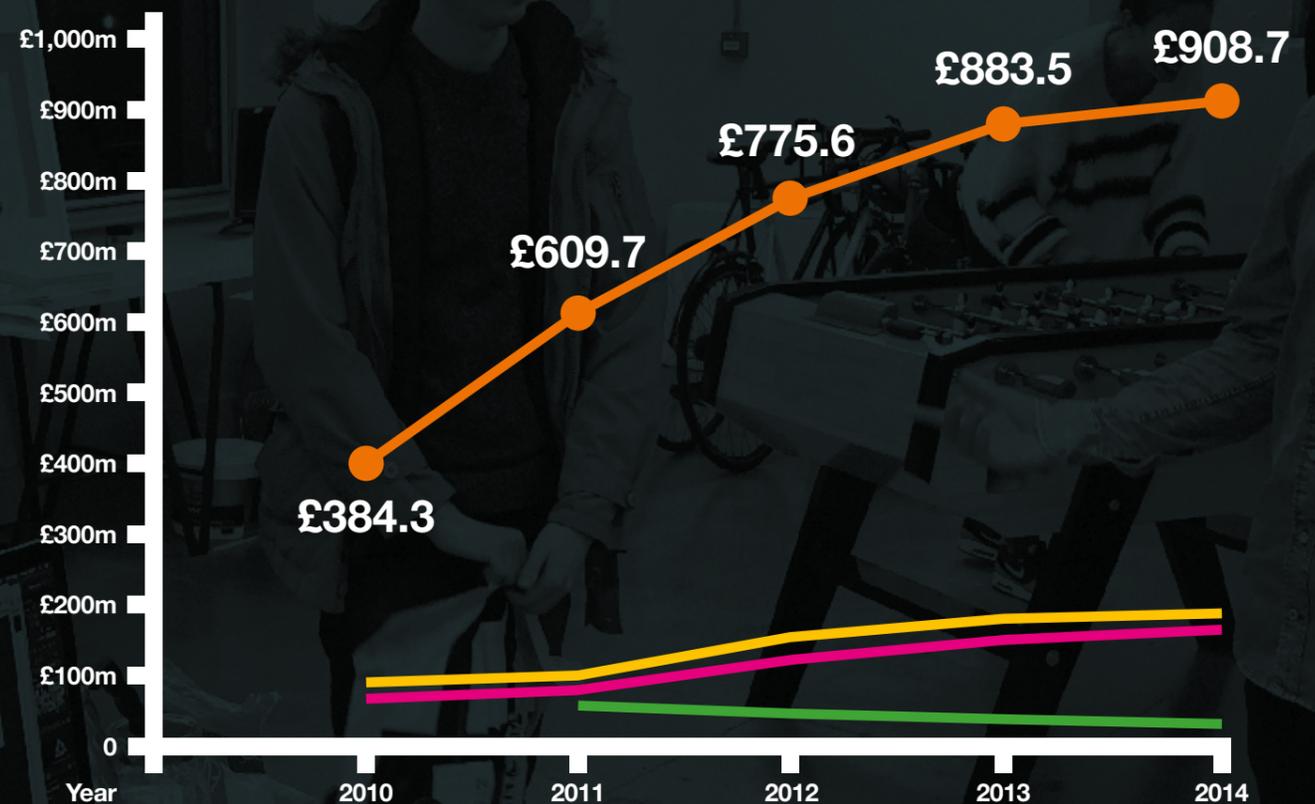
¹⁵ Deloitte *Mobile games in Europe - Innovation in European Digital Economy 2015*.

¹⁶ *ibid.* The average expenditure of paying users across the market is £3/month.

¹⁷ SuperData Research digital revenues.

UK digital revenues: microtransactions dominate as revenue stream¹⁷

- Microtransactions revenue
- Full game revenue
- Additional content revenue
- Subscription revenue



Games clusters in the UK

The games sector creates jobs and opportunities across the country. Overall there are nearly 2000 video game companies in the UK, of which 95% are micro or small businesses.¹⁸ Among the 18 areas with a critical mass of more than 20 games companies, 12 have been identified as having the highest levels of games concentration (by employment or company number): Brighton, Cambridge, Cardiff, Guildford and Aldershot, Edinburgh, Dundee, Liverpool, London, Manchester, Oxford, Sheffield and Rotherham, and Warwick and Stratford-upon-Avon. While there is a strong concentration of games in London and the South East, the Midlands, North of England and Scotland have a higher presence of video games companies than other creative industries,¹⁹ with 70.2% of games companies based outside London.²⁰



Nesta's 2014 analysis showed that there are significant levels of co-location between games and other creative sectors, making it clear that the sector has become an integral part of the UK's wider creative economy



A map of the UK games industry²¹



¹⁸ Nesta, 2014.

¹⁹ Ibid.

²⁰ Nesta, 2014.

²¹ Nesta, 2014.

Companies by region and nation

The UK is a leading investment destination for overseas games companies.

Recent examples of overseas investment include Warner Bros' acquisition of *Rocksteady* (the developers of the *Batman Arkham* series) and *TT Games* (who developed the *LEGO* series).

The UK is also home to the European head offices of several international games publishers such as *Konami*, *Microsoft* and *Rockstar (Take Two)* – as well as *Sony PlayStation*.

Consultations suggest that these firms are typically located in the UK to take advantage of the large local market for games combined with Britain's access to the Single Market. Other attractors include the presence of an established advertising sector in the UK, and the UK's generally supportive business climate. It remains the case that the UK faces stiff competition from start-up friendly locations such as Berlin, Scandinavia and North America for a variety of reasons.

The local support offered by Local Enterprise Partnerships (LEPs) and councils - often crucial in these competitor markets - can however be varied and hard to access for many micro studios in particular.

Distribution of video games companies by region/nation (percentage of total)²²



²² Nesta, 2014.

Talent

UK games firms employ a highly skilled workforce that possesses leading technical and creative expertise.

According to Creative Skillset, 86% of games sector workers possess at least a degree: this compares to 32% for the whole UK population. Additionally 27% possess a post-graduate qualification.²³ Employment costs account for over 75% of the games development sector's GVA.²⁴

In labour productivity, games is second only to the television programming and broadcast sector;²⁵ in 2013, GVA per worker in the games sector was £63,910. This figure was approximately £9,000 higher than the third highest industry, sound recording and music publishing, and more than double many other creative industries, such as film production and distribution, performing arts, and design.²⁶

This workforce is a benefit not only to games companies, but to other sectors of the UK economy that rely on technical and creative talent to drive innovation. Workers in this sector are increasingly sought-after by other games companies in the UK and abroad, representing a 'war for talent'. Development and therefore studio investment decisions are made on where the best talent and teams are, which makes the recruitment and retention of the best a top priority. Increasingly other sectors, including fintech, and other territories such as North America are providing a harder 'pull' for the best staff.

²³ Creative Skillset, Workforce Survey, 2015.

²⁴ ONS (2014), "Annual Business Survey – 2013 Provisional Results: Standard Extracts", 13 November 2014. Data for SIC 62.01/1 Ready-made interactive leisure and entertainment software development has been used as a proxy for the whole game development sector.

²⁵ Olsberg•SPI analysis of *Creative Industries Economic Estimates 2014*.

²⁶ Olsberg•SPI analysis of *Creative Industries Economic Estimates 2014*.

²⁷ Olsberg•SPI estimates.

Preliminary estimates of the economic contribution of the games sector value chain in the UK, 2014 (2013 figures in parentheses)²⁷

Development[†]

10,300 FTEs
(9,400 FTEs)

GVA: £700m
(£639m)

Publishing^{††}

3,400 FTEs
(3,100 FTEs)

GVA: £235m
(£211m)

Retail^{†††}

5,100 FTEs
(6,000 FTEs)

GVA: £151m
(£177m)

18,800 FTEs (18,500 FTEs)

GVA: £1,085m (£1,027m)

[†] Source: TIGA and Games Investor Consulting

^{††} Assumes a growth rate of 10% in accordance with growth in the development sub-sector

^{†††} Includes physical boxed software, digital console and PC mobile gaming, and sales of pre-owned software

Games as culture

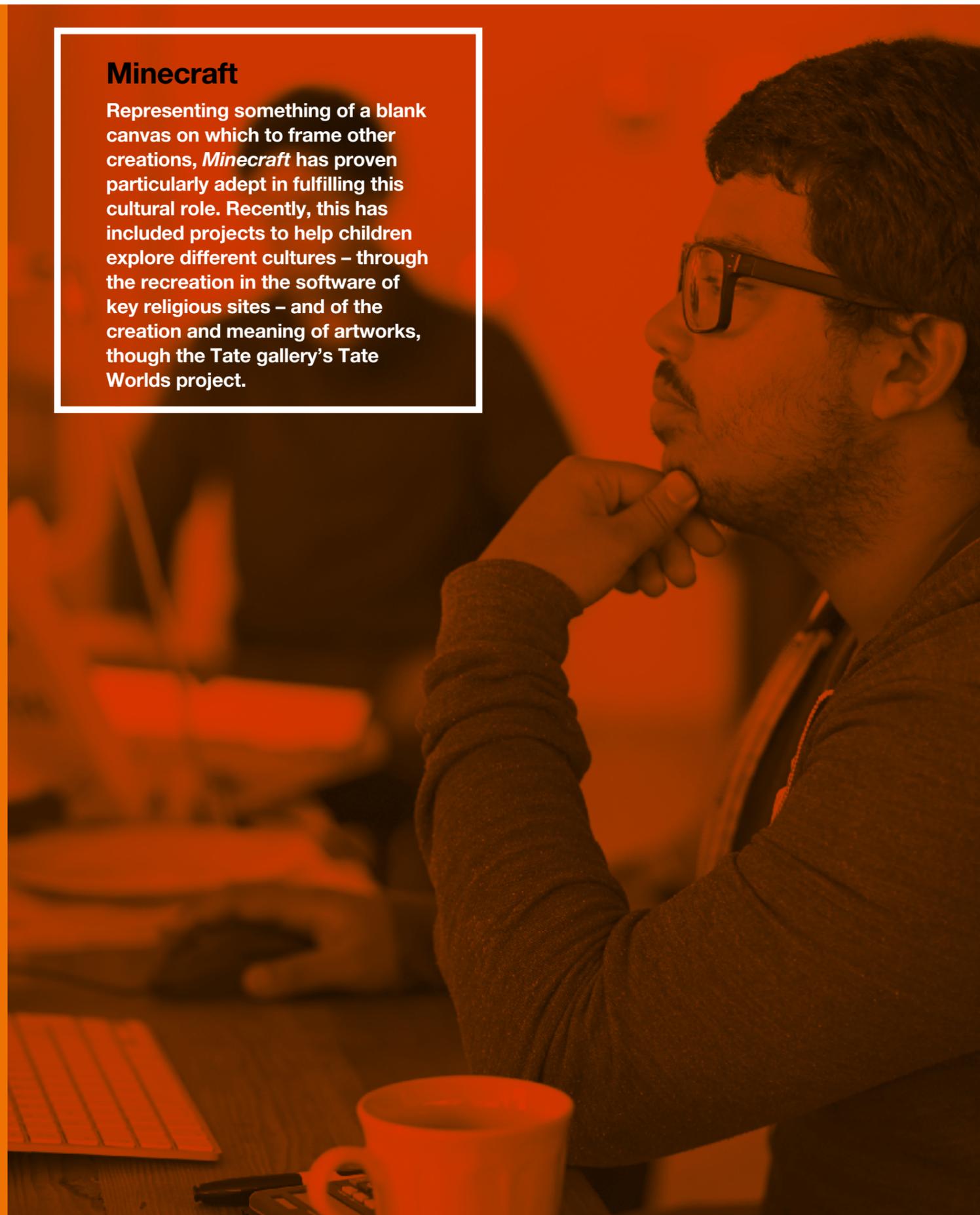
In addition to their own inherent cultural and artistic value, games are also a part of the broader national (and international) cultural conversation. Indeed, some games have gone beyond being cultural artefacts, becoming platforms and communities where new cultural content is created.

In 2008, the National Media Museum (Bradford), Bath Spa University and Nottingham Trent University joined forces to create the National Videogame Archive. This was followed in March 2015 by the launch of the National Videogame Arcade.

Modelled on the BFI, the National Videogame Arcade is designed to give the general public a deeper understanding and appreciation of games through an assortment of education programmes, an in-house archive and research tools, and public events. The British Library has also begun the process of archiving videogame websites to preserve gaming culture for future generations.

Minecraft

Representing something of a blank canvas on which to frame other creations, *Minecraft* has proven particularly adept in fulfilling this cultural role. Recently, this has included projects to help children explore different cultures – through the recreation in the software of key religious sites – and of the creation and meaning of artworks, though the Tate gallery's Tate Worlds project.



Social impact

As the UK games industry has grown it has established its own corporate social responsibility and charitable initiatives. The games industry charity GamesAid maintains a £1.7m fund to invest in charitable projects for disadvantaged children. The War Child initiative for Syrian refugees *HELP: Real War is Not a Game*, to be released on Steam in 2016, is a collection of digital games developed at the UK's top studios and represents a transition from the eponymous charity music compilation album 20 years ago to today's 'game album'. Participating studios include *A Brave Plan*, *Bossa Studios*, *Carbon Games*, *Curve Digital*, *Hardlight*, *Sports Interactive*, and *Torn Banner*. *Special Effect*, based in Oxfordshire, uses interactive technology to enhance the quality of life of people with all kinds of physical disability needs, including stroke and road traffic accident patients, individuals with life-limiting conditions and injured soldiers returning from overseas.

Other initiatives, such as the *Video Games Ambassadors*, part of the STEMnet Ambassadors network, pitch games professionals into schools and key consumer events across the country to talk about careers.

Education and games development as life skills

Games companies are at the forefront of edtech innovation in the classroom. British interactive learning software is distributed around the world, and the UK showcase event at BETT. Key examples include *Moshi Monsters*, a globally successful online game made by British entertainment company *Mind Candy*, and games made by *Yellow House English*, which help teach English as a foreign language to very young children. Indeed, with guidance, most mainstream games can be used for learning purposes in the classroom. The skills in developing games are also a fusion between team work, art, design, engineering, science and programming.

The Next Gen. report in 2011 identified a major deficit in the UK education system, which was failing to adequately train the next generation of talent for a truly creative, diverse digital economy, and worked with the government to develop the new Computing curriculum in 2014.²⁸ Games companies work directly in schools with start-ups such as *Code Kingdoms* and projects like *Digital Schoolhouse*, mapping games products to the new curriculum, and working with digital learning initiatives to develop new teacher pedagogy.

Case-study: Digital Schoolhouse London programme

The *Digital Schoolhouse* model, funded by the Mayor of London and Ukie, addresses teacher subject specialism shortages with the new computing curriculum introduced in 2014. It currently works with games companies, schools and universities to develop programming and computational thinking into computing lessons using a Science, Technology, Engineering, Arts and Maths (STEAM) approach. Over 2014-15 5,576 primary school pupils participated and 600 teachers were supported through 192 enrichment days using materials mapped to the new curriculum. Teachers were trained in new subject knowledge and pedagogy by Queen Mary University of London and Kings College, London.

Partnerships have been established with games industry partners such as *Disney*, *Kuato Studios*, *Playniac*, *Code Kingdoms* and *Video Games Ambassadors* to use games products to explain computing concepts in new ways. Specific work with edtech firms such as *3Doodler*, *Apps for Good*, *Cannybots* and *Tech Will Save Us* is allowing the development of new technologies and methodologies within education, such as: using embedding 3D technologies; using Arduino's and Raspberry Pi's; and exploring cross-collaboration between them.

²⁸ Nesta, *Next Gen. Transforming the UK into the world's leading talent hub for the video games and visual effects industries*, 2011.

The consumer is central

As an industry so dependent on a dynamic and constant relationship with customers, the UK and European video games industries have developed practices and policies which have precluded the necessity of regulations which are seen in other entertainment industries. The Pan-European Games Information (PEGI) ratings system is an example of this, with the sector having developed a model for age classification of video games which is much clearer and more detailed than its film or TV equivalent. This model works on a pan-European approach, ensuring comparability between products from one country to the next. It also led on the development of technical parental controls on games devices to make it easier to protect minors.

The sector has also worked with authorities at the national and European level in areas such as consumer protection and child safety. In all such areas, industry action innovated in advance of government intervention, with the sector either working with the authorities or operating on its own initiative, to the benefit of the consumer. This industry-led development has now been adopted globally, with IARC becoming a one-stop ratings shop which has been adopted into stores such as Google Play.

“
Games have made the transition to digital very well, and other sectors look to games as being more comfortable in the digital era

Fiona Clark-Hackston,
BSAC

Future trends – VR, eSports and game content

While the growth potential of emerging technologies are, by their nature, unknowable, the current opportunities in Virtual Reality and Augmented Reality are vast if they are embraced by the mainstream customer.

Oculus Rift is one of many virtual reality headsets in an increasingly competitive market. VR and AR are going to be powerful drivers in PC and console growth, requiring better hardware to deliver new experiences. Digi-Capital has forecast that augmented and virtual reality will be worth £97 billion globally by 2020, with AR predicted to reach 4 times what VR will. The creation of games entails the development of software and hardware technologies that can be applied in other fields – from medicine through design and education. Many of the recent advances in virtual reality and motion control technologies have originated in the games sector.

Meanwhile, the demand from games players to celebrate games as part of their everyday culture is increasing. The way audiences engage with games, their makers, and other players is evolving, with eSports (tournaments played by teams of professional highly trained ‘cyberathletes’) being a fast-emerging trend, having already become mainstream in countries such as Germany, South Korea and the USA. This is exemplified by the recent International DOTA 2 Championships, which were held over six days in a 17,000-seat arena in Seattle, for which tickets sold out within five minutes of going on sale, with a record-breaking prize pot, mostly crowdfunded. More than 20-million viewers watched the tournament online and thousands more filled the Seattle Center. In 2013 the US began granting visas to eSports players, just as they do professional athletes.²⁹

The demand for games video content is growing rapidly in popularity through platforms such as Twitch and YouTube. The global games video content market is worth £2.5bn in 2015. The majority of the revenue is located in North America (39%, £963m) and Europe (30%, £737m) mainly advertising revenue and sponsorship and from direct sources like paid subscriptions.³⁰

²⁹ The Daily Dot, First ‘Star Craft 2’ player officially recognised as an athlete by U.S. government, 11 Dec. 2013.

³⁰ SuperData Research, July 2015.

Existing government interventions

With this story of UK and global growth the games industry is currently supported by two specific initiatives as well as a range of other measures designed to support the creative and tech sectors generally. This backing is important not least due to the existence of incentives, public support and/or tax breaks in competitor countries such as USA, Canada, Germany, South Korea and Japan.

The primary mechanism is the VGTR introduced in 2014 enabling companies to be eligible for a payable tax credit worth 25% of qualifying development costs. VGTR builds on the successful model of the film tax relief which can be claimed on production expenditure in the UK, and the new High-End TV and animation tax reliefs.

The first year of its operation saw positive impacts, with the sector seeing over 4% growth in high-productivity development jobs during 2014, contributing to an overall 5.6% increase to £1.1 billion in GVA. The first year certification numbers compare favourably to the anticipated number of projects when the relief was announced.³¹

³¹ The pre-incentive projection anticipated £10m incentive spend in the first year and £35m in the second, but did not convert this into an anticipated number of projects.

Many advances in games hardware and software that could benefit other sectors of the UK's knowledge-based economy can only come through experimentation. In a globally competitive sector such as the games sector, small games companies have very few resources available to devote to such experimentation, let alone to complex funding application processes. Smaller scale but active intervention to stimulate start-ups is available through the newly-extended Prototype Fund, which provides grants of up to £25,000 for small companies for the development of games or other forms of interactive digital content. The Prototype Fund goes some way to making experimentation more viable for small companies, and initial evidence suggests that it is having success in helping companies develop technologies, content and IP for use outside their original games-based application.

The original Abertay University-based programme gave finance and business development support to over 70 of the UK's game development companies between 2010 and 2014, with nearly 400 applications assessed along the way. Many of those supported were in the start-up / micro studio category vital to building the critical mass needed to create original games IP in the UK. The Video Games Prototype Fund has been renewed with a £4m investment announced in the July 2015 Budget, following a track record of significant additionality in the pilot programme.

Games companies also benefit from a range of measures open to other tech and creative sectors, ranging from R&D credits and Enterprise Investment Scheme (EIS) through to Skills Investment Fund (SIF) support. However, in comparison the relatively recent growth of the games sector has meant that public interventions to support the industry lag behind other industries, particularly film, and consultees noted that these do not address specific market failures identified by the industry.

In the first half of 2015, a total of 89 games received tax relief certification - 40 final certification and 49 interim certification, meaning the games have not yet been completed. Between them, these 89 games have a total budget of £346.8 million, of which £290 million is being spent in the UK or EEA.

Market failures

This research has identified a range of market failures which affect the UK games sector; these primarily fall into five categories: **Externalities, Asymmetric Information, Coordination Failure, Additionality, and Equity**. These broadly correlate with the Green Book categories of market failure, allowing government intervention.

Externalities occur when market value does not fully reflect the benefits or costs that a good generates for society, resulting in over – or under-supply. In the games sector, these include a variety of issues, such as the supply of culturally relevant games, experimentation and technology spill overs, skilled labour, and archival assets.

Like other forms of media, games provide their creators with a way of making a cultural contribution, though there has historically been an under-supply of culturally British games. Spill overs, meanwhile, occur when software or hardware benefits enter other sectors, generating wider and transferable benefits, which the games sector has particular strengths in.

Skilled labour is a particular challenge for games, given that development requires a highly-skilled labour force, and tends to be labour-intensive. The games sector has a mobile labour force as their skills are in high demand in other sectors and internationally – this tends to result in a shortfall. Finally, archival assets act to preserve British culture, making knowledge available for the development of future games, providing an option for future usage, and preserving a store of value for future generations.

Markets operate most efficiently when buyers and sellers have equal levels of information. **Asymmetric information** therefore leads to inefficient allocation of resources in the economy. In the games sector, this has led to financing challenges, as investors struggle to properly analyse risk in a business or project plan. This represents a mixture of the talent-driven nature of games companies – which increases risk – financiers' lack of knowledge of the sector, and games' companies creative focus, which can often lead to challenges in communicating with the financial community.

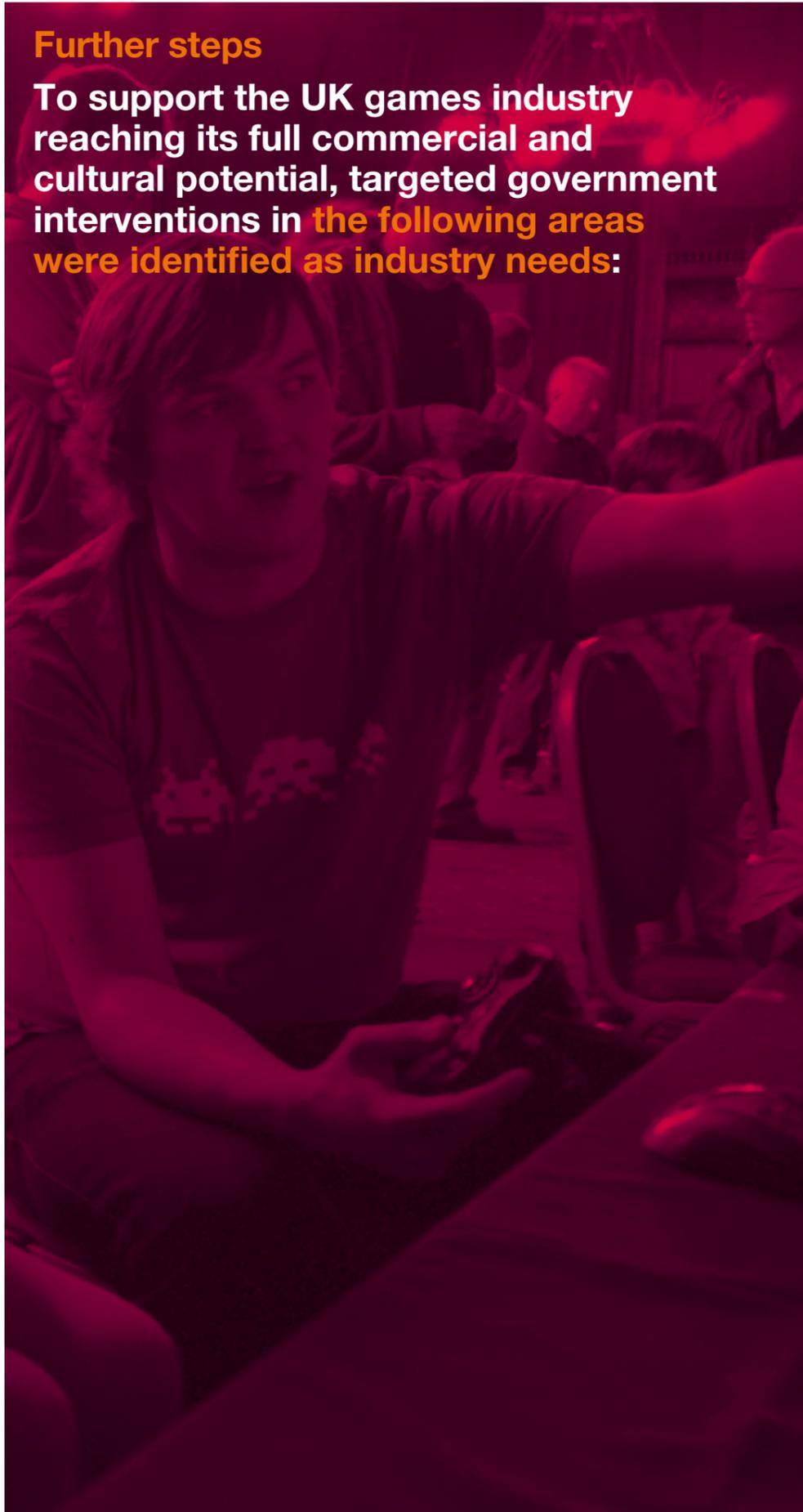
Coordination failure refers to a situation where a lack of coordinated decision-making amongst economic actors – including firms – means that the level of output diverges from the socially optimal level. Within the games sector, coordinated industry development – the ways in which firms access knowledge, talent, finance and consumers – is the biggest challenge. In other, similar sectors, this is solved through mechanisms such as trade shows, arranged by an impartial coordinating body.

Additionality is not traditionally a market failure, but offers a rationale for intervention where any economic activity generated is additional, and not merely displaced from another part of the UK. This is of particular interest when we note that in recent years many British games entrepreneurs and highly experienced creative leaders have left for other jurisdictions, such as Canada, as these have offered a more competitive market. As the film industry shows though, increasing competitiveness can result in major boosts to inward investment. Export benefits through supporting access to markets such as China – improving the UK's balance of payments position – can also be generated.

Though also not a traditional market failure, **equity** also presents a basis for government intervention, fixing inequalities across the population which are inconsistent with government policy or the preferences of society. Gender, diversity, and disability are particular issues in many creative industries, and form a key reason for intervention.⁰⁰ Similarly, regional equity – ensuring the redistribution of economic growth outside London and the South East – and intergenerational equity – ensuring well-paying jobs for young people from all backgrounds – are of particular importance.

Further steps

To support the UK games industry reaching its full commercial and cultural potential, targeted government interventions in the following areas were identified as industry needs:



1. Better promotion and coordination

knowledge, talent, financing and access to markets can all be pooled between companies to shared benefit. Models for this exist in other creative and technology industries.

2. Regional growth

thanks to the strongly regional nature of the games industry, further growth is likely to address the government's concerns over regional equity. It will also produce a high proportion of graduate jobs and skilled apprenticeships across the country.

3. Talent

as a high-knowledge, high-creativity industry, recruiting and retaining the best talent is fundamental. Continuing talent shortages are having an impact on current and potential growth.

4. Regulation and incentives should support 'additionality'

the global nature of the games industry means that intervention to support growth will most likely generate additional economic activity, rather than take from elsewhere in the economy, through exports, inward investment, and repatriation of UK-bred games companies. Conversely new requirements which increase regulatory burdens on the creative and tech sectors could restrict growth and additionality.

5. Recognition

understanding the potential for growth in new technologies will accelerate the commercial growth of domestic companies and increase the likelihood of spill overs. Greater contribution of games to British culture will support long-term talent development as well as a range of new opportunities for the sector as a whole.

The games industry today is represented to government more effectively than it ever has been before primarily through the Creative Industries Council and its work on access to finance, IP, skills, infrastructure and international trade. However, the following five recommendations and actions for government, public agencies and industry will significantly boost the industry in its ambitions to grow even faster and be even more competitive internationally.

RECOMMENDATIONS

“
We will look at the wider support for games as an important part of British culture, including the role of the BFI, the Arts Council, Creative England and other bodies

Ed Vaizey,
 Develop:Brighton
 speech 2015”



Recommendation 1

UK and EU funding to recognise the contribution and modern nature of games, ensuring effective support alongside other creative industries

With the VGTR now in place the UK government will be keen to ensure that the new policy is as effective as possible.

An important element of this is the availability and design of public funding support. Where support already exists for games our research identified a lack of coordination amongst agencies, coupled with low industry awareness of what is available. Consultees believe that reform and consolidation of funding is vital to unlock the full cultural and commercial benefits offered by the introduction of VGTR.

Support funding - the film model

National and regional bodies, led by the BFI, provide support to the film sector to tackle cultural and economic market failures through a diverse series of programmes. These include:

- BFI Film Fund (£26m) for development, production, distribution and export
- BFI support for film abroad (£1.5m)
- BFI/Creative England Film Business Support scheme (£2m) to improve growth and sustainability
- BFI Creative Clusters Challenge Fund (£250k) to strengthen regional hubs
- BFI support for production of micro-budget films, e.g. Triangle, iFeatures, and Microwave
- Creative England's Innovation and Creative Hubs - supporting regional development
- Ffilm Cymru development and production funding
- Wales Screen Commission and Welsh Government incentives
- NI Screen incentives
- Creative Scotland's new £1.75 million Production Growth Fund³²
- Screen Yorkshire's Yorkshire Content Fund - leveraged £30m investment with ERDF funding

The success of the UK film sector in attracting inward investment, growing domestic talent, and expanding its global cultural and economic reach, has been accelerated over the last decade by combining an effective tax relief system with this wider array of support functions. Consultees to this research felt that to see the full impact government intends from VGTR, equivalent support functions and funding, appropriate to the games industry should be put in place.

It is recommended that the games industry be given access to the same industrial and cultural funds – including National Lottery money – that other creative sectors receive. Funding to improve investor readiness and commercial management, support cultural production, improve access to markets, foster regional hubs, develop talent, grow awareness among investors, and other functions, will unlock the full long-term cultural and commercial potential of the UK games industry.

³² Creative Scotland, "Growing film and TV production in Scotland", retrieved from website 15 Oct. 2015.

This support would not only reflect the audience value of the games sector, but also be a foundation for the emergence of new products, innovation and culture. Of central importance is ensuring that existing agencies are clearly empowered to support games, invested in doing so, and their efforts coordinated. Government funding for this should be additional to existing funding for the creative sector.

ACTION: Ensure all relevant public agencies have a clear mandate to support games, new talent and new ideas from the sector.

While such support currently exists, in this research it proved impossible to determine the exact volume of funding to which games companies in the UK can have access. This reflects the plethora of small, disparate, and often badly-tailored funds to which games companies currently, in theory, have access to. This underlines the need for greater coordination as well as better data.

Working together

Many agencies are already experimenting with support for games. Arts Council England are opening some cultural funding to games. The British Council provide assistance to the UK's arts community through a range of projects and programmes, including showcasing the UK's artists and brands, building opportunities for collaboration and exchange, and supporting artists to visit other countries for research or development. They are actively looking into how this can be extended into the games sector.

An effective strategy will bring this existing work together and coordinate it to amplify its effects, ensuring also that application processes are streamlined. This will help identify where further interventions can have most impact, targeted to avoid duplication of effort. This would also significantly improve industry awareness and understanding of what is available.

By providing such support the full impact of VGTR can be unlocked, offering start-ups in particular opportunities to grow, learn and connect with wider networks, and emerging talent can be encouraged to stay in the UK. Initially, this model should be adopted through the opening-up of existing funding providers, though the impact and efficiencies of a games-specific Lottery and public funder should be investigated.

ACTION: Bring existing agencies together to identify additional investment for games sector over the period of the next spending review. Explore case for a games-specific funding settlement.

“
The 2014 Nesta map found that two thirds of UK games companies are not captured by official SIC codes.³³

”

European funding

European funding has also played an important support role for the creative industries. In particular, the MEDIA strand of Creative Europe offers funding to support distribution, audience development, access to new markets, cooperation projects, international coproduction, and support for festivals, amongst others. These totalled €27.9 million (£19.7m) in 2014, but have yet to be accessed sufficiently, if at all, by the games industry, and in many cases have clearly not been designed with the games industry in mind.

Rather than access to these broader funding streams, games companies have been restricted to a single production support fund with a total of €2.5m (£2m) across all member states - just 1.2% of Creative Europe's total annual budget. This fund is only open to an outdated notion of 'narrative' games - excluding a majority of innovative and culturally valuable European games.

Reforming these structures to make them comparable in scale and scope to those offered for other sectors, and more reflective of the true cultural nature of games, would be a major boon for the games sector in the UK and Europe, underpinning growth.

ACTION: The UK should work with the European Commission to help Creative Europe recognise games' cultural role, and reform an outdated approaches to funding.

Getting the data right

An accurate understanding of the current size and status of the industry is needed, so that progress against this report's proposals can be benchmarked. It is particularly crucial that the government's own estimates are dependable as they will be the basis on which policy decisions are made. This was demonstrated in Scotland, where a 2012 report valued the sector at zero, despite the presence of a key cluster in Dundee.³⁴

The official statistics do not properly represent the games industry. In particular, there is a weakness in the Standard Industrial Classification (SIC) code system. There are two codes representing the core of the games industry: one for games publishing and one for games development. The latter however is a sub-code, included within a general 'computer programming activities' code.³⁵

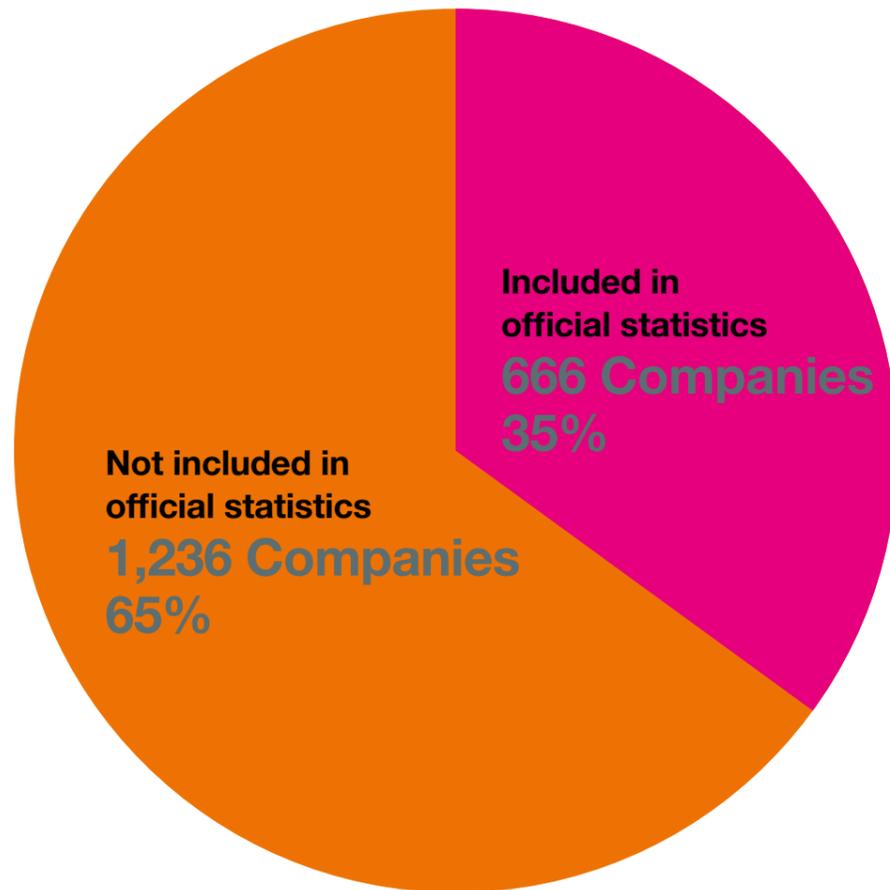
This makes it impossible to accurately measure the whole size of the industry, particularly with so many new companies forming in the tech sector. As a result, DCMS' annual economic estimates do not directly address the games industry. The two games SIC codes are included as part of the "IT, software and computer services" sub-sector, and games are only discussed directly in a separate annex.

³³ Nesta, 2014.

³⁴ DC Research, Economic Contribution Study, June 2012.

³⁵ This report presents the latest information available, including primary research from Olsberg+SPI.

Total games companies in the UK: 1,902



.....

The recent rapid growth in the games industry, particularly in new development studios, means that games development is now large enough to justify its own SIC code, allowing it to be properly estimated. This would further enable the proper measuring and reporting of the games industry as a whole. Such a change requires agreement at the international level, where the international SIC system is determined.

.....

ACTION: UK Government to lead calls for reform of SIC system at UN and EU level to ensure new industries such as games are accurately measured.

Recommendation 2

Support regional growth, FDI and exports across the UK

The UK games sector is developing across a number of geographically diverse creative clusters, with other clusters currently emerging. Indeed, there are other clusters still that have not been fully recognised by research that contain significant numbers of employees, if not large companies – such as Leeds.

These clusters offer a ready platform for further regional growth as power is devolved to the UK's nations and regions. Games companies offer a strong basis for regional growth given that they generate highly-skilled and high-productivity jobs. All of these should be able to attract investment, given the right assistance.

Regional growth and Foreign Direct Investment (FDI)

The wide regional distribution of these established and emerging games hubs suggests that the growth of the games sector can play an important role in the redistribution of employment and economic benefits outside of London and South East. Whitehall has looked to LEPs as one of its tools for addressing the issue of regional equity.

A number of regional bodies have adopted strategies to maximise the benefits of the games sector in their local areas. The London Enterprise Panel is funding the 2016 London Games Plan and has worked with the industry on computing education, digital skills and apprenticeships. Yorkshire's Game Republic is a good example of this, providing a range of networking opportunities for its members, whilst working to bring key sectoral players – including Apple and Sony – for meetings in the region. Meanwhile, Games Wales runs a successful local development show, which has supported the ongoing maintenance of the Welsh gaming community.

However, the funding of games companies through LEPs is not uniform across games clusters. There may be programme-design issues which make the types of funding available through LEPs ill-suited to games companies, thereby, resulting in underutilisation. Increased awareness of LEP funding would represent a first step in addressing this as would a LEP focus on the games sectors in the 12 clusters.

.....

ACTION: Drive regional economic growth by developing local strategies for scaling up existing games clusters.

“
Emerging findings in 2014 suggested that there is a link between games clustering, the quality of local broadband, and the depth of the local talent pool³⁶

”

³⁶ Nesta, 2014.

Broadband and connectivity

Several consultees reported that internet speeds and available bandwidth were a threat to the future growth of games businesses and even investment decisions. The Chancellor's Productivity Plan in July 2015 sets out a road map to support digital infrastructure, developing a series of measures to decrease red tape and cut costs for infrastructure providers. Progress is welcomed but the UK needs a more flexible system to enhance infrastructure investment decisions, especially in games clusters.

Experiments with ultra-high bandwidth (e.g., by Google in Kansas City, USA) suggest that there is a relationship between digital infrastructure and entrepreneurship. Nesta have proposed a new Demonstrator Fund to improve local innovation and competition.³⁷ The experience of initiatives like the £11.38 million Gigabit Bristol18 programme (grant funded by BDUK under the Super Connected Cities programme) and the £24 million Glasgow Future City programme (funded by Innovate UK) should be studied carefully.

For games business use in particular, upload speeds are as important as download speeds. Speeds impact both the ability of geographically dispersed teams to work on large files, and the ability to send data back from players to improve the game play experience. The UK should be prepared to support ultrafast roll out that reaches speeds beyond hundreds of megabits, and into the tens of gigabits, that are already being tentatively rolled out across the UK by new providers.

.....
ACTION: Ensure that high-speed broadband needs are met in games and digital economy clusters by 2020.

Co-working space

The development of more affordable office spaces is highly desirable for future growth of the sector, and should be part of broader regional growth strategies for the games sector, driven by new and existing devolved authorities, and supported by the LEPs. One such example is Court Street Creative Arches for new creative industries in Leamington Spa's growing cultural quarter, supported by Warwickshire County Council. It is recommended that all LEPs develop plans to support local growth in the games industry, building on their existing clusters to develop more highly-skilled, productive, and creative jobs.

Universities and games

LEPs will have a crucial role in linking together with start-up businesses to ensure the UK is able to leverage the inventiveness of its HE sector. Initiatives such as the DeMontfort University Innovation Centre in Leicester underline the role which academia should play in regional development. The Abertay Prototype Fund, which saw the Dundee-based university engage heavily with games SMEs, provides a further good example of this process in action.

“
A recent survey of Ukie members showed that over two-thirds of members generated more than 60% of their turnover outside the UK
 ”

Exports, inward investment and UKTI support

The global market for games was estimated at £54.3bn in 2014, and is forecast to reach £73.6bn in 2018, which represents an annualised growth rate of 7.9%.³⁸ The UK's legacy in games development is recognised around the world, giving us the potential to take a far larger share of this fast-growing market.

UKTI has recognised this opportunity by setting targets for growth in exports and inward investment in their *International Strategy for the Creative Industries*.³⁹ These targets apply to the games industry but a clearer, publicly-available plan is needed to make this happen. One of the key challenges to be addressed is around metrics and how digital exports are defined and therefore measured. Ukie is engaging closely in UKTI's continued work with the creative sector as a whole to help achieve this, but it is crucial that these broader conversations support the UK games sector's drive to export more.

Consultations conducted for this research have made clear there are frustrations with the current support offered. The tax relief continues to be poorly understood in other major games markets, alongside other misconceptions such as a belief that London prices for property and wages hold throughout the country. Funding such as Tradeshow Access Programme grants has been reduced, and overall there has been a lack of coordination of support for the games industry.

This coordination must be improved. The creation of a lead agency for games export and inward investment promotion, mirroring the success of 'We Are UK Film', should be investigated as part of a wider review of trade and investment support for the games industry. The starting point should be the accurate benchmarking of current performance, so that progress can be tracked.

.....
ACTION: Officially benchmark national and regional growth in markets, international audiences, FDI and exports.

.....
ACTION: Launch an outcomes-based review of trade and investment support for the games sector, considering if there is a more efficient model for the implementation of current funding.



³⁷ <http://www.nesta.org.uk/publications/ultra-fast-digital-infrastructure-uk-are-we-missing-trick>

³⁸ Newzoo, 2013.

³⁹ UKTI, "UK Creative Industries: International Strategy", June 2014.

Recommendation 3

Grow, attract, and retain the best talent

The future of the games sector is dependent on maintaining the flow of talent entering the industry. Rapid growth has meant that the industry has already absorbed this talent and the environment is extremely competitive as demand for skilled workers is driven up by other sectors. A long-term vision for games talent includes investment in computing and 'STEAM' (Science, Technology, Engineering, Arts, Maths) education, quality higher level apprenticeships and a flexible immigration system.

5-19 Education

Despite progress following the recommendations as noted by the Next Gen. report and associated campaign, there remain issues with primary, secondary and further education on pupil take up, schools preparedness and teacher training. The House of Lords report on Digital Skills noted one of the causes of the tech skills shortage is underinvestment in STEAM education at younger ages and lack of adequate teacher training in the new Computing curriculum.⁴⁰ It is also concerning that the number of female students taking computer science A Level continues to be the lowest of all STEAM subjects; this is reflective of broader issues relating to female participation, which affect the UK tech sector.

The UK needs to be given the strongest skills base for computer games in the world. For games, the integration of technology in art education is a priority, and there is industry concern about Art at GCSE and its status on the curriculum. Initiatives such as Nesta's Schools' Digital Pledge should therefore be supported to ensure that the curriculum brings together art, design, technology, and computing, so that young people are able to enjoy greater opportunities to work creatively with technology both in and out of school. The future strength of the UK games industry rests on the sector's ability to inspire, recruit, and promote people from diverse backgrounds.

ACTION: Support STEAM education in schools, recognising the importance of Art as an essential discipline at GCSE, not just for the creative sectors, but for other high-productivity industries including design and engineering.

Formal and informal education and digital learning initiatives such as Apps for Good and Code Club will help *Raspberry Pi*, *BBC Micro:bit* and other technologies into schools, developing programmes to ensure that pupils are able to use these in a variety of exciting and inventive ways. This includes ensuring the development of play-based pedagogy in classtime and technology-enhanced learning, of the kind now being developed in classrooms through the Digital Schoolhouse Programme.

ACTION: Fund early intervention in schools in games clusters through 12 Digital Schoolhouse hubs.

“
61% of Ukie's members currently have 25 or fewer employees, but 80% expect to grow in the next 18 months
”

Apprenticeships

Improving the number of apprenticeships in British industry is a top priority for the new government, which has set a demanding target of 3 million new apprenticeships over the next Parliament through a new levy - a mandatory payment by businesses into a common pot which is then used to pay for shared benefits, such as in-work training and apprenticeships.

The best way to enable the Government to reach its target would be to make the levy as flexible as possible. In particular, the design of the levy should incorporate the needs of the large numbers of SMEs in the games sector. It is recommended that the apprenticeship levy funding is used for developing new standards applicable to the games industry, so they can spend their digital vouchers as effectively as possible.

Games investment in apprenticeships has so far been focused on over-18 Higher Apprenticeships which will give young adults the skills they need to develop careers and businesses. The Next Gen Skills Academy has started the development of level 4 Higher Apprenticeships with their Games and VFX employer consortia of over - mainly SME - 100 employers. With older age groups, the Next Gen Skills Academy is also helping post-university students to become work ready with a 'finishing school', and working to develop CPD courses, as well as ways to get under-represented groups into the sector.

Continued government support to fund Next Gen Skills Academy (NGSA) Higher Apprenticeships will be important to ensure this vital development work for the future of the sector continues and the government target on apprenticeships is meaningful to the games industry.

ACTION: Work with employers to ensure apprenticeship levy funding is appropriate for SMEs and fund NGSA Higher Apprenticeships by and for games employers.

Ensuring the full benefits of this will also require continued investment in skills, which has proven highly successful in recent years. This is reflected in the games sectors' absorption of the vast majority of those who have passed through skills programmes, which consultees have advised has been a key factor in recent growth.

ACTION: The Skills Investment Fund is working to support the industry's growth track, and it or an alternative should be supported over the course of the next spending review.

⁴⁰ House of Lords Committee on Digital Skills, 2015.

Overseas talent

Though the domestic pipeline for talent has improved in recent years, it is not on its own sufficient to support ongoing growth; access to skilled workers from wherever sourced continues to be essential if the games sector's growth track is to be maintained. The first cohort began the new GCSE computing curriculum in September 2014. It will be at least 10 years – 2024 at the very earliest – before any of them enter the workforce in significant numbers. This includes the three years of in-work progression up the team-leading roles that companies most often seek to fill with workers on tier 2 visas. Without these positions, industry growth will stall.

It is very often the ability to hire experienced, highly skilled staff who can manage projects and teams that will determine whether a game can go ahead, and whether a studio can expand accordingly. Making it more difficult to find such people from outside the EEA does not mean that UK citizens will be hired instead. More often it means that the project simply will not happen in the UK, and the 10 or more UK citizens that would have found jobs in the team will not be hired as well.

In recognising the open, global nature of the games sector – and all the attendant benefits this brings for exports – it is strongly recommended that the government avoid putting heavy regulation on the bringing in of foreign talent to the games industry, without first ensuring that the domestic talent pipeline can support the needs of games companies.

.....
ACTION: Carefully consider plans regarding Tier 2 visas, avoiding the implementation of new barriers for recruiting overseas talent. Ensure SMEs and start-ups are not disadvantaged by the new system.



Recommendation 4

Create the very best tax environment and digital marketplace to do business worldwide

A stable regulatory environment is highly desirable for businesses across the UK, but is particularly important for the games industry given the highly mobile nature of global investment. Uncertainty on policy challenges inward investment decisions, with the EU's Digital Single Market agenda being a particular challenge – a clear policy direction will create confidence for companies to generate UK jobs. Meanwhile, ensuring that SEIS and EIS are accessible to fast-moving, innovative SMEs in the games sector will help these firms to access finance, growing companies and creating jobs in the various games hubs throughout the UK.

The UK competes not just with other countries but with regions and cities in other jurisdictions so further interventions to increase competitiveness as a location for games companies have the potential to repatriate these British-bred companies and talent. The government's moves to lower corporation tax are a positive step, as indeed they are for the British corporate sector as a whole. In association with the introduction of the VGTR, they provide an ever-more positive tax regime for the games sector, helping to reward British success, and attract further investment. This competitive advantage should be maintained.

Taxation and incentives

As noted earlier, the VGTR has been a major boon to the UK games sector, and although it has only been operational for a year, there are significant positive signs from the industry regarding the impact of this on growth. The incentive provides the underpinnings for sectoral growth on which this entire blueprint is built. As such, ensuring that the VGTR is maintained through EU State Aid renewal in 2017 is vital for the games industry.

.....
ACTION: The VGTR has been a welcome boon for the UK games sector, the government should make sure it remains attractive and competitive.

.....
 Other elements of taxation policy are currently working less optimally for the games sector, in particular EIS and SEIS, which should see significantly more use than they currently do. This reflects the low asset cap for SEIS investments and the three year holding periods required of either scheme. The existing financing support programs are considered to be better suited to financing companies rather than projects. As a result, the recommendations in the Institute of Directors' recent report, *Opening the equity economy* - that the two schemes should be substantially reviewed, realising their potential for a broader range of SMEs, including those in games – should be taken forward.

.....
ACTION: HM Treasury should also build on the Institute of Directors' recent report on SEIS and EIS, reforming the vehicle to make it more appropriate for the games sector as well as for other SMEs.

.....
 Like many of the technology industries, the games sector yields technology 'spill overs', which can benefit other sectors; these knowledge spill overs are encouraged in other sectors through the government's regime of R&D support.

As would be expected in a truly international sector, companies working in the games sector tend to have a relatively free choice in where to locate their operations, with macro-regulatory trends playing a large role in this decision. In recent years, many British-born and bred games entrepreneurs and talent have left the UK to operate in other jurisdictions, such as Canada, which offer competitive business incentives.



Digital Single Market

The potential to create a truly single market of 560 million customers is a prize worth having. At the European level there is a significant policy discussion surrounding the completion of the Digital Single Market (DSM).

Effective access to this huge market is an important objective for the UK and its digital creative industries, but there are also significant risks in this project. The UK has the strongest digital and creative industries in Europe in part because of its stable and supportive regulatory regime. Building on this strength, rather than making widespread changes that threaten existing success, must be the UK government's priority. Changes to copyright, consumer rights, and child protection regulations all have the potential to create significant unintended consequences for industries like games that already operate on a successful and responsible cross-border model.

There is already an effective single digital market for games across Europe under the existing framework: it is imperative both for consumers and the European games sector that changes aimed at other sectors do not put this progress into reverse.

ACTION: The UK should take an active role in negotiations across the Digital Single Market portfolio to champion the digital creative industries in which it leads the continent. The strong, competitive market that already exists for games across the EU must be protected against unintended consequences from reforms to consumer law, copyright, geo-blocking and other areas.



I curated Game On in 2002, the success of which demonstrated the high level of public interest in the creative culture of games, the exhibition has toured internationally ever since



**Conrad Bodman,
Head of International
Relationships:
Programme and
Archive, BFI**

Recommendation 5

Promote games-as-culture and celebrate cutting-edge British innovation

There exists a range of emerging technologies that will increasingly impact the sector – and others around it – which will become available to consumers and the industry over the course of this blueprint. These exist in parallel to trends in the games sector that are already impacting how the industry works.

Innovation

Virtual Reality technologies – exemplified by the forthcoming Oculus Rift, HTC Vive, and Sony's PlayStation VR – are a significant example of this. It is clear that not only will such technologies change the way games are played, but they will also impact on areas such as education, providing new ways to teach subjects including medicine and engineering. Ensuring that the UK gains the benefits of this will require close working between games companies – where much of the expertise to deploy such technologies lies – and academia.

The impact of other screen sectors on tourism is already well-known, and it is clear games is joining the more traditional industries in generating such beneficial outcomes where such eSports tournaments exist.

ACTION: Examine how innovation incentives can be used in emerging High-Value Opportunities like virtual reality or eSports, to allow the UK to capture the financial and cultural benefits these will generate.

Of course, it is not possible at this juncture to predict the impact that these technologies and trends will have on the UK sector, though it is clear that they will spur further economic development. As such, public bodies supporting the sector should continue to ensure their funding structures are available to companies working in these areas, maximising the chances of British firms leading the way in the exploitation of new technologies. In order to maximise these trends, though, Games Innovation Showcases should be used to link games into other sectors which can leverage the technology.

ACTION: Hold Games Innovation Showcases across the country, demonstrating non-games applications of games tech to kick-start innovation and cross-sectoral communication.

Cultural offerings

Cultural agencies such as the British Council are becoming involved with the games sector, and this provides a strong basis for the export of Britain's broad games heritage. Such an offer will provide a boost for the UK's games industry, as it taps into both the increased interest in games heritage worldwide – exemplified by the touring Game On exhibition, which was first organised by the Barbican Art Gallery – and the UK's excellent heritage in games development.

Archiving games

The archiving of games and the creative process in developing them would preserve their record of cultural contribution and act as a resource for future talent looking for inspiration and ideas. Such an approach would see games and equipment preserved, recognising the need to maintain technologies of both forms. Ensuring access to Britain's games heritage in the future will require modest investment now to preserve obsolete technologies, but this will have significant payoffs in the future as the remainder of the world increasingly recognises the cultural value of the industry.

This could be linked into the BBC's proposed *Ideas Service* – an online platform designed to link materials from national institutions including galleries, museums, and universities. This would have the value of ensuring access to this element of the UK's cultural history is broadly available to the public.

ACTION: DCMS Create a single UK Games Archive, drawing together the various existing projects into a coherent whole. This UK Games Archive should be linked to the BBC's proposed *Ideas Service*.



Case Study: Strong Museum of Play

An example of this archiving model is the **Strong Museum of Play**, located in Rochester, New York. This innovative museum contains a variety of play-related exhibits and collections, and includes within this the **Brian Sutton-Smith Library and Archives**, the **International Center for the History of Electronic Games**, and the **World Video Game Hall of Fame**. ICHEG contains a variety of collections explaining and interpreting how people play and learn with video games, and their cross-cultural value. Meanwhile, the **Sutton-Smith Library** includes the archives of a variety of video game luminaries, including companies such as Atari, and creators like Will Wright.

Supporting a similar model in the UK would have a similar payoff to the Strong's world-leading creative and cultural impacts, and would build from the distinct British base of games heritage and creativity, preserving and interpreting this for a new generation of creators and players.



ANALYSIS: the potential for growth

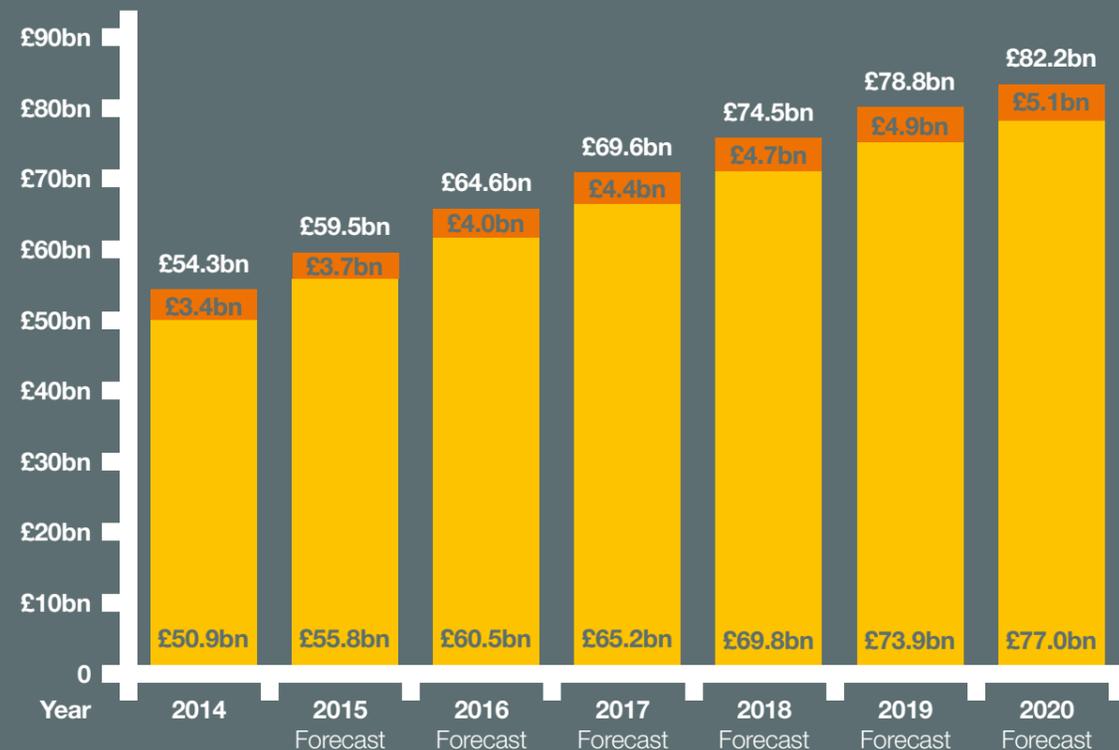
With the majority of global games revenue and growth concentrated in the US, Japan, China and other markets outside the UK, the games industry provides an excellent opportunity to increase British exports through the sale of games to consumers outside of the UK.

In 2014, the UK's games development and publishing sub-sectors combined for an estimated **£3 billion in turnover**. They also generated an estimated **£935 million in GVA** and **employed 13,700 FTEs**. To this, games retail added 5,100 FTEs and £151m GVA, generating a total 18,800 FTEs, and £1,085m GVA across the value chain. When multiplier impacts are included, the games sector in 2014 was responsible for **£1.7bn GVA** within the UK.

Forecast of global games sector revenue (excludes sales of game consoles and other equipment)

- Rest of World
- UK

Source: Olsberg•SPI/Nordicity estimates based on data from Newzoo.



Under a baseline scenario whereby the UK's games development and publisher sub-sectors maintained their current position of global competitiveness (and thereby share of the global market), their turnover would grow in line with global and increase by approximately 50% to £4.9 billion by 2020. This scenario would see the total employment impact, including multiplier effects, grow from the present 27,600 FTEs to nearly 38,000 FTEs by 2020. The total GVA impact would increase to over £2.6bn in 2020.

The trajectory of the games industry after the introduction of the VGTR can be modelled by looking at the impact of the Film Tax Relief in the UK in January 2008. Within the UK film sector, inward investment represents the segment that is most sensitive to policies that affect the UK's global competitiveness and over the following years this relief itself ushered in a period of increased competitiveness for the UK's film production sector. The introduction of incentives resulted in a 14% increase in total film production in the UK and a 31% increase inward film production.⁴¹ Of course, the film sector was not coming from a standing start in 2007 – FTR replaced an older incentive, and the industry in the UK already had deep routes.

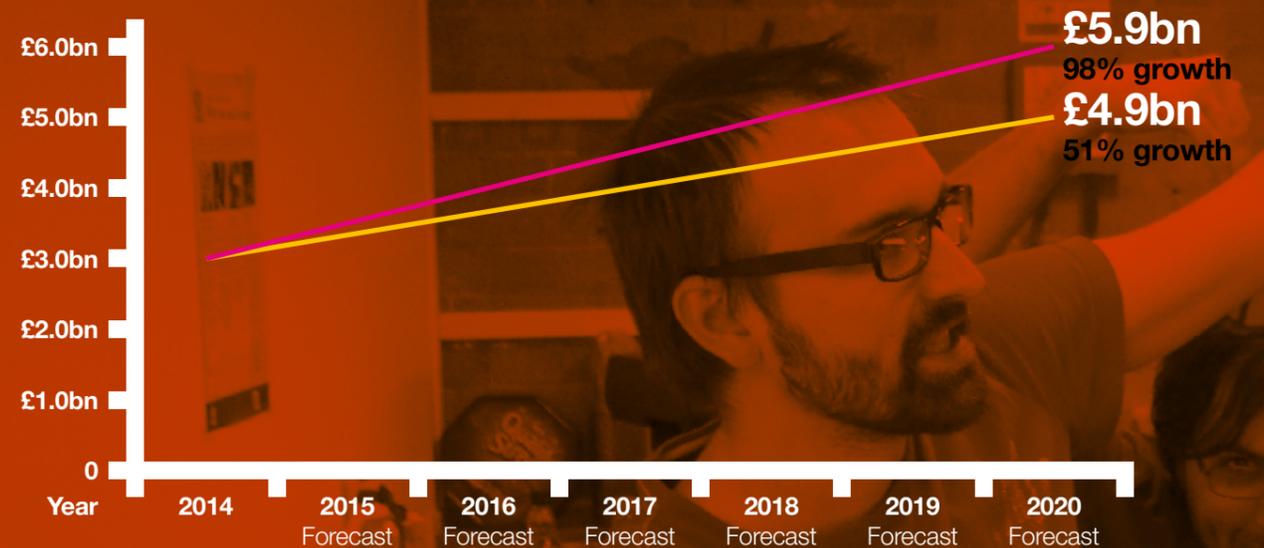
In much the same way the policy recommendations here would make the UK's games industry more globally competitive.

With that in mind, a scenario where the competitiveness of the UK's game development and publishing sub-sectors was increased through the policy recommendations in this report has the potential to yield the same – or even higher – levels of growth than that experienced by inward film production.

Projected scenarios for growth of the UK's games development and publishing sector

- Baseline growth
- Growth with increased competitiveness

Source: Olsberg•SPI/Nordicity estimates based on data from Newzoo and Games Investor Consulting.

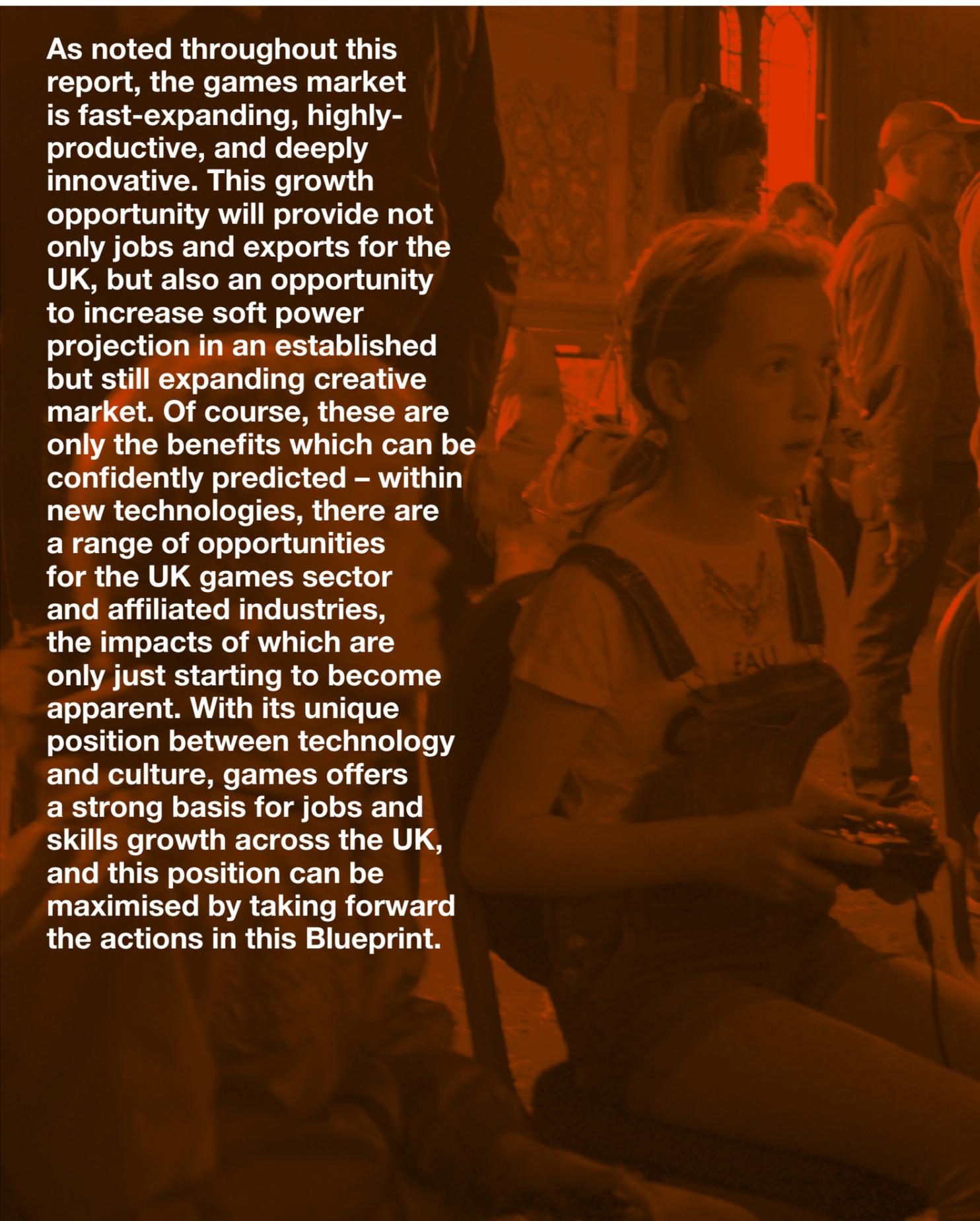


The UK's games industry's 2020 turnover could potentially reach £5.9 billion – a 31% increase over the baseline scenario and a 95% increase over 2014 turnover.

⁴¹ The percentage increases in UK film production were calculated by comparing the average annual levels of production for the five years prior to the introduction of FTR (2003-2007) to the average annual levels since the introduction in FTR (2008-2014). All amounts were converted to real 2014 pounds sterling before making the calculations, thereby removing the effects of consumer price inflation.

Including direct and multiplier effects, the total employment impact of the recommendations would result in the generation of an additional 13,000 FTEs over the baseline growth scenario.

This would mean a total employment impact of 51,000 FTEs. Meanwhile, with increased competitiveness the GVA impact in 2020 is estimated to reach £3.4bn per annum, £800m higher than the baseline position.



As noted throughout this report, the games market is fast-expanding, highly-productive, and deeply innovative. This growth opportunity will provide not only jobs and exports for the UK, but also an opportunity to increase soft power projection in an established but still expanding creative market. Of course, these are only the benefits which can be confidently predicted – within new technologies, there are a range of opportunities for the UK games sector and affiliated industries, the impacts of which are only just starting to become apparent. With its unique position between technology and culture, games offers a strong basis for jobs and skills growth across the UK, and this position can be maximised by taking forward the actions in this Blueprint.

