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Policy Briefing



Level Up – Building a Stronger Games Sector

Over the last 30 years, video games have grown from a niche hobby into a global entertainment industry. The arrival of a new generation of game consoles, alongside innovations like social and online gaming, has dramatically enlarged the size of the market, creating substantial opportunities for entrepreneurial companies.

But games have not just come of age in mainstream culture. They are also a source of innovation that benefits the broader economy. Technologies and business models developed in the video games industry are being applied to areas such as health, defence and architecture. The popularity of video games amongst young people makes them a promising potential source of educational innovation.

But if the UK is to continue as a global industry leader, important challenges need to be tackled. These include skills shortages, unsustainable business models and barriers to accessing finance. The industry must also raise its game in the rapidly expanding online market, and face up to intense – often subsidised – competition from overseas.

A mainstream medium with a strong UK presence

Video games are a rapidly growing creative sub-sector with a promising future

The video games industry is rapidly expanding, with annual growth of 11.4 per cent, and projected global turnover of \$46 billion in 2010.¹ No longer are video games the preserve of young men: a new generation of hardware and new ways of playing² have enlarged the market beyond its traditional demographics to embrace women, families and older people.³ Video games sales continue to grow fast, even in the current economic downturn, and are expected to overtake music and DVD sales in the UK by the end of 2008.⁴

Of course, video games remain particularly popular with young people. A recent survey showed that 97 per cent of US teenagers play video games,⁵ while 48 per cent of UK 16 to 29 year olds classify themselves as 'active gamers'.⁶

The UK is a global player

The UK is the third largest video games market in the world after the USA and Japan,⁷ and its development sector is the fourth largest revenue earner, behind the USA, Japan and Canada, whose subsidised industry captured third place from the UK recently.⁸ Between 2004 and 2006, video games exports contributed \pounds 200 million to the UK balance of trade.⁹

There are currently around 10,000 developers employed by UK studios.¹⁰ They have been behind some of the most memorable franchises and path-breaking genres,¹¹ and enjoy a world-class reputation for their ingenuity and technical skills.¹²

While other creative sub-sectors concentrate in London, video game development takes place across the UK, with significant clusters in Dundee, Cambridge, Brighton, Bristol, Birmingham and Leeds.¹³

Video game innovation creates value beyond the boundaries of the industry

A highly creative and innovative creative sub-sector

Few industries rely on sustained innovation as much as video games, with new hardware, software, user interfaces and content driving the sector's growth.¹⁴ Today, highly interactive gaming experiences can be enjoyed on almost all digital platforms, and there is an explosion of 'genres' that cater for the demands of an expanding and diverse audience.



1. PricewaterhouseCoopers (2006) 'Global Entertainment and Media Outlook 2006-2010.' London: PWC.

2. According to MMOGChart there are currently 17 million active subscribers in Multi-Player Online Games

3. Nintendo's Wii and DS consoles targeting demographics traditionally neglected by the video games industry, such as women, families and older people, have respectively sold 30 and 81 million units since their launch.

4. Holding, M. (2008) 'Video games to become UK's top entertainment form.' Reuters, 5 November. Available at: http:// www.reuters.com/article/ technologyNews/idUSTRE4A46 1720081105?feedType=RSS&fee dName=technologyNews 5. PEW/Internet American Life

Project (2008) 'Teens, video games, and civics.' Available at: http://www.pewinternet.org/ PPF/r/263/report_display.asp 6. ISFE (2008) 'Video gamers in Europe 2008.' Available at: http://www.isfe.eu/ tzr/scripts/downloader2. php?filename=T003/F0013/3e/ ba/10udqgsz3qaghqd4alr5p 0p3I39&mime=application/ pdf&originalname=Key_Facts_ Fonlish final ndf

7. ELSPA (2005) 'The Games Industry: A UK Success Story – call to government for more support for one of the UK's most successful industries.' London: ELSPA.

8. Games Investor Consulting (2008) 'Raise the Game: The competitiveness of the UK's games development sector and the impact of governmental support overseas.' London: GIC Limited.

9. ELSPA (2005) 'The Games Industry: A UK Success Story – call to government for more support for one of the UK's most successful industries.' London: ELSPA.

0. Ibid., p.9.

SingStar, Fable or Grand Theft Auto.

12. Iwenty-hve out of Develop Magazine's Top 100 developers are based in the UK. See http:// www.develop100.com/ 13. CIO (2008) 'Game On! A Report on the Interactive Leisure Software Subsector in London.'

London: CIO. 14. NESTA (2008) 'Hidden Innovation in the Creative

NESTA Policy & Research Unit 1 Plough Place London EC4A 1DE research@nesta.org.uk www.nesta.org.uk 15. Vamey, A. (2007) 'London in Oblivion.' Available at: http://www.escapistmagazine. com/articles/view/issues/ issue_109/1331-London-in-Oblivion

16. See http://fold.it/portal/ info/science

17. Lohr, S. (2006) 'IBM Unveils Server Line That Uses Game Chips.' New York Times, 9 February 2006. Available at: http://www. nytimes.com/2006/02/09/ technology/09blue.html 18. These include large corporations such as MTV or Disney, which have launched virtual environments where their users can meet up, socialise, play games and access content in new ways.

19. Hiatt, B. (2008) 'Rock Games Battle for Bands.' Available at: http://www.rollingstone.com/ news/story/21896070/rock_ games_battle_for_bands/1 20. NESTA (2007) 'The New Inventors: How users are changing the rules of innovation.' London: NESTA.

21. Little Big Planet and Buzz (two games respectively developed by Guildford-based Media Molecule and Brighton studio Relentless Software) provide users with tools they can use in order to create their own content as well as platforms for distribution. This increases the quantity of complementary content available for these games, and their commercial attractiveness. See http://www.guardian.co.uk/ technology/2008/nov/06/ little-big-planet-lbp-indiegamesnames

22. The Guardian (2008) 'Computer game boosts maths scores.' 28 September 2008. Available at: http://news.bbc. co.uk/1/hi/scotland/7635404 stm

23. Virtual Heroes, which simulates emergency scenarios, is one example of the emerging 'serious game' genre. See http://www.virtualheroes.com/ index.asp

24. Games Investor Consulting (2008) 'Raise the Game: The competitiveness of the UK's games development sector and the impact of governmental support overseas.' London: GIC Limited. p.10.

25. UKTI (2008) 'Playing for Keeps: Challenges to sustaining a world class UK games sector – commercial models and distribution channels.' Available at: https://www.uktradeinvest. gov.uk/ukti/fileDownload/ Mono3GamesReport_ LR.pdf?cid=411884

26. This 'Catch 22' situation is also referred to as the 'IP Poverty Trap'. See Ibid., p.1 and The Work Foundation (2007) 'Staying Ahead: The economic performance of the UK's creative industries.' London: The Work Foundation, p.168. 27. Games Investor Consulting (2008) 'Raise the Game: The competitiveness of the UK's games development sector and the impact of governmental support overseas.' London: GIC Limited. pp.8–9.

With outcomes that can be applied in the broader economy

The technologies developed by video games studios are being successfully deployed in other sectors. Sophisticated game engines enable architects to produce virtual models of their building designs before construction begins.¹⁵ And, in the puzzle game Foldit, users 'fold' real protein structures, collective activity that could lead to the discovery of new proteins with health and environmental benefits.¹⁶

The sector's demand for high performance hardware, software and networks also encourages innovation in the ICT industries as a whole. These have wider applications: chips originally designed for the PlayStation 3 console now power servers that can process and display huge amounts of data during drug discovery and research activities.¹⁷

Many video games are distributed and played online. So, companies in the sector are experimenting with new technologies for digital distribution and community engagement, as well as creating new business models based on micro-transactions and virtual markets. These innovative approaches have been emulated by other creative and media firms as they move their own activities online.¹⁸

Increasingly, video games are also a platform through which other creative content and intellectual properties can be exploited in innovative ways. As traditional CD sales fall, the revenues that musicians earn from music video games such as Guitar Hero, Rock Band and SingStar are starting to take their place.¹⁹

At the forefront of user-led innovation

Previous NESTA research has shown the growing importance of users as a source of new products, content and expertise.²⁰ Perhaps because of its roots in user-led innovation, the games industry has been particularly adept at developing tools and platforms that enhance and leverage the creativity and innovative potential of their user communities. Several breakthrough games produced by UK studios are based on business models that see user-led innovation as a source of value rather than as a threat, showing other sectors how they too can do the same.²¹

A promising medium which can support new ways of teaching and training

Video games' highly interactive features make them a potentially valuable tool for learning. Bespoke video games are being deployed with increasing frequency in classrooms to complement traditional teaching. One pilot study in Scotland has shown that pupils who add to their maths lessons with sessions of Nintendo's puzzle game 'Brain Training' obtain better test scores.²² The capacity of games to emulate real-life environments and complex scenarios also makes them very suitable for training purposes.²³

The strong position of the UK games sector cannot be taken for granted

The UK development sector is projected to decline in the coming years

Despite all this, the UK industry is in danger of decline. Recent research has forecast a drop in the number of UK video games studios and developers in the coming years, as well as a slide in global sales rankings behind countries such as China and South Korea.²⁴ Several structural weaknesses explain these growing difficulties.

• Unsustainable business models and barriers to finance reduce the scope for innovation

UK studios have historically excelled at the development of globally appealing original genres and franchises – a high valueadded activity that generates revenues for reinvestment. Creativity and innovation have helped to differentiate UK developers from their less expensive Eastern European and Asian competitors.

However, the growing levels of investment required to produce global blockbusters, and risk-aversion amongst publishers who prefer to develop such titles 'in-house', have made it more difficult for UK studios to launch original video games.²⁵ The freelance nature of most small developers does not encourage sustainable business models based upon intellectual property generation, which constrains innovation.²⁶

The financial markets could once be expected to finance promising game ideas overlooked by mainstream publishers. But after some disappointments during the dot.com bubble in 2001 and 2002, investors have been wary of video games projects.²⁷ While studios could develop prototypes to demonstrate the potential of their products to investors, very few have the resources to undertake such an expensive activity.²⁸

• Skills shortages constrain growth

Despite a boom in specialist courses offered by UK universities, studios still cite recruitment problems as a factor limiting their growth.²⁹ Graduates from most of these courses lack 'industry readiness': only 18 per cent of them manage to win a job in the industry.³⁰ Studios prefer to recruit computer programming or maths graduates. However, the decline – until recently – in the number of students registering for these courses constrains the size of this talent pool for video game development.³¹

 Knowledge transfer with other creative sub-sectors is limited

Audiences are increasingly choosing to consume content across media platforms. Creative sub-sectors, such as digital media, television and film are experimenting with new business models based on the convergence of production techniques and content which can be exploited across several media. Yet, the degree of 'crossover' between UK video games developers and these media is limited. This constrains the potential for knowledge transfer and beneficial spillovers between sectors.³²

- Not enough activity in the online market The UK sector's relative lack of activity in the rapidly expanding online market could also reduce its future competitiveness.³³ Cambridge-based JAGEX, creators of the popular online game Runescape, or independent developers and digital distribution pioneers Introversion, are rare exceptions. As online development becomes more important, UK studios could be left behind by international competitors.
- Competition from subsidised territories is drawing away investment and talent The generous public support for video game development available in France, Singapore, some US states and (especially) Canada is tilting the playing field against UK studios.³⁴ These incentives are leading to studio delocalisation and diverting development resources and talent away from the UK, and towards these subsidised territories.³⁵ The decision by the UK publisher SCI/Eidos to relocate a substantial proportion of its development activities to Montreal is a good example.³⁶

Stronger policy action must be taken in order to support the UK video games sector

Policymakers are warming up to the economic potential of video games UK policymakers are now much more aware of the importance of the creative industries to economic growth and innovation.³⁷

This has led to some national initiatives to support the creative industries which include video games in their scope, such as the £10 million Technology Strategy Board (TSB) Creative Industries R&D fund and the £5 million investment programme to support the commercialisation of digital content by UK creative companies. The TSB is also funding the Creative Industries Technology and Innovation Network (CITIN), which is providing video games studios and other creative businesses with new opportunities to share knowledge and technologies. Regionally, EM Media, ITI Techmedia, Screen Yorkshire, Northern Ireland's DETI and the Welsh Creative IP Fund are targeting game studios as part of their creative industries' support.38

NESTA's Creative Economy Programme has recently launched 'Raise the Game' to fill structural and skills gaps in the UK video games sector and improve the growth potential of small and innovative studios. 'Raise the Game' provides mentoring and information about opportunities in 'convergent' markets and will help improve resource sharing. The associated 'Dare to Grow' project – linked to the University of Abertay in Dundee 'Dare to be Digital' competition for innovative game prototypes – funds internships in small video games studios.

Policies such as R&D tax credits fail to support a sector where much innovation remains 'hidden'

NESTA's research on the UK video games studio sector has shown that formal innovation measurements such as R&D spending fail to capture the totality of innovative development.³⁹ Studios face difficulties separating R&D activities from other spending, which limits the extent to which they can benefit from measures to support innovation such as R&D tax credits.⁴⁰ This is particularly important for smaller size studios, where the opportunity costs of applying for R&D tax credits often exceed the potential benefits.⁴¹ Simpler tax relief would better support their innovative activities. 28. UKTI (2008) 'Playing for Keeps: Challenges to sustaining a world class UK games sector - commercial models and distribution channels.' Available at: https://www.uktradeinvest. gov.uk/ukti/fileDownload/ Mono3GamesReport_ LR.pdf?cid=411884

29. Games Investor Consulting (2008) 'Raise the Game: The competitiveness of the UK's games development sector and the impact of governmental support overseas.' London: GIC Limited. p.10.

30. Digital Native Academy (2008) 'An Investigation into the Labour Market and Skills Demands of the Games and Serious Games Industries' p.26. 31. Games Investor Consulting (2008) 'Raise the Game: The competitiveness of the UK's games development sector and the impact of governmental support overseas.' London: GIC Limited. p.10.

32. Ibid., p.53. 33. Ibid., p.53.

34. For example, studios in Quebec enjoy a package of tax credits and incentives that allows them to recoup up to 37.5 per cent of their expenditures on salaries for five years, and experts that amount to 75 per cent for five years. Other loan guarantees and start-up funds, are also available 35. French, M. (2008) UK development sector 'could become a dead man walking' 'Develop Magazine.' 27 May 2008. Available at: http://www developmag.com/news/29858/ UK-development-sector-could become-a-dead-man-walking

36. ELSPA (2007) 'ELSPA backs Eidos' view that the UK government needs to do more for the games industry.' Press release. Available at: http:// www.elspa.com/?i=6897&s=111 1&f=49&archive=

37. DCMS (2008) 'Creative Britain: Unlocking Talent for the New Economy'. p.47. Available at: http://www.culture.gov. uk/images/publications/ CEPFeb2008.pdf

38. Games Investor Consulting (2008) 'Raise the Game: The competitiveness of the UK's games development sector and the impact of governmental support overseas.' London: GIC Limited, p.30.

39. This is partly due to the fact that, differently from many other sectors, creativity and innovation in video games development are not confined to specific stages of a project, but occur throughout, as the limitations and possibilities of hardware, software and tools are explored and expanded. See NESTA (2008) 'Hidden Innovation in the Creative Industries.' London: NESTA.

40. Ibid., pp.26-27. 41. Games Investor Consulting (2008) 'Raise the Game: The competitiveness of the UK's games development sector and the impact of governmental support overseas.' London: GIC Limited. p.13. Action must be taken in order to stimulate the UK sector's intellectual property generation and online capabilities The Department for Innovation, Universities and Skills' (DIUS) 'Innovation Nation' White Paper⁴² is an important step towards more inclusive definitions of innovation. It should produce policies better able to support the 'hidden' innovative activities of video games studios. However, action is urgent in those areas where the UK sector is facing some of its biggest challenges: original IP generation, and participation in online markets.

- The TSB should set up prototype funds to help studios demonstrate the commercial viability of their original ideas, thus enhancing subsequent access to external funding.
- The Enterprise Capital Fund for the creative industries that the government is considering should include video games as a priority sector.⁴³
- Specific attention should be given to innovative online projects, where the UK studio sector is lagging. The TSB's 'Accessing and Commercialising Content in a Digitally Networked World' programme should be accompanied by funding initiatives from other agencies, including BERR, to strengthen the UK video games studios in online markets.

It is necessary to improve the industryreadiness of game course graduates

It is in everyone's interest that specialist university courses teach the skills necessary to get a job in the sector. The Sector Skills Council Skillset's accreditation efforts for game-specific courses are a step in the right direction. The Higher Education Funding Council for England (HEFCE) and Scottish Funding Council should provide more incentives for the design of relevant curricula. A 'kitemark' for games courses, linked to their funding, would encourage courses to become more relevant to industry.

Enhance knowledge transfer flows between academia and the video games sector

One way to make courses more relevant is to give academics more experience of the industry. The Engineering and Physical Sciences Research Council (EPSRC) should explore the feasibility of setting up a Games Education Fund to finance the placement of lecturers in video games studios, as well as research fellowships.⁴⁴ This initiative could be aligned with EPSRC's efforts to support collaboration between academia and business, as well as the dissemination of relevant research outputs.

DIUS should invest in the successful industrysupported 'Dare to be Digital' competition to ensure the growth of the programme and increase the talent flow of industry-ready graduates into the UK games development community.

Encourage the development of video game technologies for learning and 'serious games'

There are very few UK studios developing video games with learning or training purposes. Although the market for these applications is at the present time small in comparison with rapidly expanding entertainment markets, demand for 'serious games' is expected to become more important in the future. UK developers should be given more incentives, including targeted funding, to increase their participation in this promising area.

The British Educational Communications and Technology Agency (BECTA), DIUS and the Department for Children, Schools and Families (DCSF) should use Open Source game 'engines' or licensed game technologies to build bespoke educational games. An example to follow is the US Department of Education, which has recently awarded the Educational Development Centre with \$9.2 million for research on video games for teaching.⁴⁵

There is scope for pilot programmes to assess the impact of video game technologies on teaching such as those carried out by Learning and Teaching Scotland.⁴⁶

The sector needs to produce more hard evidence to justify similar support policies to those in Canada and France

The trade bodies in the UK games sector are building a case for similar tax breaks to those available in countries like Canada and France. They argue that if such action is not taken swiftly, the UK games sector will decline as more studios relocate to where such incentives are in place.

Evidence for these claims remains anecdotal at the moment. Policymakers need more hard data from the industry on the impact of foreign subsidies on the UK developers' competitiveness, together with a quantification of the positive spillovers that the UK games sector generates on the broader economy, to understand the economic benefits of support.

42. DIUS (2008) 'Innovation Nation.' White Paper. Available at: http://www.dius.gov.uk/ publications/innovation-nation html

43. DCMS (2008) 'Creative Britain: Unlocking Talent for the New Economy.' p.47. Available at: http://www.culture.gov k/images/publications/ CEPFeb2008.pdf 44. More details regarding TIGA's proposal for a Gam Education Fund are available at http://www.developmag.com/ news/30787/Tiga-pushes-for-45. See http://main.edc.org/ newsroom/press_releases/edc_ awarded_92_million_research_ video_games_teaching 46. See http://www.ltscotland org.uk/ictineducation/ sharingpractice/braintraining/

introduction.asp