GAMING GLOBAL

A report for British Council

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BRITISH COUNCIL

Executive Summary

The Gaming Global report explores the games environment in:

five EU countries,

- Finland
- France
- Germany
- Poland
- UK

three non-EU countries,

- Brazil
- Russia
- Republic of Korea

and one non-European region.

- East Asia

It takes a culturally-focused approach, offers examples of innovative work, and makes the case for British Council's engagement with the games sector, both as an entertainment and leisure sector, and as a culturally-productive contributor to the arts.

What does the international landscape for gaming look like?

In economic terms, the international video games market was worth approximately $75.5 billion in 2013, and will grow to almost $103 billion by 2017. In the UK video games are the most valuable purchased entertainment market, outstripping cinema, recorded music and DVDs. UK developers make a significant contribution in many formats and spaces, as do developers across the EU. Beyond the EU, there are established industries in a number of countries (notably Japan, Korea, Australia, New Zealand) who access international markets, with new entrants such as China and Brazil moving in that direction.

Video games are almost always categorised as part of the creative economy, situating them within the scope of investment and promotion by a number of governments. Many countries draw on UK models of policy, although different countries take games either more or less seriously in terms of their cultural significance. The games industry tends to receive innovation funding, with money available through focused programmes. There are some high quality educational offers across the field, although skills gaps are identified. Support from trade associations is consistently strong in the EU countries, although more mixed elsewhere.

How do games and other art forms work together?

Games lack recognition as cultural objects and tend to be classified away from the arts, and the industry is seen to lose out to other creative industries, even those which it resembles (for example, film). There is a great deal of cross-over between games and other cultural forms, but much of this is service orientated, in support of the games industry. Games draw on a broad base of artistic activity in their creation, and make contributions back to other art forms in a number of ways, especially as vectors for engagement or as inspiration. Importantly, in the spaces between games and other arts, a wealth of innovative new cultural forms are produced.

So why should British Council engage with games?

The UK has a reputation as a world leader in games, but their potential for cultural impact is often neglected. Increasingly, games demonstrate strong cultural elements, and explore terrain traditionally considered the preserve of the arts. Indeed, the UK has a strong culture of experimental game making and interdisciplinary art in and around games, but this is not well-recognised. In parallel, games are also increasingly politically situated, and evidence attests to their value as objects of cultural exchange.

The evidence suggests that British Council can engage with games both to add value to the games sector through the arts, and to add value to other arts forms through games. Promotion of games, both commercially and as a cultural form is a vital activity for the UK, and British Council can play an important role here, through engagement with exhibitions and showcases, taking British games and game art overseas, and through helping to understand, support and present a British cultural gaming identity.

British Council is well-placed to engage with games as cultural objects, through their cultural relations work and through their experience of bringing people together. The English language is a major component of the international gaming landscape, and the cross-cultural nature of game consumption creates prodigious opportunities for shared cultural experiences. And the UK's performance in new fields of game-related art coincides with the strength of the commercial games sector to present an opportunity to consolidate UK leadership in a broader field of digital culture.

How should British Council engage with games?

This report recommends that the British Council takes on three roles in relation to games: broker, advocate and policy shaper. Interventions proposed in these roles will serve to erode the perceived division between games and culture/art, extend the reach and impact of British culture overseas, and demonstrate international leadership in this new cultural space.

As *broker*, British Council should:

- participate in and catalyse discussions around important opportunities (such as cultural programmes);
- bring together people from the fringes of the games and other arts sectors, who would not normally be able to access one another;
- convene a forum in which the cultural elements of the games sector can be discussed by practitioners and actors from the games industry, the arts world and the policy context.

As *advocate*, British Council should:

- bridge the perceived divide between games and art, acting as the 'arts voice' in industry-focused discussions and the 'games voice' in arts-focused discussions, and recognise and engage with innovative game-related art forms which fall outside both games and more traditional art structures;
- promote a culturally British identity around gaming by acting as an ambassador for British games, delivering cultural missions to promote them overseas and encouraging the UK public to engage with games as culture.

As *policy shaper*, British Council should:

- promote the recognition and support games as vectors of British art and culture, in discussion with DCMS and with industry and art bodies;
- publicly encourage government policy towards games that is positive and progressive.

These recommendations align with the call to action set out in the British Council's *Culture Matters* report.

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Introduction: British Council and games

Although often perceived simply as a programming-driven entertainment sector, video games have become increasingly complex in recent years. The teams that make these games may be built around coders, but they bring together experts from a variety of different art forms – worlds are imagined by designers, created by graphic artists, explained by writers, given mood by musicians and brought alive by actors. Games, then, create opportunities for a whole range of artists. And as games have become more complex, the themes in those games have followed suit, and games now pass comment on many aspects of the human condition: sexuality, discrimination, terminal illness and moral choice.

Alongside these developments, games have increasingly become politicised. Much like other media forms, games convey cultural ideas, and the engagement of governments and the populace with games have become more sophisticated as the ideas in them have become more developed. Nations are now sensitive to games which comment on their history, and political leaders have even used video games as cultural gifts to their allies: Donald Tusk presented Barack Obama with a copy of CD Projekt RED's *The Witcher 2*, along with copies of two of the *The Witcher* books, in 2011[1].

British Council areas of strength

This event perhaps summarises some of the opportunities in this space that could be explored and exploited through the British Council's particular qualities. As an organisation concerned with cultural relations, the British Council are well-positioned to engage with games as they join the currency of cultural exchange. Furthermore, the Council's well developed Arts Programme, while not presently accounting for games as an independent art form, is clearly already sensitive to the powerful attraction that games and the games industry have begun to exert across the cultural industries. As games, and game-related activities, become ever more able to make us think, and as the interface between gaming and other art forms produces new cultural and aesthetic experiences, the British Council will find itself well-placed to engage with, capture, and support these artistic endeavours. In particular, such support might help in recognising and establishing a sense of games as art in terms of their public value. This support would be important in opening access to funding.

Another area of strength for the British Council which applies to games is its experience of sharing knowledge and ideas – bringing people together. As the report indicates, there is a clear line of activity taking place in Germany in which collaboration with their neighbours is important, but which does not currently seem to extend to collaboration

[1] Tom Goulter, 'Nation of Poland formally presents Barack Obama with copy of The Witcher 2'. Available at http://www.gamesradar.com/nation-of-poland-formally-presents-barack-obama-with-copy-of-the-witcher-2/. The novels pre-date the game, and are written by popular Polish author Andrzej Sapkowski.

with UK partners. Discussions at the roundtable which began this research process indicated that there needed to be a stronger presence for UK games in European exhibition spaces – we are not sufficiently engaged with some major arts experiences, even though they do engage with and present games. Furthermore, although there is the ongoing connection between games and other art forms which allow games to be made, this relationship is often defined by delivery of output judged for its commercial rather than its aesthetic value, and those who are arguably most progressive find themselves on the fringes of an industrialised creative process, rather than at the heart of a cultural activity. British Council's capacity to catalyse relationships and encourage engagement can make an essential contribution to the creation of game-related art, and to fostering international connections around this cultural form.[2]

A final area of strength to note is that of the British Council Collection. The art which is produced at the intersections of digital games in particular and other cultural forms is extraordinarily transitory. It is often impossible to reproduce without specific (proprietary) hardware and poses tremendous problems for archivists and scholars[3]. As a holder of a collection of 'the achievements of the very best British artists, craft practitioners and designers'[4], British Council's engagement with and participation in discussions of this kind would be welcome and important, particular given the use of the Collection to inform particular forms of cultural sharing.

Opportunities for the UK

There are significant opportunities for the UK in the gaming space, made especially timely by a policy context which recognises the importance of games as a creative industry, and offers tax incentives which will serve to encourage companies to move to or remain in the UK, keeping our talent base at home. This is of significant additional importance given the move towards educational initiatives which aim to increase the skills within that talent base. However, and as the report indicates, opportunities here go beyond the simply commercial, and there is space for the UK to play a more substantial role in the gaming space.

At present, the UK has a strong reputation as a world leader in games. This is, however, generally articulated through particular high-value properties and an economic reading of the activity of the UK games sector. While these are important indicators of prosperity and success, they do not account for the nature of less- or non-commercial activity and its potential for cultural impact which, in the UK, is also of internationally excellent standard. Discussions during the research for the report indicated that the UK has one of the strongest cultures of experimental game making and is one of the most interdisciplinary artistic communities when it comes to work around games, but this activity is not recognised by the majority of funding bodies, by government or by the public. There is, therefore, an opportunity for the UK to consolidate its leadership within a broader field of digital culture, both at home and for export, of which games and game-making are an important part. In addition, to think diplomatically, to present a reputation built only on high-revenue IP is a proposition which may in fact be more

[2] For the value of this, see Paul Howson and John Dubber, *Culture Matters* (London: British Council, 2014), 11.

[3] See James Newman, 'Save the videogame! The National Videogame Archive: preservation, supersession and obsolescence', *M/C Journal* 12.3 (2009). Available from http://journal.media-culture.org.au/index.php/mcjournal/article/viewArticle/167; '(Not) Playing Games: Player-Produced Walkthroughs as Archival Documents of Digital Gameplay', International Journal of Digital Curation 6.2 (2011): 109-127. Available from http://www.ijdc.net/index.php/ijdc/article/view/186, doi:10.2218/ijdc.v6i2.206.

[4] http://visualarts.britishcouncil.org/collection.

alienating than inviting.

At another level, it is clear that the UK approach to defining the creative industries has exercised an important influence on the definitions used and perspectives taken by other economies. Although partly due to the model's robustness, this is also a result of the UK being quick to act. In refining and understanding the relationships between games and art, and bringing those relationships into the mainstream, there is still space for leaders to emerge.

Opportunities to support British Council in continuing to achieve its cultural relations mission

A number of elements of games bear on the British Council's cultural relations mission. Firstly, of course, games offer a cultural experience which people can share, either by playing the same game or by playing a game together. This proffers two opportunities: games are a forum in which British culture can be shared and understood, but games are also a forum in which British culture can be defined. Although there is a cultural test associated with the tax relief for British game developers, only 4 of the 31 points are awarded for 'cultural contribution',[5] suggesting immediately that this area is difficult to define and poorly understood. Thus there is an opportunity here to think through what constitutes a British game.

Secondly, and perhaps distinctly at this point in time, the *lingua franca* of gaming is English, due to the historic dominance of the American industry. However, this is changing, as other gaming nations assert their own cultural identities in the gaming space, and traditionally insular games cultures (such as that in Russia) reach outside their national context. We can increasingly expect to see games which reflect a whole range of national cultures – not in a manner which is deliberately nationalistic, but simply as a result of the different needs and expectations in different countries. Typically, in the commercial arena, the activity of localisation is employed to make particular games suitable for different territories, not only through translation, but also through some amount of re-acculturation in order to account for cultural sensitivities. As this area is becoming more complex, and games are becoming more clearly established as vectors of culture, additional opportunities both to learn from and to engage with other cultures will be created, and thoughtful localisation could be of great importance.

Finally, British Council should note the value of online communities of consumption in support of cultural relations activity. Many games, both online and offline, attract a large international following, constituted as a community as a result of their shared cultural experience. Although some online forums can be toxic spaces, others present valuable opportunities for intercultural discourse. Of course, some games take place online too, offering similar opportunities in the context of the game itself, particularly where groups of players are compelled to cooperate. As online communities grow, however, it is increasingly the norm for audiences to be segregated by region, although there may (or may not) be benefits in terms of cultural understanding to retaining a more mixed environment.

[5] See http://www.bfi.org.uk/film-industry/british-certification-tax-relief/cultural-test-video-games/summary-points-cultural-test-video-games.

Why would an organization like the British Council engage with a commercial field like this and how can ensure quality?

At the roundtable, and in subsequent discussions, it has been observed that there is no strong voice for the arts in games, and no strong voice for games in the arts. Games in the UK do not have the benefit of an organization like the British Film Institute to support a broad spectrum of games activities, although they do benefit from some very effective trade associations.

With their expertise and experience of acting across such barriers, and across a broad range of art forms, the British Council are in a position to make a valuable contribution here, and one which, based on these discussions, would seem welcome. Commentators have expressed their awareness that it would be impossible to speak for all perspectives on games, but a voice which presented a strong cultural approach to games, to complement the industry focus of the trade associations, would be valued.

In the report that follows, we explore questions of the relationship between games and art, and our recommendations include a number of potential interventions, all of which are conceived within a framework of accountability such as a regular forum in which matters of games and/as culture can be discussed. These recommendations and interventions align with the call to action set out in the British Council's own *Culture Matters* report.[6]

[6] Howson and Dubber, *Culture Matters*, 3.

Approach and Method

The aim of this report is to undertake an exploration of the games environment in five EU countries, 3 non-EU countries and 1 non-European region. It offers examples of some of the most innovative work taking place and provides evidence and makes the case for British Council's engagement with the games sector, both as an entertainment and leisure sector, and as a culturally-productive contributor to the arts.

This report is the product of a combination of literature review and desk research. We have explored a combination of reports, policy documents and academic engagements, along with a variety of online sources which detail games and gaming, and related culture and practices. In addition, our search has been focused, and the shape of the report directed, by conversations with and comments from approximately 40 individuals who work in and around games. Although none of these people have been the focus of a formal interview, their input has been vital to our understanding, particularly of the conjunctions of games and art.

As culturalists, and given that this is a cultural assessment of games, we have focused on games as leisure activities, as entertainment and art. In essence, this means we have not attended to serious games or advergames, or other instrumental forms. Thus, although this activity will naturally be included in figures for overall market and so on, we have not explored any examples of games of this kind.

The scope of countries under investigation was set by our original briefing document, and through subsequent discussion. The focus of the report is on the EU countries explored: the UK, Finland, France, Germany and Poland. These were selected through a combination of British Council priorities and what we considered to be sites of interesting game activity (for example, Finland's explosive growth in mobile game production). As a result of this focus, the EU countries are covered in the greatest detail, and the vast majority of all examples are taken from these contexts.

In addition, we have also explored three other countries – Brazil, Russia, and the Republic of Korea – and paid some attention to the broader East Asian region (including Australia, Burma, China, Hong Kong, Indonesia, Japan, Malaysia, New Zealand, Philippines, Singapore, Taiwan, Thailand and Vietnam). Given the diversity of this area, we have only been able to provide a sketch of the activity taking place, but we have endeavoured to give a meaningful sense of the landscape here.

Significantly, we have noticed that reporting in the non-EU regions tends to be far more closely focused on investment opportunity – considerations of market size and consumption patterns – than on the size of the local games industry, or its dynamics. As a consequence, there are unavoidable gaps in our knowledge here. Furthermore, in some cases language has presented a significant barrier to our exploration, so we realise that our information is not always complete. In addition, we should also note that, due to the rapid growth in the sector and the volatility of the games market, information becomes very rapidly outdated. Consequently, for the purposes of understanding the gaming environment, reports from several years ago are of limited use.

Lastly, we should note that we neither expect nor intend this report to be exhaustive. In what follows, we have attempted to demonstrate the shape of activity and to give some sense of its flavour, but there will perforce be artistic work that we have omitted, or studios that we have passed over. In many ways, choice of leader or of partner is tremendously subjective, and while we have tried to attend to critical reception in judging quality, it has not always been possible to be certain which studio, for example, might be the 'best'. However, as far as possible we have maintained a focus on verifiably high-quality activity.

Organisation of the report

The report is organised into four sections, as follows:

1. The Gaming Landscape: Profiles

This section contains short profiles of each of the areas covered, sketching out the size of the games market, the history and form of the games sector, and indicating some leading industry actors.

2. The Gaming Landscape: Context

This section address the context in which these activities sit, exploring the relationship between games and public/cultural policy, the kinds of funding interventions which exist, the nature of educational support, and the kinds of networks and associations in place.

3. Innovation and Cross-over

This section engages with ideas of innovation and cross-over to consider what kinds of activities are taking place at the borders between games and other cultural forms, and to give some indication of the range and form of these activities. It also reflects on how games can be thought of as cultural.

4. Engaging with Games

This section narrates the strengths and weaknesses in the landscape of gaming, before offering some recommendations about how the British Council might engage with and add value to the gaming sector.

1. The Gaming Landscape: Profiles

According to Newzoo, the international video games market was worth approximately $75.5 billion in 2013, and will grow to almost $103 billion by 2017. [7] In the UK, it has been claimed that 2008 marked the year that video games became the most valuable purchased entertainment market,[8] outstripping cinema, recorded music and DVDs. While 2008 may have been a year in which the market was distorted by particularly impactful releases – this was, for example, the year in which *Grand Theft Auto IV* appeared[9] – it is nevertheless an indicator that video games have achieved a dominant maturity, in the UK at least.

It also, however, highlights a problem: it is often unclear whether or not assessments of the value or size of markets are accurate. For games, we strike similar problems in assessments of industry size; recent work by Nesta[10] has demonstrated how the use of official designators can distort our picture of the games industry, for example. In addition, different assessments are not always comparable; methodologies and inclusions may differ (particularly on the issue of hardware sales), and as international performance is a competitive space, presentations and claims to be, say, number one in the EU are often based on a specific interpretation of the information.

As the discussion of gaming in the context of cultural policy in section 2.1 makes clear, issues of classification add to challenges in estimating the nature of economic activity across territories.[11] As Henrik van der Pol of the OECD comments:

> Despite […] different methodologies to measure the creative economy, there are a number of limitations to such data collection. Not only do varying definitions and categorizations often make information incomparable […] but data is also frequently scarce or at best incomplete. Furthermore, there is a widespread lack of resources and expertise to ensure high quality statistical work, especially in the developing world, as data collection on the creative sector remains a low priority area for many countries.[12]

[7] See http://www.newzoo.com/insights/global-games-market-will-reach-102-9-billion-2017-2/.
[8] Tom Chatfield, 'Videogames now outperform Hollywood movies', *The Guardian: Games Blog*, 27 September 2009. Available from: http://www.theguardian.com/technology/gamesblog/2009/sep/27/videogames-hollywood.
[9] Note that, at the time of its appearance, *GTA IV* set two of the world records later broken by its 2013 successor, *GTA V*: see IGN Staff, Grand Theft Auto IV Breaks Guinness World Records with Biggest Entertainment Release of All-Time, *IGN*, 13 May 2008. Available from http://uk.ign.com/articles/2008/05/13/grand-theft-auto-iv-breaks-guinness-world-records-with-biggest-entertainment-release-of-all-time and see below, note 22.
[10] Juan Mateos–Garcia, Hasan Bakhshi and Mark Lenel, *A Map of the UK Games Industry* (London: Nesta, 2014). Available from http://www.nesta.org.uk/sites/default/files/map_uk_games_industry_wv.pdf.
[11] John C. Gordon et al., *International measurement of the economic and social importance of culture*. No. 2007/3 (OECD Publishing, 2007). Available from http://www.oecd.org/std/na/37257281.pdf.
[12] Hendrik van der Pol, *Key role of cultural and creative industries in the economy* (OECD, 2007). Available: .

In what follows, we have tried as far as possible to use appropriately comparable information, but ultimately we have operated from the principle that when countries make claims to lead in a field (or to be second, or third), there is substance to the generality of claim, even if it is not precisely correct when viewed from all angles.

1.1 The EU

1.1.1 The UK

The UK has a longstanding games industry which saw extensive development in the 1980s, in counterpoint to the market failure in the United States during the early part of that decade. During the years since, many overseas publishers have invested in the UK industry, creating a situation in which, while the UK produces some of the most valuable and highly sought after games properties, the properties themselves are typically owned elsewhere, normally in either the US or Japan. While this is arguably, at least in part, the result of insufficient support of the UK sector,[13] illustrative examples are the hugely successful *Grand Theft Auto* and *Tomb Raider* series, originated under DMA Design/BMG Interactive and Core Design/Eidos respectively, and now ultimately owned by Take-Two Interactive (US) and Square Enix (Japan). More recently, the UK industry has seen a surge of start-ups,[14] and new routes to market have fostered a culture of self-publishing.[15]

According to government estimates,[16] the GVA for the UK games industry was £540 million in 2012, showing a sharp decline since 2011, when the figure was given as £946 million. This drop prompted the authors of the government report to recommend caution with regards to assessment of these statistics, as it was difficult to explain, and figures are anyway volatile. However, new research published by Nesta, which adopted a big data approach, has demonstrated that there may be deeper-rooted problems here than simple volatility. Nesta's research highlights problems with the way in which elements of the games industry are classified through SIC codes, indicating that only 35% of their identified games companies could be found through SIC codes, and suggesting that, in 2014, there are 1,902 games companies in the UK (a significant increase on the 1,320 recorded under the appropriate SIC codes for 2013).[17] On this basis, the Nesta team estimated that the industry GVA was significantly higher, and some quick calculations suggested a figure closer to £1.72 billion.

This UK industry is dominated by micro or small businesses. Nesta suggest that 95% of the 1,902 companies working in and around games fall into this category,[18] and research from TIGA indicates that 59% of development studios employ 4 or fewer people.[19] Research published in 2013 indicates that this is also a rapidly changing industry, with more than half of studios fewer than four years old, and 83% of those

[13] Ian Livingstone and Alex Hope, *Next Gen*. (London: Nesta, 2011), 22. Available from http://www.nesta.org.uk/publications/next-gen.

[14] See http://www.tiga.org/news/the-uk-video-game-development-sector-is-back-on-track.

[15] 83% of studios started in 2011 and 2012 are independent, and 2010 figures suggest that more than 65% of all UK studios are self-publishing. See UKIE, *UK Video Games Fact Sheet* (London: UKIE, 2015), 14. Available from http://ukie.org.uk/content/games-industry-numbers.

[16] Department for Culture, Media and Sport, Creative Industries Economic Estimates - January 2014 (London: DCMS), 28. Available from https://www.gov.uk/government/statistics/creative-industries-economic-estimates-january-2014.

[17] Mateos–Garcia, Bakhshi and Lenel, *Map of the UK Games Industry*, 16, 18.

[18] Ibid, 16-17.

[19] See http://www.tiga.org/news/alice-in-wonderland-uk-game-development-industry-shrinks-and-expands-at-the-same-time.

studios starting up in 2011 and 2012 classed as independent (i.e. not publisher owned).[20] Many companies (around 64%) are dedicated to iOS development, and it is these which have tended to slip beneath the radar of measurement.[21] However, the UK does retain a mixed ecology of game production, and there are still many companies (and significant employment) working on traditional or multiple platforms.

Some UK Leaders

Given this mixed production, the UK makes a strong contribution in a number of spaces. While owned abroad, games like *Grand Theft Auto* rest on British talent. Rockstar North (Edinburgh), *GTA*'s developer, is a world-leading development company – Grand Theft Auto V broke 6 sales world records at its release.[22] The UK has also taken a lead in the online gaming field. *MUD1*, arguably the progenitor of the Massively Multiplayer Online Roleplaying Game (MMORPG) genre, was invented in Essex in the late 1970s; in the contemporary context, *Runescape*, by Jagex Games Studio (Cambridge), is the most popular free-to-play multiplayer game in the world.[23] UK companies are also making a significant impact on the mobile and social games market, with 2013 hit *Clumsy Ninja*, developed by Oxford-based NaturalMotion, downloaded more than 10 million times in its first week of release.[24] In addition, King Digital Entertainment, whose Swedish studio developed the highly-successful *Candy Crush Saga*, is headquartered in London; the game had reached an install base of 500 million by the end of 2013,[25] and generated the third-highest revenue of any mobile game in 2014, at $1 billion.[26]

1.1.2 France

France also boasts a significant and developed games industry which dates from the 1980s, although few companies survive from that era. Ubisoft (founded in 1986) is the third largest self-standing publisher worldwide; the second largest, Activision-Blizzard, were until recently French-owned, by global media conglomerate Vivendi. Another major historic French developer and publisher, Infogrames, acquired Atari in 2008 and adopted the Atari name; however, the company has recently undergone bankruptcy

[20] http://www.tiga.org/news/press-releases/the-uk-games-industry-young-independent-and-mobile.
[21] Mateos–Garcia, Bakhshi and Lenel, *Map of the UK Games Industry*, 4.
[22] Kevin Lynch, 'Confirmed: Grand Theft Auto 5 breaks 6 sales world records', *Guinness World Records*, 8 October 2013. Available from http://www.guinnessworldrecords.com/news/2013/10/confirmed-grand-theft-auto-breaks-six-sales-world-records-51900/.
[23] Livingstone and Hope, Next Gen, 13. British leadership in the free-to-play space is historic, also – see, for example, *Neopets*, originated in the UK but now owned by Viacom (http://www.neopets.com). Business models in gaming fall broadly into four groups: pay-to-play (P2P), free-to-play (F2P), ad-supported, and hybrids of these types. Pay-to-play models require a prospective player to buy or subscribe to the game in order to play it. Free-to-play games offer a core experience for free, usually with the option to pay for further content or virtual goods, often through in-app purchases (microtransactions). Ad-supported games include advertising within the game experience, for example through banners, or splash screens during breaks in gameplay. Hybrid models combine these modes: a pay to play game might also incorporate microtransactions, or a free to play game might also be ad-supported (see Ryan Morel, 'Choosing the right business model for your game or app'. Available from http://www.adobe.com/devnet/flashplayer/articles/right-business-model.html).
[24] Dean Takahashi, 'The iPad has a huge hit in Natural Motion's Clumsy Ninja, with 10M downloads in a week', *VB|GamesBeat*, 4 December 2013. Available from http://venturebeat.com/2013/12/04/the-ipad-has-a-huge-hit-in-natural-motions-clumsy-ninja-with-10m-downloads-in-a-week/ (accessed 11 February 2015). NaturalMotion was acquired by US social media giant Zynga in January 2014 for $527 million (see Brendan Sinclair, 'Zynga acquiring NaturalMotion for $527 million', *Gamesindustry.biz*, 30 January 2014. Available from http://www.gamesindustry.biz/articles/2014-01-30-zynga-acquiring-naturalmotion-for-USD527-million (accessed 11 February 2015).
[25] UKIE, *UK Video Games Fact Sheet*, 12.
[26] See http://www.superdataresearch.com/blog/infographic-2014-digital-games-year-review/.

procedures and a radical reduction in staffing.[27] The French industry is credited with a significant contribution to the genre of survival horror, with 1992's *Alone in the Dark* setting out a new relationship between action, adventure and suspense.[28] More recently, Quantic Dream's film-noir thriller *Heavy Rain* (2010) received significant critical acclaim, winning 3 BAFTAs.[29]

The French government have recently drawn attention to the rapid growth of the games sector in France which, they claim, was second in the world for video game production in April 2014.[30] In 2013, the French games industry saw direct revenues of €2.6 billion, and total revenues of €5 billion, with figures suggesting that video games constitute the second strongest entertainment market in the country, after books.[31] The French video game union, the SNJV (Syndicat National du Jeu Vidéo), highlights the shift in the French market, as boxed sales decrease and downloads grow to 40% of all sales.[32] Notably, also, 80% of French production is for export, with a return on production budgets of more than 3:1.[33]

The French games sector comprises more than 350 companies, employing over 3,000 developers and, indirectly and directly, more than 23,000 people.[34] More than half of these business are fewer than 5 years old, and 75% are fewer than ten years old. The average studio employs 31.8 FTEs, although this figure is distorted by a small number (7) of relatively large organisations – when these are removed, employment average falls to just 12.4 FTEs. Younger studios employ fewer people and more established studios a greater number. Much like the UK, a large proportion of studios develop for smartphones (83.5%) and tablets (80%). However, the PC remains the principal market for French publishers.[35]

Some French leaders

The French industry landscape is dominated by the developer/publisher Ubisoft, an international giant employing more than 9,000 people worldwide, and responsible for several major franchises, including *Assassin's Creed*, the Tom Clancy games (*Rainbow Six*, etc.) and *Far Cry*.[36] Making a smaller but highly important contribution, revenge-themed action adventure *Dishonored* received tremendously strong reviews.[37] Developed by Arkane Studios, a French subsidiary of US media company ZeniMax, the game won the BAFTA for Best Game 2013; and on that subject, we have already noted the strong performance of Quantic Dream's *Heavy Rain*. In the mobile space, although ultimately owned by Ubisoft, Gameloft is a significant player, producing the popular 3D MMORPG *Order & Chaos Online*, and in constant growth in recent years. According

[27] Dean Takahashi, 'Atari and FlowPlay team up to offer social casino games', *VB|GamesBeat*, 26 March 2014. Available from http://venturebeat.com/2014/03/26/atari-and-flowplay-team-up-to-offer-social-casino-games/.
[28] Travis Fahs, 'Alone in the Dark Retrospective', *IGN*, 23 June 2008. Available from http://uk.ign.com/articles/2008/06/23/alone-in-the-dark-restrospective.
[29] Redacteur, 'One, Two and Three British Academy Awards for Heavy Rain!' Available from http://www.quanticdream.com/en/news/one-two-and-three-british-academy-awards-for-heavy-rain.
[30] France Diplomatie, 'France is second in the world for the production of video games (April 2014)'. Available from http://www.diplomatie.gouv.fr/en/french-foreign-policy-1/economic- diplomacy/events-2134/article/france-is-second-in-the-world-for.
[31] See http://www.snjv.org/category/chiffres-cles/.
[32] See http://www.snjv.org/industrie/.
[33] See http://www.snjv.org/category/chiffres-cles/.
[34] See http://www.snjv.org/industrie/.
[35] SNJV, Baromètre annuel du jeu vidéo en France: édition 2014 (Paris: SNJV), 16. Available from http://www.snjv.org/category/publications/barometre_annuel/.
[36] See https://www.ubisoftgroup.com/en-US/about_ubisoft/facts_and_figures.aspx.
[37] An average of 91% across 29 reviews: see http://www.metacritic.com/game/pc/dishonored.

to the company's CEO, one million new Gameloft games are downloaded every day.[38]

1.1.3 Germany

In many ways, gaming in Germany proceeds from a subtly different cultural basis than in other countries. Germany hosts the largest international boardgaming event, SPIEL (Essen), and games such as these have been grounded in national cultural life in a way not seen elsewhere.[39] The German approach to boardgame design, led by figures such as Klaus Teuber (*Settlers of Catan*) and Reiner Knizia (*Lord of the Rings*), has created an entire body of what are known as Eurogames – boardgames which focus on indirect competition, which don't eliminate players, and which often involve cooperation or collaboration. This sense of cooperative neighbourliness is perhaps echoed by features such as those at Gamefest 2014 (Berlin), where curators brought French and Polish games together in a single exhibition.[40] And elements of this manifest in the German approach to video games, not necessarily in the content of the games themselves, but in the collaborative production of titles, such as that between Deck13 and Polish studio CI Games on *Lords of the Fallen*, and among the German All Stars collective.[41] In addition, of all the countries explored, Germany seemed to be the most active in the sphere of games art.In Germany, the video game industry recorded revenue of between €1.82 and €2.66 billion in 2013.[42] Here, again, video games are now the strongest purchased entertainment market, outstripping the music industry and box office.[43] Digital revenues accounted for 50% of the German market, and as a whole it accounted for 5.5% of global game revenues,[44] placing Germany fourth internationally, behind the US, China and Japan. Notably, Germany is set apart from other large European markets by an acceleration in the growth of GooglePlay (i.e. Android) game revenues, which indicates a relative lack of success for gaming on competitor platforms such as the iPad.[45]

There are approximately 320 companies involved in the development or marketing of games in Germany, employing a total of roughly 10,350 people.[46] Around 60 of these companies are specialised publishers, with another 80 active as both publishers and developers. These are concentrated in the regions of North Rhine-Westphalia, Munich, Rhine-Main, Hamburg and Berlin. Germany is also seeing a shift in its games industry, as it becomes one of the most significant sites worldwide for the production of online and browser games.[47]

[38] See http://www.gameloft.com/corporate/?lang=en.
[39] See, for example, Tim Harford, 'Why we still love boardgames', *FT Magazine*, 17 July 2010. Available from http://www.ft.com/cms/s/2/1aab09a4-8fb2-11df-8df0-00144feab49a.html.
[40] See http://www.internationalgamesweekberlin.com/igwb-media-story-20505.
[41] GamesPress, 'You've never seen this before: Six German gaming studios collaborate to make one great game – German All Stars: Believe In Games', *Gamasutra*, 21 August 2013. Available from http://www.gamasutra.com/view/pressreleases/198749/Yoursquove_never_seene_this_before_Six_ German_ gamingstudios_collaborate_to_make_one_great_game_ndash_German_AllStars_Believe_In _Games.php.
[42] http://www.biu-online.de/en/topics/german-games-industry.html, conflicting with http://www.newzoo.com/news/newzoo-g-m-e-partner-provide-data-german-games-market-support-local-industry-growth/.
[43] See http://www.biu-online.de/en/topics/german-games-industry.html.
[44] See http://www.newzoo.com/news/newzoo-g-m-e-partner-provide-data-german-games-market-support-local-industry-growth/.
[45] See http://www.newzoo.com/insights/europes-largest-games-market-germany-grows-5-3-7bn-2013/.
[46] See http://www.biu-online.de/en/topics/german-games-industry/labour-market.html.
[47] See http://www.biu-online.de/en/topics/german-games-industry.html.

Some German leaders

The best-known German video games company is arguably Crytek, headquartered in Frankfurt. They are the producers not only of the successful *Crysis* franchise,[48] but also of the Cryengine, used as the basis not only for Crytek's own productions but also by a number of other companies.[49] In the current generation, these include leading Chinese developer Tencent Games, for *Monster Hunter Online*, and US developer Cloud Imperium Games, for *Star Citizen*, 'the most crowd-funded project in history'.[50] In the online space, Bigpoint are a market leader in the development of browser-based and social games, with *Battlestar Galactic Online* standing at more than 14.8 million registered users.[51] Again, the collaborative tendency can be seen in Bigpoint's partnerships with Jagex to distribute *Runescape* in France and Germany.[52] Lastly, independent developer Yager produced provocative offering *Spec Ops: The Line*,[53] which was widely praised for its narrative and for its perspective on (game) violence. The game was subject to a book length exploration by game critic Brendan Keogh, who observed:

> Yager and [publisher] 2K released Spec Ops: The Line and made me question everything I've ever thought about shooters.[54]

1.1.4 Finland

Finnish game development emerged in the 1980s, with an active enthusiast community producing demonstrations of their skills. Finnish participation in the international demoscene was some of the most active, and Finns set up the Assembly demo party in 1992, the longest running annual (now biannual) demoscene event.[55] Many current Finnish successes can trace their links back to a history in this scene, including Remedy Entertainment, developers of *Alan Wake* and the *Max Payne* series. Finland's strong contemporary presence in the mobile games market is arguably a result of the co-location of this vibrant hobbyist, demo culture with Nokia, a Finnish technology company which recognised the potential of mobile gaming with the launch of the N-Gage in 2003.[56] Although this early foray was unsuccessful,[57] companies such as Rovio (*Angry Birds*) and Supercell (*Clash of Clans*) have generated massive revenues and player bases over the last five years. The

[48] http://www.crysis.com/uk.

[49] http://www.cryengine.com/showcases.

[50] Matt Peckham, 'Crazy Town: Star Citizen, the Most Crowdfunded Project in History, Just Hit $37 Million', *TIME*, 22 January 2014. Available from http://techland.time.com/2014/01/22/crazy-town-star-citizen-the-most-crowdfunded-project-in-history-just-hit-37-million/. To date, the project has raised over $68 million; see https://robertsspaceindustries.com/funding-goals.

[51] http://us.battlestar-galactica.bigpoint.com/?lang=en.

[52] Leigh Alexander, 'Jagex, Bigpoint Partner For RuneScape In France, Germany', *Gamasutra*, 27 May 2010. Available from http://www.gamasutra.com/view/news/119663/Jagex_Bigpoint_Partner_For_RuneScape_In_France_Germany.php.

[53] http://www.specopstheline.com/us/.

[54] Brendan Keogh, 'Read An Excerpt From Killing Is Harmless, A Book Sized Reading Of Spec Ops: The Line', Kotaku Australia, 21 November 2012. Available from http://www.kotaku.com.au/2012/11/read-an-excerpt-from-killing-is-harmless-a-book-sized-reading-of-spec-ops-the-line/. For reasons which are unclear, but likely due to its being set in Dubai, the game was banned in the UAE (see Svend Joscelyne, 'Interviews// Reviving the Spec Ops Franchise', Spong, 7 February 2012. Available from http://spong.com/feature/10110607/Interview-Reviving-the-Spec-Ops-Franchise.

[55] http://www.assembly.org/winter15/.

[56] Rob Fahey, 'Nokia N-Gage', *Eurogamer.net*, 12 September 2003. Available from http://www.eurogamer.net/articles/r_n-gage.

[57] Tom Morgan, 'The Nokia N-Gage: What happened to the handheld console?', *Phonecruncher*, 7 January 2014. Available from http://www.phonecruncher.com/features/2227188/the_nokia_ngage_what_happened_to_the_hand held_console.html.

suddenness of the growth of this activity is clearly demonstrated by a summary of the Finnish industry produced in 2009, in which neither of these two Finnish giants benefit a mention.[58]

The Finnish games sector boasted a total value of €2.21 billion in 2013, based around a core industry of €900 million,[59] and games revenue of $205 million is projected for 2014.[60] This is the result of a tremendously rapid period of growth; the CAGR of the industry between 2004 and 2013 was 39.5%. The environment thus created has attracted a significant influx of international companies to sit alongside the burgeoning scene: both Electronic Arts and Unity opened studios in Helsinki in2012, followed by Gameloft in 2014. A massive 90% of Finnish game produce is exported.[61]

Like others, a significant proportion of Finnish activity is based around mobile, although development takes place across all platforms. In 2014, there are more than 200 companies active in the Finnish industry, employing roughly 2,400 employees (although more than a third of this figure are employed by a single company, Rovio). The employment base has roughly doubled in a period of just three years, demonstrating again the sector's significant growth. Helsinki is the centre of gravity for games, hosting more than 50 of the companies, although Tampere is also significant. Turku has shown strong growth in the period, rising from a single games company in 2009 to 15 companies in 2012.[62]

Some Finnish leaders

Finland arguably leads the world in mobile game development, with the success of companies like Rovio (*Angry Birds* series)[63] and Supercell (*Clash of Clans*). Rovio has capitalised on *Angry Birds*' popularity, producing not only multiple games, but also a TV series and a forthcoming film. In 2013, Japanese firm Softbank and its subsidiary GungHo purchased a controlling interest in Supercell;[64] *Clash of Clans* was the top mobile game of 2014 by revenue ($1.8 billion).[65] Although these huge mobile properties build on a historic Finnish context, they mark something of a new era in Finnish gaming, and previously demonstrations of Finnish excellence have been seen in more conventional modes. Remedy Entertainment's episodic *Alan Wake* is notable here, earmarked by TIME magazine as best videogame of 2010,[66] receiving BAFTA nominations[67] both for its narrative, later novelised,[68] and for its music and sound. The game built on strong previous work on the *Max Payne* series, and future

[58] Sanna Veteläinen, 'Recreation Innovation: The Development of Finnish Video Games and the Video Game Industry', Spring 2009. Available from https://www15.uta.fi/FAST/FIN/GEN/sv-video.html.
[59] Neogames and Tekes Skene, *The Game Industry of Finland* (2014). Available from http://www.neogames.fi/the-2014-state-of-the-finnish-games-industry-brochure-is-out/.
[60] See http://www.newzoo.com/free/rankings/top-100-countries-by-game-revenues/.
[61] Neogames and Tekes Skene, *Game Industry of Finland*.
[62] Ibid.
[63] https://www.angrybirds.com/.
[64] Keith Andrew, 'Super sale: GungHo and SoftBank buy 51% stake in Supercell', *Pocket Gamer.biz*, 15 October 2013. Available from http://www.pocketgamer.biz/news/54503/super-sale-gungho-and-softbank-buy-51-stake-in-supercell/.
[65] See http://www.superdataresearch.com/blog/infographic-2014-digital-games-year-review/.
[66] Evan Narcisse, 'Top 10 Everything of 2010 – Top 10 Video Games – 1. Alan Wake', *TIME*, 9 December 2010. Available from http://content.time.com/time/specials/packages/article/0,28804,2035319_2034548_2034549,00.html. Angry Birds was at number 2.
[67] See http://awards.bafta.org/keyword-search?keywords=Games&page=2&f[0]=string_type%3AGames.
[68] See http://us.macmillan.com/alanwake/rickburroughs.

developments by the studio look promising, in particular the forthcoming *Quantum Break*, which 'blurs the line between television and gaming'.[69]

1.1.5 Poland

The history of the Polish games industry is grounded in the 'copyright-free' years of the 1990s. Games in Polish were broadly unavailable; the first truly successful (and properly licensed) localisation on the Polish market was *Baldur's Gate*, brought to Poland in 1999 by the nascent CD Projekt, now Poland's most successful games company.[70] In 2002, they founded their development arm, CD Projekt RED, and went on to produce *The Witcher*. This was a game grounded in Polish culture, based on fantasy novels by revered Polish author Andrzej Sapkowski;[71] released in 2007, it drew international attention, serving to catalyse game industry activity in Poland. The advent of the economic downturn in 2008 began to bring ex-pat Poles back to Poland; with many new graduates thus persuaded to remain rather than leave, a thriving indie development culture has emerged.[72]

The Polish games market was estimated at €320M in 2013, based on a population of almost 12 million gamers.[73] This is expected to grow to reach an estimated $437 million (€357 million) by the end of 2016.[74] The most popular platform in Poland is, quite firmly, the PC, with 98% of the gaming population making use of that system.[75] Similar to France, there is still a greater reliance on physical products than downloads, with some 60% of game sales in Poland being boxed products.[76]

The industry itself is relatively young, and literature about it concentrates on its potential. Although there is not much available in the way of profiling, one commentator suggests that there are between 200 and 300 studios in Poland, employing around 2,000 people.[77] A brochure published in 2013 lists 41 of the most prominent studios, which between them account for just over 1,400 of those employees. More than 50% of these studios were founded in 2009 or later, and only 8 of them existed 10 years ago.[78]

Some Polish leaders

Although there has been less time for Poland to manifest strong leadership than for our other featured EU countries, there are significant actors in the Polish games sector. Leading them is CD Projekt, not only for the developer CD Projekt RED, producer of *The Witcher* games, but also for another game-related venture, *GOG.com* (formerly *Good Old Games*). *GOG* is a DRM-free distribution platform for the purchase and

[69] See http://www.xbox.com/en-US/games/quantum-break.
[70] Dan Crawley, 'A fighting Poland: The birth and growth of Eastern Europe's hottest game industry (Part 1)', *VB|GameBeat*, 22 November 2014. Available from http://venturebeat.com/2014/11/22/the-birth-and-growth-of-the-polish-game-industry/.
[71] See http://thewitcher.com/witcher1/.
[72] Charlie Hall, 'Polygon Goes to Poland', *Polygon*, 27 March 2014. Available from http://www.polygon.com/features/2014/7/16/5885167/poland-game-industry.
[73] Let's Play! Video Games Industry in Poland. Information Booklet (2014). Available from http://us.polskasvac.org/wp-content/uploads/2014/04/Polish-Gaming-industry-promotional-booklet-.pdf.
[74] Ministerswo Skarbu Państwa, 'Polish video games market against the background of global industry', 3 February 2014. Available from http://msp.gov.pl/en/polish-economy/economic-news/5240,Polish-video-games-market-against-the-background-of-global-industry.html.
[75] See http://www.newzoo.com/infographics/infographic-polish-games-market/.
[76] See http://www.newzoo.com/press-releases/polish-games-market-rises-to-400m-in-2012/.
[77] Crawley, 'A fighting Poland (Part 1)'.
[78] Video Games Industry in Poland Information Booklet – Let's Play! (Warsaw 2013). Available from http://lets-play.com.pl/Informator,4.

downloading of games, and increasingly a direct competitor to *Steam*, Valve's well-established platform. Although no official figures for *GOG* are released, indications are that it is taking an increasing share of the market.[79]

One space in which Polish studios have a notable impact is in discussions around violence, and here we might look to the interventions of Epic Games Poland (formerly People Can Fly) and 11 bit studios, as well as newcomers Destructive Creations. Prior to full acquisition by Epic Games in 2012, People Can Fly collaborated with Epic on the controversial (and well-received) shooter *Bulletstorm*, published by US powerhouse Electronic Arts, which rewarded players for killing enemies in creative ways.[80] While the game received some criticism from the American media, it also offered a platform for journalists to dismantle elements of the game violence debate.[81] The contribution of *Hatred*, forthcoming from Destructive Creations, has been to reignite these discussions, and the game has already been (briefly) banned from Steam Greenlight.[82] 11 bit, conversely, have adopted an entirely different approach to violence in their war- related title *This War of Mine*,[83] building on an established reputation of their *Anomaly* series, with *Anomaly: Warzone Earth* receiving an Apple Design Award,[84] and being rated by review aggregator Metacritic as one of the top 20 iOS games of all time.[85]

1.2. Beyond the EU/ Rest of the World

1.2.1 Brazil

Although there has been an established games industry in Brazil for more than 15 years, it has only recently begun to come into its own as a self-standing and productive part of the country's cultural economy. In the 1990s, interest from overseas developers was attracted to the country, but as Mexico offered a stronger potential market, in the early 2000s interest waned, leaving Brazil without investment.[86] In the intervening years, the rise of social and mobile gaming has been transformative, and Brazil is now a rapidly growing emerging market, with strengths in mobile and PC development. Piracy has historically been a problem, however, and in 2011 games were selling in Brazil for two to three times their price in the US.[87] The country has notable activity in serious games – almost 48% of games produced in 2013 fell into this category, but research indicates that there is little demand for such games at home or abroad, implying that the Brazilian industry will need to refocus itself in the coming years.[88]

[79] Lars Doucet, 'Defender's Quest: By the Numbers, Part 2', *Gamasutra*, 20 February 2013. Available from http://www.gamasutra.com/view/feature/186940/Defenders_Quest_By_the_Numbers_Part_2.php.
[80] http://www.ea.com/uk/bulletstorm. Note the tagline 'Kill With Skill'.
[81] For example, http://www.rockpapershotgun.com/2011/02/15/bulletstormgate-lieberman-offers-evidence/.
[82] http://www.destructivecreations.pl/.
[83] See page 47 below.
[84] Federico Viticci, 'The Best of the Best: Apple Design Awards 2011 Winners Announced', MacStories, 8 June 2011. Available from http://www.macstories.net/news/the-best-of-the-best-apple-design-awards-2011/.
[85] See http://www.metacritic.com/browse/games/release-date/available/ios/metascore.
[86] Matthew Handrahan, 'Emerging Markets: Brazil', *Gamesindustry.biz*, 2 July 2012. Available from http://www.gamesindustry.biz/articles/2012-07-02-emerging-markets-brazil.
[87] Arthur Protasio, 'The Battle For Brazil's Game Future', *Gamasutra*, 13 October 2011. Available from http://www.gamasutra.com/view/feature/134878/the_battle_for_brazils_game_future.php.
[88] GEDIGames, *Relatório Final: Mapeamento da Indústria Brasileira e Global de Jogos Digitais* (February 2014): 133; 28.

Figures for 2014 suggest that Brazil constituted 35% of the Latin American games market, with an annual revenue of $1.6 billion. This is expected to grow in the coming years, with estimates for 2015 showing a revenue of $1.8 billion. The fastest growth segment is social games, in sharp contrast to the US, for example, where this area is shrinking.[89] PCs are far more prevalent than smartphones in Brazil – the PC install base is reported as 118 million in 2013, against 5 million tablets and less than 2 million smartphones (it is predicted that numbers of Android phones, which have two-thirds of the market, will reach 1 million this year).[90]

A survey of 133 game studios[91] indicated that this is again a sector dominated by small businesses, with only 5 companies reporting 30 or more employees. The average company employs 8.5 people, and 75% of companies have revenues below R$240,000 ($90,000). Like the EU examples, Brazil has also seen an uptick in the number of studios created in the years since 2008, and the GEDIGames report points to the increasing ease of development as a possible explanation for this trend.

Some Brazilian leaders

Understanding the Brazilian development environment is difficult, due partially to the barriers and language, and partially to the lack of a developed international profile for Brazilian games. Significant players in the field appear to include Hoplon Infotainment, founded in 2000, developers of the Massive Social Game (MSG) *Taikodom* and Brazilian publisher of the internationally marketed free-to-play title *APB Reloaded*.[92] Vostu are one of the largest social games companies in Brazil, boasting over 50 million players across multiple platforms, with a particular focus on mobile. Titles include *Mini Fazenda*, *Megacity* and *Café Mania*.[93] Behold Studios, a small Brazilian independent, drew international attention for their title *Knights of Pen and Paper*, which reached the student finals of the Independent Games Festival 2013.[94]

1.2.2 Russia

The Russian video game industry is best known for *Tetris*, with few other games known outside Russia until relatively recently. From the 1970s onwards, Russian games had a strong focus on logic and mathematics, settling into a mode of simple but hard-to-beat. In more recent years, games have focused strongly on conflict and warfare, with occasional games reflecting particular debates in Russian society – *Allods Online* (Allods Team), for example, picking up on the tension between rural peace and strong, militarised leadership and *Vangers* (K-D Lab) the terrors of the post-Soviet era.[95] Contemporary games from Russia are beginning to flourish in the international market, with some, such as *Cut the Rope* (ZeptoLab), becoming immensely popular. However, this growth takes place in a context in which Russia is beginning to challenge dominant Western discourses in games which are felt to misrepresent Russia's past. In 2013, for example, sales of *Company of Heroes 2* were halted, as the game presented WW2

[89] Superdata, Digital Games in Latin America 2014: Game Monetization USA Summit Special Edition (2014).
[90] GEDIGames, *Relatório Final*, 105.
[91] Ibid.
[92] http://www.hoplon.com/site/.
[93] http://www.vostu.com/en/#/vostu.
[94] See http://beholdstudios.com.br/about/ and http://www.igf.com/2013finalistswinners.html.
[95] Cat Goodfellow, 'Patriot games: a brief history of Russian video gaming', *The Calvert Journal*, 4 December 2014. Available from http://calvertjournal.com/articles/show/3395/Russian-video-games-history.

Russians shooting their own soldiers in the back.[96] The government have indicated a willingness to take similar action with other games, if similar situations occur.[97]

Estimates of the size of the Russian gaming market vary between $1.0 and $1.5 billion.[98] This market is increasingly polarised towards online games, with Mail.Ru estimating that online gaming accounting for 64% of gaming activity in 2012.[99] In a manner similar to Poland, Russian gamers are focused on PC, with suggestions again that 98% of gamers here make use of this platform. As in Brazil, Android is the dominant smartphone platform in Russia, with 67% of gamers favouring it.[100]

Information on the studios themselves seems sparse, and it does not appear to be collated in any single location. Reporting focuses almost exclusively on the financial aspects of the industry, and in various presentations of market information. In part, this may be connected with a tendency of the Russian industry to be very inward looking; only recently, it seems, has there been an attempt to specifically target Western markets.[101]

Some Russian leaders

Much as with Brazil, there is no authoritative survey of Russian developers. Major players appear to include the 1C Company, founded in 1991 and one of the largest developers and publishers in Russia, with headquarters in Moscow. Predominantly specialising in simulations and strategy, they produce the popular *IL-2 Sturmovik* series.[102] Developer and publisher Alawar, founded in 1999, focus on free-to-play/in-app purchase models, with a broad portfolio of browser-based and downloadable games in a range of languages. According to their website, 1.5 million copies of their games are downloaded daily.[103] A relatively new entrant to the market, Zeptolab, the creator of *Cut the Rope*, represents what is possibly the most successful Russian gaming company in recent years. *Cut the Rope* has been downloaded more than 400 million times since its launch, and the studio has received a slew of awards, including a BAFTA in 2011.[104]

1.2.3 Republic of Korea

It was with the installation of computers in school study rooms in the early 1980s that Korea's homegrown games industry became established, although games were often seen simply as steps towards producing something 'more serious'. By 1990, the market was in a slump, losing out to the polish of the import market and struggling with piracy. However, the industry soon began to receive political support, with companies allowed to request the exemption of their staff from military service at critical points in a project. Although initially popular, console sales dwindled significantly throughout the 1990s, resulting in a modern market focused on the PC; restrictions of Japanese

[96] Colin Campbell, 'Why gaming's latest take on war is so offensive to Russians', *Polygon*, 25 June 2013. Available from http://www.polygon.com/2013/7/25/4553536/is-company-of-heroes-2-anti-russian.
[97] Matthew Handrahan, 'Russian government offers funding for "patriotic" games', *Gamesindustry.biz*, 9 October 2013. Available from http://www.gamesindustry.biz/articles/2013-10-09-russian-government-offers-funding-for-patriotic-games.
[98] Newzoo, *Introduction to the Russian Games Market* (2014), 19.
[99] @Mail.Ru Group, *Игровой рынок в России* (2012), 5.
[100] Newzoo, Russian Games Market, 21.
[101] See, for example, 'Russian Videogames Take the West by Storm', *ThinkRussia,* 24 April 2014. Available from http://www.thinkrussia.com/life-arts/russian-video-games-take-west-storm.
[102] http://www.1c.ru/eng/title.htm.
[103] See http://company.alawar.com/about.
[104] See http://www.zeptolab.com/.

imports (and a ban on Japanese on-screen text) cleared the way for the rise of a strong home industry around RPGs.[105] Paired with commercial online gaming, this led to substantial Korean successes in MMORPGs, many of which were virtually unknown in the West at that time. Most recently, Korea has seen a huge rise in professional gaming (e-sports), which has become a 'national pastime',[106] managed by the government-sanctioned Korean e-Sports Association (KeSPA).[107] In the last few years, there has also been an upsurge in mobile development.[108]

In 2012, the Korean domestic game market (presumably including hardware sales) was estimated at 9.752 trillion won ($8.84 billion), a 6.3% share of the international market, and was expected to grow to 11.3 trillion won by the end of 2014 (2014 game revenues are estimated to reach $3.36 billion according to Newzoo).[109] This is a slackening of growth by comparison to 2009-11, when the market grew by more than 12% each year, and growth for 2014 and 2015 is predicted to be less than 6%. By far the largest segment of this market was online games, accounting for almost 70% of revenues. Online games are particularly important in the export market, where they account for 91% of revenue.

In 2012, there were 957 companies in operation in the Korean games industry, focusing on the business of either production or distribution of games. This represented a fall of 60 from the previous year. Employment in production and distribution ran to 52,466 people, with a further 42,585 employed in retail and consumption, an average of 54.8 employees per company. Over the period 2010- 12, a slow rebalancing took place in this employment split, with production and distribution employment increasing by 3.9%, and retail and consumption employment falling by 4.2%.[110]

Some Korean leaders

Historic leaders in the MMORPG field, the massive developer/publisher NCSoft are responsible for both *Lineage* games, *Aion*, and *Blade and Soul*. The company also hold the publishing rights to both *Guild Wars* games.[111] In free-to-play PC and now mobile games, Nexon[112] are a significant presence, particularly as their long-term business model, of free-to-play with microtransactions, was one which has become standard in the mobile market[113]. Indeed, such 'freemium' approaches have been in circulation much longer in Korea than in the West,[114] and are thus more readily accepted.[115] Developer XL Games,[116] who last year released MMORPG *ArcheAge*, 'the closest thing

[105] Sam Derboo, 'A History of Korean Gaming', *Hardcore Gaming 101*, 13 July 2010, updated March 2014. Available from http://www.hardcoregaming101.net/korea/korea.htm.
[106] Paul Mozur, 'For South Korea, E-Sports Is National Pastime', *The New York Times*, 19 October 2014. Available from http://www.nytimes.com/2014/10/20/technology/league-of-legends-south-korea-epicenter-esports.html?_r=0.
[107] http://www.e-sports.or.kr/.
[108] Spencer, 'How The Korean Video Game Industry Has Changed', *Siliconera*, 8 August 2014. Available from http://www.siliconera.com/2014/08/08/korean-video-game-industry-changed/.
[109] See http://www.newzoo.com/free/rankings/top-100-countries-by-game-revenues/.
[110] Data from MCST and Kocca, 2013 *Guide to Korean Games, Industry and Culture: White Paper on Korean Games* (2013), barring Newzoo figure.
[111] http://global.ncsoft.com/global/.
[112] http://www.nexon.net/.
[113] Spencer, 'Korean Video Game Industry'.
[114] http://company.xlgames.com/en.
[115] Nick Wilson, 'ArcheAge Review', PcGamesN, 2014. Available from http://www.pcgamesn.com/archeage/archeage-review-progress.
[116] Cinderboy, 'ArcheVille – XLGAMES closing down mobile game tied to ArcheAge', *MMOCulture*, 5 September 2013. Available from http://mmoculture.com/2013/09/archeville-xlgames-closing-down-mobile-game-tied-to-archeage/.

to a true fantasy sandbox experience on the market',[117] have attempted to integrate these two approaches to gaming through a mobile game called *Archeville*. However, the experiment was (financially) unsuccessful, and closed after just six months.[118]

1.2.4 East Asia region

Beyond Korea, there are a number of other countries with successful games industries in East Asia, along with some with smaller or developing industries. The video games industry has had a home in East Asia from the 1970s, due to the early involvement of Japanese companies such as Taito (*Space Invaders*), Sega (*Zaxxon*), Namco (*Pac-Man*) and Nintendo (*Donkey Kong*),[119] as well as developers such as Melbourne House (Australia) and Andrew Bradfield and Harvey Kong Tin (New Zealand).[120] In more recent years, other parts of the region have become involved in the games industry, with China being of particular note.

The Chinese and Japanese games markets lead the region and, indeed, to a large extent the world. Newzoo's 2014 estimates[121] indicate the Chinese market reaching $17.87 billion, somewhat ahead of Japan's $12.22 billion. Both markets are, however, in growth, and those figures mark increases of 33.9% for China and 13.1% for Japan from 2013.[122] In 2013, the Chinese market was dominated by online client games (such as MMORPGs and casual competitive games); the Japanese market, conversely, saw a significant presence from mobile gaming, which took 50% of the market (compared with 15.4% in China). Other markets include Australia ($1.143 billion), Taiwan ($643 million), Vietnam ($233 million), Thailand ($200 million), Indonesia ($147 million), New Zealand ($140 million), Malaysia ($94 million), the Philippines ($93 million) and Hong Kong ($89 million). Thus China generates more games industry revenue than the entirety of the rest of East Asia.

There appears to be little or no recent aggregated information on developers in the majority of East Asian countries, mirroring the situation in Russia, although it is highly likely that the significant language barrier has played a part in our inability to discover material. Language is not a barrier for investigation of Australia and New Zealand, of course, but issues arise here too. The Australia government released data in 2013 covering the years 2011-2, demonstrating that 581 staff were employed in development companies in that period.[123] Beyond this we are left with informal or

[117] Notably, microtransaction games are sometimes criticised by players using the phrase pay-to-win, an indication that perceived advantage can be bought rather than earned through skill or determination (see Andy Hartup, 'Is free-to-play still pay-to-win?', Gamesradar+, 3 April 2013. Available from http://www.gamesradar.com/free-play-still-pay-win/).

[118] Martin Picard, 'The Foundation of *Geemu*: A Brief History of Early Japanese video games', *Game Studies*, 13.2 (2013). Available from http://gamestudies.org/1302/articles/picard.

[119] In the West, Freemium apps and games have received extensive public criticism for misrepresenting themselves as free. The ease of making in-app purchases through such products has presented problems for Apple (the maker of the iPhone and iPad), which has received significant pressure from the European Union to amend marketing information on its App Stores (see Sophie Curtis, 'Why apps are no longer "Free" on Apple iTunes', The Telegraph, 20 November 2014. Available from http://www.telegraph.co.uk/technology/apple/11244166/Why-apps-are-no-longer-free-on-Apple-iTunes.html).

[120] http://www.mobygames.com/company/krome-studios-melbourne; http://playitagainproject.org/creators/andrew-bradfield/.

[121] See http://www.newzoo.com/free/rankings/top-100-countries-by-game-revenues/.

[122] For China in 2013, see Newzoo, *Introduction to the Chinese Games Market* (2014). For Japan, see Jeffrey Grubb, 'Japan's gaming industry generated $10.8B in 2013 — half of that was from smartphones', VB|GamesBeat, 31 March 2014. Available from http://venturebeat.com/2014/03/31/japans-gaming-industry-generated-10-8b-in-2013-half-of-that-was-from-smartphones/.

[123] Australian Bureau of Statistics, *Film, Television and Digital Games, Australia*, 2011-12. Available from http://www.abs.gov.au/AUSSTATS/abs@.nsf/DetailsPage/8679.02011-12?OpenDocument.

membership-defined lists of studios which indicate relatively unreliable counts, such as that at tsumea.com (214 studios for Australia),[124] the New Zealand Game Developers Association (27 studios),[125] or the Game Association of the Philippines (22).[126] And as coverage of the nascent games industry in Burma notes, there is sometimes a tendency for individuals to define themselves outside the industry – as hobbyists, for example.[127]

Some East Asian leaders

Japan is host to two of the dominant companies in the international games sector, both as developers and publishers: Nintendo and Sony. Each company produces a broad portfolio of leading games, along with their own platforms, as well as publishing the work of many other studios (both second- and third- party). In addition, Japan-based GungHo Online Entertainment developed mobile hit *Puzzles & Dragons*, generating the second highest revenue from a mobile game ($1.5 billion) in 2014.[128] In China, although there are a number of local developers, few of these have made an impact beyond the country, with the exception of Five Minutes, developers of *Happy Farm* (the game that inspired the social farm game boom of which *Farmville* was part).[129] However, the huge Chinese investment holding company Tencent is owner or publisher of an increasing number of game properties, as well as significant interests in leading studios Riot Games and Epic Games.[130] Developers in Australia and New Zealand have also produced notable games. Australian studio Team Bondi developed critical success *L.A. Noire*,[131] while in the mobile market, Halfbrick Studios were responsible for hit game *Fruit Ninja*.[132] In New Zealand, Sidhe's *Shatter*,[133] and Grinding Gear Games' *Path of Exile*[134] have also received critical acclaim.[135] In addition, although critical reception was poor,[136] the Vietnamese game *Flappy Bird*, developed by Dong Nguyen (Nguyễn Hà Đông) and published by .GEARS Studios, became an international sensation, spawning a host of imitators.[137]

Importantly, a number of organisations in the East Asia region take on outsourced game development work from other studios. Perhaps the most notable among these is China's Virtuos,[138] but other examples include Vietnam's Glass Egg Digital Media, who have delivered art assets for a number of leading games developed in Western studios, particularly those focused around cars.[139]

[124] See http://www.tsumea.com/developers.
[125] See http://www.nzgda.com/studios/.
[126] See http://www.gdap.org.ph/about/member-companies/.
[127] Mary-Anne Lee, '4 up-and-coming games studios in Myanmar that you might not have heard of', *Games in Asia*, 20 October 2014. Available from https://www.techinasia.com/4-up-and-coming-games-studios-in-myanmar-that-you-might-not-have-heard-of/.
[128] See http://www.superdataresearch.com/blog/infographic-2014-digital-games-year-review/.
[129] Steven Millward, 'The Rise and Fall of China's First Hit Social Game (The One Zynga Ripped Off as FarmVille)', *Games in Asia*, 28 December 2012. Available from https://www.techinasia.com/rise-fall-china-happy-farm-social-game-2012/.
[130] See http://www.riotgames.com/tags/tencent and Brian Crecente, 'Tencent's $330M Epic Games investment absorbed 40 percent of developer [Updated]', *Polygon*, 21 March 2013. Available from http://www.polygon.com/2013/3/21/4131702/tencents-epic-games-stock-acquisition.
[131] See http://www.metacritic.com/game/xbox-360/la-noire.
[132] http://fruitninja.com/.
[133] http://www.shattergame.com/.
[134] https://www.pathofexile.com/.
[135] See http://www.metacritic.com/game/pc/shatter; http://www.metacritic.com/game/pc/path-of-exile.
[136] Metascore of 52: see http://www.metacritic.com/game/ios/flappy-bird.
[137] Ryan Singel, 'The rise and fall of Flappy Bird', *Wired.co.uk*, 13 February 2014. Available from http://www.wired.co.uk/news/archive/2014-02/13/flappy-bird.
[138] http://www.virtuosgames.com/.
[139] See http://www.glassegg.com/portfolio.php.

2. The Gaming Landscape: Context

The governments in the majority of the countries we explored are supportive of their games industries, recognising their potential contributory value to the economy and their potential to have international impact. Significant differences exist, however, in the support mechanisms in place, and particularly in distinctions about the kinds of industries included, for example, in creative economy strategies. Some governments also offer these industries tax relief, and some provide direct funding/investment mechanisms which allow new studios to flourish and ambitious projects to be delivered.

A sense of this variety is conveyed in a recent report for the European Commission which identified forms of policy activity related to the videogame industry. These include:

1. Political leadership (e.g. lobbying for games development, education etc. as above
2. Structural support to the videogame industry (e.g. cluster development; incubation of companies and skills development)
3. Funding (e.g. tax breaks or grants for research and development)
4. Regulation (which may enable or, conversely inhibit production,
5. circulation and/or consumption).[140]

The report's authors note that this support can sometimes prove inhibiting and divisive within the industry, resulting in accusations of protectionism, and between European countries, resulting in the attribution of blame for the migration of talent. We will pick up and discuss the different policy activities in the following pages.

2.1 Creative industries? Policy and games

Direct policy support for the video games industry is commonly articulated through cultural policy, the domain of which includes aspects of regulation of the economy and indeed content, sometimes in the form of classification and censorship. In policy terms, the majority of the countries considered here increasingly include the games industry in a classification of creative industries (CIs), a move which marks an alignment away from emphasising the technological basis of the work, which had formerly resulted in tendencies to ICT-based classification, and towards the creativity in the game creation process.

It is useful here to cite a definition of the creative industries in order to understand the emphasis of the term. This example derives from current assessments by the UK

[140] James Stewart and Gianluca Misuraca, *The Industry and Policy Context for Digital Games for Empowerment and Inclusion: Market Analysis, Future Prospects and Key Challenges in Videogames, Serious Games and Gamification* (Luxembourg: Publications Office of the European Union, 2013), 71. Available from http://ipts.jrc.ec.europa.eu/publications/pub.cfm?id=6099.

Department of Culture Media and Sport, which states that

> The Creative Industries were defined in the Government's 2001 Creative Industries Mapping Document as "those industries which have their origin in individual creativity, skill and talent and which have a potential for wealth and job creation through the generation and exploitation of intellectual property".[141]

The UK has categorised the games industry as a creative industry since the mid- 1990s, and, the approach adopted by the DCMS has had a significant impact on approaches to defining the sector elsewhere.[142]

In the context of the remit of this report, it is worth noting the critical take in noting the shift from 'cultural' to 'creative' industries signalled in DCMS policy and its influence.[143] Whatever the generalizations of policy discourse and economic assessments, the primary output of creative industries is manifest in symbolic expression, meaning and experience for those who create and consume them. This quality is one that frames their discussion in a manner quite distinct from that of the utility of other areas of production. It is also a quality which connects the economic and industrial objectives of policy with a wider cultural sphere which emphasises the public value of aspects of the subsidized arts and heritage, and indeed the fundamental ways in which creative producers think about their identities and work – as Germans, Brazilians and so on.

Not surprisingly, there is slippage in terminology and concept to recognize here, which impacts upon the ways in which gaming is understood and valued beyond economic returns and in the context of the purpose of policy directives. As we discuss below, these are issues which impact upon the status afforded gaming as an activity relative to wider cultural values and national contexts which are articulated in approaches to policy, funding and education and which are likely to impact upon British Council strategies.

While there is general agreement about the value of CIs and the contribution that creativity makes to the economy across the EU,[144] terminology continues to be somewhat inconsistent. In France, 'cultural industries' includes video games, under the cultural domain of audiovisual and multimedia.[145] In Finland, the culture industries have only recently become a central concept, with focus previously resting on arts, heritage, cultural services, participation and access. There is a perceived division between culture industries and wider copyright industries, and video games fall outside the culture industries, along with the press, radio and television. Although this narrow definition is apparently the principle underlying the recent drive by the Ministry of Education and Culture to promote the Finnish creative economy, some policy documentation (for example the 2006 report drafting the national creativity

[141] Quoted in DCMS, *Creative Industries Economic Estimates*, 4.

[142] Stuart Cunningham, 'Trojan horse or Rorschach blot? Creative industries discourse around the world', *International Journal of Cultural Policy* 15.4 (2009), 375-386; Terry Flew and Stuart Cunningham, 'Creative industries after the first decade of debate', The Information Society 26.2 (2010), 113-123.

[143] For example, Nicholas Garnham, 'From cultural to creative industries: An analysis of the implications of the "creative industries" approach to arts and media policy making in the United Kingdom', *International Journal of Cultural Policy* 11.1 (2005), 15-29; J. McGuigan, Rethinking Cultural Policy (Maidenhead: Open University Press, 2004).

[144] For example, as evinced in the EU Green Paper of 2010: European Commission, *Unlocking the potential of cultural and creative industries* (27 April 2010). Available from http://eur- lex.europa.eu/legal-content/EN/TXT/HTML/?uri=CELEX:52010DC0183&from=EN.

[145] See http://www.culturalpolicies.net/web/france.php?aid=423.

strategy) prefer the British concept of creative industries.[146]

In Germany, the concept of creative industries is increasingly in use. The German government deploys a notion of culture industries which excludes video games (although these do fall under the broader creative industries remit). The cultural field is generally divided into three sectors – private cultural enterprises, state of municipal publicly financed institutions or activities and not-for-profit intermediary organisations – with the term Kulturwirtschaft referring to all private businesses and independent contractors working in the different cultural fields. Significantly, culture and creative industries are seen as an engine for growth and employment.[147]

Cultural policy in Poland has historically been considerably more limited by way of comparison with the west of Europe. At the point of accession to the EU, in 2004, there was no awareness in Poland of the significance of the economic value of the cultural sector, with documents dismissively referring to 'the so-called cultural industries'. Over the following decade, Polish cultural policy has changed markedly. Initially defined, arbitrarily, as books, artistic music, film and audiovisual industries, cultural industries later expanded to include related goods and services, such as cultural tourism and media. Following the production of a 2009 report heavily influenced by the British model, the significance of creative and cultural industries became increasingly clear, and attempts were made to define them, with a 2011 document from the Ministry of Culture and National Heritage including computer games as a cultural industry.[148]

Beyond the EU, the picture is far less clear. Brazil has built a reputation in recent years for (relatively) enlightened cultural policy, following the valorisation of culture by Gilberto Gil. It has, however, been suggested that the country's cultural policy is going through a process of reversal which moves away from Gil's approach,[149] and certainly the Ministry of Culture's Plan for a Creative Economy Secretariat, introduced at the start of the present government, talks about video games a lot but hesitates in classifying them as part of the cultural industries, even while presenting a tremendously broad interpretation of the creative economy.[150]

In Russia, cultural industries are typically treated as part of the secondary or tertiary production sector. The sector exists in a space which is 'beyond cultural policy-making' and it is thus suggested that the Ministry of Culture has little influence here.[151] Development of cultural industries has historically been shaped by international projects due to active participation in international exchanges (e.g. with Council of Europe). A 2013 cultural policy review noted that Russian cultural policy is at a turning point, indicating that the link between culture and economy was sometimes missing, and that policy to support the creative economy is essential. Notably, video games are here included within the remit of the cultural industries, following a more general

[146] See http://www.culturalpolicies.net/web/finland.php?aid=423.
[147] See http://www.culturalpolicies.net/web/germany.php?aid=423.
[148] Katarzyna Kopecka-Piech, 'Creative and Cultural Industries Policy in Poland of 2012. Status, Strategies and Inaugurating Projects', *Transformacje* 3-4 (78-79, 2013), 315.
[149] Sergio Amadeu da Silveira, Murilo Bansi Machado and Rodrigo Tarchiani Savazoni, 'Backward march: the turnaround in public cultural policy in Brazil', *Media, Culture & Society* 35.5 (2013), 549–564.
[150] Ministério da Cultura, *Plano da Secretaria da Economia Criativa: Políticas, diretrizes e ações 2011 a 2014* (Brasilia: Ministério da Cultura, 2nd edition, 2012), and see Silveira et al, 'Backward march'.
[151] See http://www.culturalpolicies.net/web/russia.php?aid=423.

trend in the EU, and a talent drain in this field is identified.[152]

In the Republic of Korea, the first legal provision for the cultural industries was instigated in 1999, and support and promotion for these industries was set in place.[153] The Korean Cultural Industry Promotion Act (1999) defined games as cultural goods,[154] and the games industry has received extensive support, particularly around online games. The passage of the Game Industry Promotion Act in 2006 required the Minister of Culture, Sports and Tourism to 'formulate and execute a master plan' for the promotion of the games industry, and the Act more generally mandated support for professional training, technical development and regulation (game rating), as well as the promotion of game *culture* (our emphasis) and the prevention of 'excessive immersion in games'.[155]

Elsewhere in East Asia, the location of the games industry in policy terms varies. Australia's 2013 cultural policy Creative Australia specifies support for games, and institutes specific funding (but see below, p. 39). In China, definitions vary across the country – the government made clear distinctions between core, peripheral and culture-related industries in the 10th Five Year Plan (2002), but different cities have created their own classifications.[156] In Japan, video games have been recognised as part of culture and the arts since 2001, as media arts, and continue to be so in the most recent cultural affairs policy.[157] Vietnam also recognises games as part of the cultural industries, but central and local leaders often do not see the cultural industries as significant, meaning that few initiatives have been put in place to support them.[158] In New Zealand, games are not classed as a cultural industry,[159] but are apparently part of the creative industries.

In some countries, a sense of games as a form of digital media is clearly in evidence. In Malaysia, video games are seen as one of the creative multimedia industries,[160] a classification within the broader creative industries (which also include arts and heritage). Singapore has games as part of the media and communications subsection of the creative industries (as opposed to arts and culture, and design).[161] Taiwan use a broad idea of cultural and creative industries, within which digital content sits (presumably including games).[162] And in Hong Kong, games appear as part of the

1542 Kirill Razlogov and Terry Sandell (eds.), Cultural Policy in the Russian Federation: Review (Council of Europe, 2013). Available from http://www.coe.int/t/dg4/cultureheritage/cdcpp/plenary/CDCPP2013- 24_EN.pdf.

153 See http://www.worldcp.org/southkorea.php?aid=423.

154 An-Chi Tung and Henry Wan Jr., 'High Tech, Low Fertility, Korea Becomes a Role Model in Cultural Industrial Policy', *Korea and the World Economy*, 11. 2 (2010), 215.

155 See http://elaw.klri.re.kr/eng_mobile/viewer.do?hseq=28802&type=sogan&key=8.

156 KEA European Affairs, *Mapping the Cultural and Creative Sectors in the EU and China*, IPR2, 2011, 10. Available from http://www.keanet.eu/studies-and-contributions/mapping-the-cultural-and-creative-sectors-in-the-eu-and-china/.

157 Kazuaki Tani, 'Fundamental Law for Promotion of Culture and Art (FLCPA) and the Feature of Cultural Policy in Contemporary Japan', *Bulletin of Japanese Language Center for International Students*, 29 (2002), 118. Available from http://repository.tufs.ac.jp/bitstream/10108/20958/1/jlc029007.pdf; Agency for Cultural Affairs, *Policy of Cultural Affairs in Japan* (2013), 21. Available from http://www.bunka.go.jp/english/.

158 See http://www.worldcp.org/vietnam.php?aid=423.

159 See http://www.mch.govt.nz/what-we-do/cultural-sector-overviews/cultural-policy-new-zealand/5-cultural-industries.

160 See http://www.mscmalaysia.my/creative_multimedia.

161 See http://www.wda.gov.sg/content/wdawebsite/L207-AboutWSQ/L301-WSQIndustryFramework-Creative.html.

162 Amanda Lin and Angela Wu, Sector Report: Creative Industries Taiwan (London: UKTI, 2010), 3.

creative industries, under the classification of digital entertainment.[163]

Elsewhere, we can see the formative role of UK activity in this policy field. The Philippines have adopted the UK definition of creative industries and added to it;[166]4 again video games do not appear to be considered to be cultural forms.[165] The Thai government highlights the creative economy as one of the strategies in the 11th National Economic and Social Development Plan.[166] Video games appear to fall within their classification of content,[167] but in general the Thais seem happy to accept and then augment external definitions of creative industries.[168] Indonesia signed an agreement with the UK in 2012 to support cooperation in the creative industries, and games are specifically named as an area of cooperation.[169] Finally, Burma does not currently have policy in place to support the creative industries more broadly, although safeguarding and promoting Burmese culture has been a priority of the current government, and is part of the framework of economic and social reform.[170] A recent British intervention, by Lord Puttnam, focused on the place of culture in public policy, and elaborated on ideas presented in British Council's *Culture Matters* report.[171]

Regulation: classification and censorship

Regulation of the games industry runs hand in hand with regulation of other creative and cultural industries. In the instances discussed here, the imperatives of the creative economy serve to illuminate the cultural mores and conventions of particular societies. At present the predominant form impacting here lies in the control of content and managing access for some consumers.

In the EU countries, the dominant regulatory structure is signalled through PEGI, Pan-European Games Information, a system devised by the Interactive Software Federation of Europe.[172] The PEGI system mandates minimum purchase ages and offers content markings on game packaging. In 2012 this supplanted BBFC ratings in the UK, where the Games Rating Authority now classify games according to the PEGI framework.[173] The system has legal standing in both France, where it is set to become

[163] See http://www.createhk.gov.hk/en/service_digital.htm.
[164] P. J. Castillo, 'Developing AEC into a Global Service Hub: The Case of the Creative Industries in the Philippines' in T.S. Tullao and H. H. Lim (eds.), *Developing ASEAN Economic Community (AEC) into a Global Services Hub*, ERIA Research Project Report 2011-12 (Jakarta: ERIA, 2012), 272.
[165] As a review of the website of the National Commission for Culture and the Arts demonstrates: see http://www.ncca.gov.ph/main.php.
[166] See http://www.unescobkk.org/culture/fostering-creativity/creativity-and-diversity-of-cultural-expressions/laos/creative-economy-in-thailand/.
[167] See http://www.thaigov.go.th/en/council-house/item/57595-opening-address-by-prime-minister-abhisit-vejjajivathailand-international-creative-economy-forum.html.
[168] National Economic and Social Development Board, *Thailand's Creative Economy* (2011), 5. Available from http://eng.nesdb.go.th/Default.aspx?tabid=427.
[169] See *Memorandum of Understanding Between the Government of the Republic of Indonesia and the Government of the United Kingdom of Great Britain and Northern Ireland on Cooperation in the Field of Creative Industries*, 2012. Available from http://www.britishcouncil.or.id/sites/britishcouncil.id/files/indonesia_mou_ekraf_ri_inggris.pdf.
[170] MITV News, 'Role Of Culture: Public Policy & Creative Industry', *MITV News*, 9 October 2014. Available from http://myanmarinternationaltv.com/news/role-culture-public-policy-creative-industry.
[171] British Embassy Rangoon and UKTI Burma, 'UK Trade Envoy Lord Puttnam visits Burma', 9 October 2014. Available from https://www.gov.uk/government/world-location-news/uk-trade-envoy-lord-puttnam-visits-burma.
[172] http://www.pegi.info/en/index/id/952.
[173] Ukie admin, 'PEGI ratings become UK's single video game age rating system', 30 July 2012. Available from http://ukie.org.uk/content/pegi-ratings-become-uk's-single-video-game-age-rating-system; http://www.videostandards.org.uk/gra/.

mandatory,[174] and Finland, where ratings must be approved by KAVI, the National Audiovisual Institute.[175] Although Poland appeared to view PEGI favourably, there was no legally mandated system there at least until 2008,[176] and no clear indication that this has changed subsequently.

In Germany, oversight of video game content falls into the purview of the USK (Entertainment Software Association),[177] who use their own classification system, which is similar to but distinct from the PEGI system. Restrictions on games in Germany have long been contentious, particular around sensitivities to violence, an area in which the games sector has seen extensive debate internationally, with a variety of actors attempting to prove or disprove that violent games make people more violent. In Germany, these debates came to a head in 2009, when interior ministers asked the Bundestag to impose a ban on violent video games, following a shooting. In response to this request, German industry leader Crytek threatened to relocate its business to a different country,[178] and a public petition with 70,000 signatures was filed, forcing a review.[179] Although any ban was deferred in favour of further media literacy initiatives,[180] there is clearly a sensitivity here, and one which is not limited to Germany within Europe: Switzerland, for example, voted for a violent games ban in 2010.[181]

Beyond the EU, the regulation of games functions in various ways. Korea, Japan, Taiwan have specific organisations tasked with rating games: the Game Rating Board,[182] the Computer Entertainment Rating Organisation,[183] and the Digital Games Rating Committee.[184] In Singapore, regulating video game content falls under the brief of the Media Development Authority.[185] In Russia, game ratings are chosen by the publisher, in broad conformation with PEGI standards,[186] and there is support from the Ministry of Culture. New Zealand harmonises the regulation of games with the regulation of film, under the Office of Film and Literature Classification.[187] In the Philippines, while there is presently no clear role here, a bill was advanced in December 2014 proposing a similar arrangement, that the Movie and Television Review and Classification Board

[174] Osborne Clarke, 'France to make PEGI rating mandatory?', 29 October 2014. Available from http://www.osborneclarke.com/connected-insights/publications/france-make-pegi-rating-mandatory/.
[175] KAVI, 'Instructions for Providers of Digital Games in Finland', 1 January 2014. Available from https://kavi.fi/sites/default/files/documents/instructions_for_providers_of_digital_games.pdf.
[176] See http://eur-lex.europa.eu/legal-content/EN/TXT/?qid=1420293308213&uri=URISERV:co0002.
[177] http://www.usk.de/.
[178] Cevat Yerli, 'Crytek Threatens to Leave Germany', *IGN*, 5 August 2009. Available from http://uk.ign.com/articles/2009/08/05/crytek-threatens-to-leave-germany.
[179] Jacob Aron, 'Online petition stalls plan to ban violent videogames in Germany', *The Guardian: Games Blog*, 28 July 2009. Available from http://www.theguardian.com/technology/2009/jul/28/germany-violent-videogames.
[180] Phil Elliott, 'EA backs German govt decision over videogame policies', *Gamesindustry.biz*, 20 May 2010. Available from http://www.gamesindustry.biz/articles/ea-backs-german-govt-decision-over-videogame-policies.
[181] Ben Parfitt, 'Switzerland passes violent games ban', *MCV*, 19 March 2010. Available from http://www.mcvuk.com/news/read/switzerland-passes-violent-games-ban.
[182] http://grb.or.kr/.
[183] http://www.cero.gr.jp/.
[184] http://www.gamerating.org.tw/gsgi_way.php.
[185] See http://www.mda.gov.sg/RegulationsAndLicensing/ContentStandardsAndClassification/Pages/Overview.aspx.
[186] Sergey Galyonkin, 'Russian age ratings for videogames', *Red Buzz*, 14 March 2014. Available from http://red-buzz.com/2014/03/russian-age-ratings-for-videogames/.
[187] http://www.classificationoffice.govt.nz/#newdomain.

should also rate video games.[188] But at present, as in Malaysia, it would appear that imported North American ESRB (Entertainment Software Rating Board) ratings are the default position.[189] As in the EU, regulation can also be contentious. In Australia, classification is the responsibility of the Australian Classification Board.[190] However, until 2012, the classification for games included no approved adult rating, meaning that any game rated as suitable for adults only was banned by default (or, occasionally, reduced in classification).[191]

Classification in Brazil raises a broader issue. It is performed by Dejus, the Department of Justice, Rating, Titles and Qualification, through the Advisory Rating Coordination (COCIND), in accordance with the system used for films. Historically, however, this has been shown to be limiting, as the Brazilian system has rejected external classifications, making it highly problematic for overseas games providers (such as the Apple App Store) to fulfil government requirements.[192] In 2013, though, a collaboration was created between COCIND, PEGI, the USK, and the ESRB to agree on a combined programme of age rating for games material delivered digitally. This International Age Rating Coalition (IARC) has devised an automated process to assign territory-appropriate ratings based on a developer questionnaire. It also offers a generic rating system which can be deployed by countries without an existing age classification framework.[193] This may prove significant, as China,[194] Indonesia, Hong Kong, Vietnam, Burma and Thailand appear to have no system in place at present.

Even without systems in place, of course, governments have a role in regulation of content which manifests itself through other structuring practices and cultural responses to games. Action may be direct or indirect when considering gaming production, circulation and consumption. One place in which this is seen to take place is through content-related restrictions. Many countries impose bans when games engage with politically sensitive issues, or issues of national pride. Recent examples of such interventions include the halting of sales of *Company of Heroes 2* in Russia (see above), and the banning of *Tropico 5* in Thailand due to concerns of the military government that it might undermine peace and order.[195] Significantly, also, China had a longstanding ban on video game consoles, from 2000 until its official lifting in January 2014.[196]

Other prompts for regulatory intervention are moral panics and the pathologisation

[188] PTVNews, 'Solon says MTRCB should also regulate video games and billboards', *PTV News*, 29 December 2014. Available from http://ptvnews.ph/bottom-news-life2/11-11-nation-submenu/41240-solon-says-mtrcb-should-also-regulate-video-games-and-billboards.
[189] Game Politics, 'Malaysian Consumer Advocate on Games: It's Up To Parents to Prevent "Fat, Violent Kids"', *GamePolitics.com*, 17 March 2009. Available from http://gamepolitics.com/2009/03/17/malaysian-consumer-advocate-games-it039s-parents-prevent-quotfat-violent-kidsquot#.VQtH52TtlHw.
[190] http://www.classification.gov.au/Information/Pages/Home.aspx.
[191] ABC News, 'R18+ video game rating passes Senate', *ABC News*, 19 June 2012. Available from http://www.abc.net.au/news/2012-06-19/r18-video-game-rating-passes-senate/4078460.
[192] Protasio, 'Battle for Brazil's Game Future', 3.
[193] See https://www.globalratings.com/about.aspx.
[194] C. Custer, 'Should China adopt a game rating system?', *Games in Asia*, 28 April 2014. Available from https://www.techinasia.com/should-china-adopt-a-game-rating-system/.
[195] Mike Rose, 'Tropico 5 banned in Thailand, as it "might affect peace and order"', *Gamasutra*, 4 August 2014. Available from http://www.gamasutra.com/view/news/222522/Tropico_5_banned_in_Thailand_as_it_might_affect _peace_and_order.php.
[196] Alexa Rea Corriea, 'China's free trade zone regulations set, ready for video game console sales', *Polygon*, 21 April 2014. Available from http://www.polygon.com/2014/4/21/5635800/china-free-trade-zone-regulations-lift-console-ban.

of video game ‘addiction’. In 2010, *Time* magazine reported that South Korean psychologists suggested some 10% of schoolchildren showed signs of video game addiction, prompting the government to impose a shutdown which prevented them from playing games between midnight and 8 a.m.[197] More recently, it has been suggested that games should be regulated as addictive substances,[198] but regulations have in fact been weakened rather than tightened.[199] In China, laws mandate that younger players are protected from online game addiction with special programming code which will, for example, reduce their rewards once they have played for more than three hours.[200] In Thailand, the 11th National Development Plan also expresses concern about the volume of children addicted to online games.[201]

By way of contrast, within the EU, these issues are of less concern; in the UK, for example, a document released by the Office of Science and Technology indicates that only a minority play games excessively, and that there are no clear criteria with which to diagnose video game addiction in any case.[202]

2.2 Funding support

Funding to support game development can stem from a variety of sources. A recent report by TIGA identified 10 distinct forms of funding and support: equity investment (four types); debt; crowd-funding; commissions and advances; project finance; government-backed business funding; and tax rebate schemes.[203] These funding sources are available to differing extents and with differing levels of ease across the five EU countries explored. In each country, government and industry bodies are working to attract additional investment and finance, and loans are available to support start-ups and more established companies as might be expected. Notable here is Poland’s progressive NewConnect market, which allows investors to purchase shares in small companies.[204]

Variations appear in crowd-funding and government support across the five countries, and are worthy of review. Currently highly popular, crowd-funding is supported through a variety of organisations and is becoming increasingly competitive. Perhaps the best-known crowd-funding platform for games, Kickstarter, regulates access such that only residents of 10 countries are allowed to create projects; of our EU countries, only the UK is included (notably, from the broader group, Australia is also eligible).[205]

[197] Geoffrey Cain, ‘South Korea Cracks Down on Gaming Addiction’, *TIME*, 20 April 2010. Available from http://content.time.com/time/world/article/0,8599,1983234,00.html.
[198] Jon Fingas, ‘South Korea debates the wisdom of a video game addiction law’, *EngadgetUK*, 23 June 2014. Available from http://www.engadget.com/2014/06/23/korea-debates-game-addiction-law/.
[199] Straits Times, ‘South Korea to allow children to play online games after midnight’, *The Straits Times*, 1 September 2014. Available from http://www.straitstimes.com/news/asia/east- asia/story/south-korea-allow-children-play-online-games-after-midnight-20140901.
[200] C. Custer, ‘Report finds China’s anti-gaming-addiction systems are not working’, *Games in Asia*, 12 March 2014. Available from https://www.techinasia.com/report-finds-chinas-anti-gaming-addiction-systems-are-not-working/.
[201] National Economic and Social Development Board/Office of the Prime Minister, *The Eleventh National Economic and Social Development Plan* (2012-2016) (Bangkok, 2011), 46
[202] Office of Science and Technology, *Impacts of Video Games*, Post Note 405, 15 March 2012, 1. Available from http://www.parliament.uk/business/publications/research/briefing-papers/POST-PN-405/impacts-of-video-games.
[203] TIGA, *Sources of Funding: The Sinews of Business* (2014). Available from http://www.tiga.org/repository/documents/editorfiles/onlinesubscribers/tiga_sources_of_finance_document.pdf.
[204] See http://www.newconnect.pl/?page=root_en.
[205] See http://www.kickstarter.com.

However, other large platforms known for funding video games, such as Indiegogo, are more broadly available. In France, strict limitations on crowdfunding have hitherto restricted this mode of operation, but new laws in place from October 2014 aim to clarify the situation around this funding mode.[206] In Germany, crowd-investment has been a site of innovation,[207] and in Poland a home-grown equivalent of Kickstarter, Polak Potrafi, has taken between 70 and 75% of the market.[208]

Direct government funding again sees differences between countries, but usually falls into two groupings: innovation funding, and then funding more specifically focused around the creative industries and games. General innovation funding is broadly available across the EU, with four of our five focus countries each offering their own examples, through schemes such as the French 'Innovative New Companies' or through organisations such as the UK's Innovate UK. In Poland, local funding is more limited, but there are a number of pan-EU options available. Funding for games can also come from a variety of other sources, where games are deployed in pursuit of other projects. In the UK, for example, the development of *Dear Esther* received funding from the Arts and Humanities Research Council;[209] in Germany, consciousness of the complexity of funding options available has led a group of independent developers to produce a list of 'Public Funding for Indies'.[210]

Funding focused around games is available in the UK, France, Germany and Finland. In the UK, the majority of funding for games is rolled up into general innovation funding, but Creative England offer direct games funding through the GameLab programme,[211] and Abertay University have run a Games Prototype Fund which provided grants for original IP (although this has now closed).[212] TIGA have recently proposed the creation of a Creative Content Fund to invest in the next generation of games businesses.[213] In France, there is the ongoing FAJV (Fonds d'aide au jeu video), jointly funded by the Ministry for the Economy, Finance and Trade and the Centre National du Cinéma et de l'Image Animée, which provides production grants to the video games sector.[214] In Germany, support is disbursed to the states, with regional funding available for multimedia and interactive content from a number of institutes.[215] Historically, Gamecity Hamburg have offered prototype production funding, but this scheme is presently closed.[216] The Finnish game industry support scheme, Skene, delivered by the Finnish Funding Agency for Technology and Innovation (Tekes) is often held up

[206] Annabelle Richard, 'French crowdfunding laws to change', *Out-Law.com*, 1 October 2014. Available from http://www.out-law.com/en/articles/2014/october/french-crowdfunding-laws-to-change/.
[207] E.g. Companisto, 'the first equity-based crowfunding platform for everyone': see https://www.companisto.com/en/press.
[208] http://polakpotrafi.pl/; and see Adrian Senecki, 'Crowdfunding in Poland: Can a Pole Do It?', *Bitspiration*, 7 July 2014. Available from http://bitspiration.com/news/technology/crowdfunding-in-poland-can-a-pole-do-it/.
[209] See Adam Oxford, 'Dear Esther: An open letter for story telling in games', *Arts and Humanities Research Council*, 15 August 2012. Available from http://www.ahrc.ac.uk/News-and-Events/Features/Pages/Dear-Esther.aspx.
[210] The list currently runs to 26 different funding options; see https://docs.google.com/spreadsheet/ccc?key=0AntfPfNv0q8ZdFRxcXNyeXZ3Tkg1M2hQbzZ2cWRPSUE&hl=en_US#gid=0.
[211] http://www.creativeengland.co.uk/games/funding.
[212] TIGA, *Sources of Funding*, 45.
[213] Richard Wilson, 'Why we need Lottery Funding for the Little Guy', *Gamesindustry.biz*, 15 September 2014. Available from http://www.gamesindustry.biz/articles/2014-09-15-why-we-need-lottery-funding-for-the-little-guy.
[214] See http://www.cnc.fr/web/fr/fonds-d-aide-au-jeu-video-fajv.
[215] See http://www.biu-online.de/en/topics/german-games-industry/government-aid.html.
[216] MEDIA Desk Denmark, *European Game Support Systems* (2010), 12. Available from http://www.mediadesk-vlaanderen.eu/files/European_Game_Support.pdf.

as an example of good practice here. Skene holds an overall budget of €70 million, with an annual allocation of more than €8 million, which is available for a variety of activity, including funding for development of business models, cross media concepts and formats.[217]

Lastly, both France and the UK have established tax credit systems for their games industries. The French scheme (CIJV) was introduced in 2008, although eligibility criteria have just been reformed;[218] UK tax relief was introduced in 2014 after several years of work. However, EU prohibitions on state aid make the introduction of such schemes delicate, and there was concern in 2012 that the exception made for gaming would not be extended.[219] Tax breaks as these must also be considered in light of the extensive use of tax credit schemes in North America, a principal competitor for games industry location. For example, GamesIndustry.biz were able to index 28 such schemes in 2013.[220]

Beyond the EU, there is evidence of government investment and tax support in a number of countries. However, there is also a sense that some of this kind of support is being curtailed, and that some is restricted on ideological grounds. In Russia for example, in 2010 the government indicated a desire to support 'patriotic games',[221] with this being restated in 2013.[222] In Australia, the Interactive Games Development Fund was announced in 2012, with a $20 million budget, but this stream was suddenly halted in mid-2014, with $10 million unspent.[223] Similarly, funding is also closing down in Malaysia, with the RM 100 million Creative Industry Development Fund, launched in 2011, ending in June 2014.[224]

Conversely, there are also signs of positive developments in this area. In New Zealand, the Labour party have indicated they will make the games industry eligible for New Zealand Screen Production Grants, should they be elected.[225] The Singaporean Media Development Agency provide grants for development assistance, among other things.[226] In Brazil, video games were admitted to the remit of the Cultural Incentive

[217] See http://www.tekes.fi/en/programmes-and-services/tekes-programmes/skene/services/.
[218] European Game Developers Federation, 'Green light from Brussels for the reform of the French video game tax credit: the French video games trade association SNJV welcomes the imminent entry into force of the new provisions', 15 December 2014. Available from http://www.egdf.eu/green-light-from-brussels-for-the-reform-of-the-french-video-game-tax-credit-the-french-video-games-trade-association-snjv-welcomes-the-imminent-entry-into-force-of-the-new-provisions/.
[219] Craig Chapple, 'EU indicates it will lift block on games tax breaks', *Develop*, 16 March 2012. Available from http://www.develop-online.net/news/eu-indicates-it-will-lift-block-on-games-tax-breaks/0111488.
[220] Brendan Sinclair, 'Gaming Tax Credits: A Developer's Guide to Free Money', *Gamesindustry.biz*, 24 May 2013. Available from http://www.gamesindustry.biz/articles/2013-05-22-gaming-tax-credits-a-developers-guide-to-free-money.
[221] Simon Shuster, 'Russia attempts to turn the patriotic tide by funding new video games', *The Telegraph*, 7 June 2010. Available from http://www.telegraph.co.uk/news/worldnews/europe/russia/7809066/Russia-attempts-to-turn-the-patriotic-tide-by-funding-new-video-games.html.
[222] Handrahan, 'Russian government'.
[223] Luke Hopewell, 'Government Pulls Funding For Aussie Video Games Industry', *Kotaku Australia*, 13 May 2014. Available from http://www.kotaku.com.au/2014/05/government-pulls-funding-for-aussie-video-games-industry-in-federal-budget/.
[224] See http://www.skmm.gov.my/Content-Development/Overview/Dana-Pembangunan-Industri-Kreatif-%28DPIK-SKMM%29.aspx.
[225] Siobhan Keogh, 'Siobhan Keogh: Should video games get government funding?', *The New Zealand Herald*, 22 August 2014. Available from http://www.nzherald.co.nz/entertainment/news/article.cfm?c_id=1501119&objectid=11312668.
[226] See http://www.mda.gov.sg/IndustryDevelopment/GrantAndSchemes/Pages/overview.aspx.

Law (Rouanet) in December 2011, allowing them to receive access to tax relief.[227] And in the more developed games economies of the Republic of Korea and Japan, similar approaches to cultural promotion seem to be in place, with Korea's Creative Content Agency offering its Big Indie Forty scheme to support promotion and localisation of Korean games,[228] and Japan's Ministry of Economy, Trade and Industry achieving the same ends through the Cool Japan initiative.[229]

2.3 Education and training

Education and training is clearly significant in the promotion of the creative industries, and the games industry is no exception. However, our research also indicated the strong relationship between educational institutions and artistic work, with many artists having connections with or working at universities.

The games industry relies heavily on skilled graduates (a UK study indicated that 73% of industry respondents were graduates),[230] and these are generated principally through two mechanisms: through high-quality general education, particularly in STEM subjects, and through specific games-focused education. All of our EU survey countries can demonstrate high-quality general education, with this often being deployed in support of a case for any given country's games industry.[231] Games-focused education is represented by increasingly large volumes of provision in universities and other educational institutes but, in the UK at least, the Next Gen report indicated that there was a substantial oversupply of graduates from such courses, and that these graduates were in many cases not sufficiently prepared to work in the industry.[232] In Poland, the situation seems similar if not even more serious, with a rapidly developing industry which has not historically been supported by the education system, along with a government which has been slow to take it seriously.[233]

There are, however, specialist games institutes that seem to invite attention, either for the quality of their provision or for their novelty within the prevailing educational climate: the UK Centre for Excellence in Computer Games Education at Abertay University and GamerCamp at Birmingham City University (both offering workplace simulation),[234] the Ecole Nationale du Jeu et des Médias Interactifs Numériques (ENJMIN, a public school in France devoted to this field),[235] the Games Academy,[236] and the European Academy of Games.[237]

[227] Patrick Bruha, 'Introduction To Rouanet Law', *The Brazil Business*, 8 October 2014. Available from http://thebrazilbusiness.com/article/introduction-to-rouanet-law; and see http://www.cultura.gov.br/documents/10895/939065/Portaria+no%20116.pdf/de16dd3e-113f-461d-b0b5-56598889a562.
[228] Mary-Anne Lee, 'Did you know that the South Korean government actively supports its indies?', *Games in Asia*, 30 April 2014. Available from https://www.techinasia.com/did-you-know-that-the-south-korean-government-actively-supports-its-indies/.
[229] See http://www.meti.go.jp/english/policy/mono_info_service/creative_industries/creative_industries.html.
[230] Livingstone and Hope, *Next Gen*, 23.
[231] For example, Neogames and Tekes Skene, *Game Industry of Finland* and http://us.polskasvac.org/502-video-games-industry-in-poland/.
[232] Livingstone and Hope, *Next Gen*.
[233] Dan Crawley, 'A fighting Poland: The birth and growth of Eastern Europe's hottest game industry (P3art 2)', *VB|GamesBeat*, 23 November 2014. Available from http://venturebeat.com/2014/11/23/the-birth-and-growth-of-the-polish-game-industry-part-2/.
[234] Livingstone and Hope, *Next Gen*, 66-7.
[235] http://www.enjmin.fr.
[236] http://www.games-academy.com/.
[237] http://eag.epifit.com.pl/index.php.

We should also be wary of any agenda which prioritise STEM education over the arts. While this dovetails with government objectives in the educational field, anecdotally the impact of related governmental initiatives are already being felt on the art side of the industry, with artists entering the field currently again highly unprepared for the work it asks of them. And, indeed, Next Gen made it clear, 'STEM subjects – the sciences, technology, engineering and maths – *and art* are key to success'[238] (our emphasis). In the UK context, while there has been a focus on the enterprise agenda in arts and humanities education aimed at producing employable and self-starting graduates,[239] the value of this field is regularly denigrated by employers and indeed by politicians too. This has the potential to produce a two-tier assessment of skills which ignores the plural value chain and creatively promiscuous culture of gaming. Certainly, more instrumentally-toned demands for employability have impacted on the nature of education at HE level where students who enter gaming and the wider creative sector have not traditionally directly or narrowly trained for such a vocation. [240]

Beyond the EU, too, considerable effort is focused on developing an appropriately skilled workforce for the games industry, and in a manner similar to the UK, researchers in Australia have identified that there is a mismatch between the available education and the needs of the games industry, resulting in skills shortages.[241] Once again, many of the countries in question have developed educational programmes in traditional subjects which feed into games employment, such as computer science and mathematics, but there are also a number of initiatives which focus upon games and related activities. In Brazil, for example, NAVE Recife offers games programming and multimedia education to 14-17 year olds, to prepare them for the game industry.[242] Japan boasts a number of game schools, but HAL in Osaka has perhaps the strongest reputation.[243] In Hong Kong, games-related courses are available to university postgraduates.[244] Singapore have developed a detailed response to the problems of creative expertise through their Workforce Development Agency, to support the training and development of creative workers. A specific competency map has been produced, focusing on game development.[245] The Malaysian MyGameDev2020 initiative, focused around nurturing the local games industry, has seen significant investment in games industry education at KDU University College.[246] Lastly, Coding Indonesia aims to instil coding skills in children in Kalimantan, delivering classes focused around game development.[247]

Notably, the playing of games now also has a bearing on education. Due to the vast popularity of competitive gaming, Chung-Ang University in the Republic of Korea now

[238] Livingstone and Hope, *Next Gen*, 5.
[239] See Annette Naudin, 'Media Enterprise in Higher Education: A Laboratory for Learning', in Daniel Ashton and Caitriona Noonan (eds.), *Cultural Work and Higher Education* (London: Palgrave Macmillan, 2013), 110-132.
[240] See Kate Oakley, 'Making Workers: Higher Education and the Cultural Industries Workplace', in Ashton and Noonan, *Cultural Work*, 25-44.
[241] See http://www.cci.edu.au/content/games-industry-skills-project.
[242] See http://www.oifuturo.org.br/en/education/nave/nave-recife-public-technical-school-cicero-dias/.
[243] http://www.hal.ac.jp/english/index.html.
[244] For example, http://scs--hd.scs.cuhk.edu.hk/en/programmes/computer_game_development.html.
[245] Workforce Development Agency, *Games Development: Creative Industries Workforce Skills Qualifications – Media & Communications | Competency Map* (26 June 2014). Available from http://www.wda.gov.sg/content/dam/wda/pdf/L207/Creative/CM_Games_Devm_20140626_CPSD_V01Final.pdf.
[246] See http://gamedev.kdu.edu.my/mygamedev2020/.
[247] See http://www.codingindonesia.com/index.html.

offers Sports Science places to professional gamers.[248] In addition, The Gamer Institute in Australia teaches people to play games at the highest level.[249]

2.4 Networks and associations

In approaches that seek to nurture the culture and very creativity of the creative economy, attention to the special qualities or 'mystique' of the central process of inspiration or talent is largely bypassed in favour of facilitating contexts for exchange of ideas and experiences between creative workers. Recognising the often sole-trader, SME, basis of much of the creative sector that links it to ideas of the associational economy, policy initiatives have focused on aiding networking, the nurturing of social capital and indeed the clustering and incubation of businesses.[250]

Although video games are now established as part of the fabric of the EU's creative culture, their relative youth (and the associated failure to consistently recognise the professional nature of this work) means that employees in the field are sometimes less well-supported by organisations and associations than might be expected elsewhere. Internationally, the IGDA (International Game Developers' Association) provides a basis on which collective action and activity can take place, with the facility to create local chapters, both professional and academic. The uptake for this organisation is, however, variable. The Finnish national chapter is the most established within our survey countries, there are three city-based chapters in Germany, a French chapter (IGDA Paris) is newly emerging, and the UK features a Scottish chapter and a London chapter (the Warsaw chapter appears now to be defunct).[251] IGDA activities are varied, but principally focus on support for those who work in the industry.

Activity in support of the industry and its employees are also present at pan-EU level (via the European Games Developer Federation),[252] and through various national organisations. Unusually among the EU countries explored, France has an established trade union for video game development, the SNJV (Syndicat National du Jeu Vidéo),[253] as well as trade body SELL (Syndicat des éditeurs de logiciels de loisirs),[254] and bridging organisation Le Game (which brings these associations together with the government export and investment agencies).[255] In the UK and elsewhere, these activities are undertaken by trade associations such as TIGA and UKIE (UK),[256] GAME and BIU (Germany)[257] and Neogames (Finland).[258] The Polish equivalent (PGDA, Polish Game Developers Association) appears poorly developed,[259] but the Polish government have invested some European funding into promoting the industry.[260]

[248] Mariella Moon, 'Playing video games well can get you into a top South Korean university', *EngadgetUK*, 19 March 2014. Available from http://www.engadget.com/2014/03/19/pro-gramer-south-korea-university-athlete/.
[249] http://www.gamerinstitute.com/en/.
[250] See P. Cooke and K. Morgan, *The Associational Economy: Firms, Regions and Innovations* (Oxford: Oxford University Press, 1999); Chris Bilton, *Management and Creativity* (Malden, MA: Blackwell Publishing, 2007); S. Olma, *The Serendipity Machine: A Disruptive Business Model for Society 3.0* (Amersfoort: Lindonk & De Bres, 2012).
[251] See http://www.igda.org/?page=chaptersprofessional.
[252] http://www.egdf.eu/.
[253] http://www.snjv.org/.
[254] http://www.sell.fr/.
[255] http://www.le-game.fr.
[256] http://www.tiga.org/; http://ukie.org.uk/.
[257] http://www.game-bundesverband.de/; http://www.biu-online.de/.
[258] http://www.neogames.fi/en/.
[259] http://pgda.pl/.
[260] See http://lets-play.com.pl/.

Organisations like these can play an important role in promoting games as cultural objects. In the UK and France, games tax relief rests on an understanding of games as vectors of national culture, and organisations such as TIGA, UKIE and the Association des Producteurs d'Oeuvres Multimédia (the predecessor of the SNJV) were instrumental in securing this recognition at both national and European governmental level. Yet even where such legislation is not in place, associations can be seen to promote the value of games beyond the purely commercial. In Germany, for example, BIU 'campaigns for the social and cultural acceptance of computer and video games', while GAME promotes 'an informed understanding of the games industry in society'.[261]

Similar associations and networks exist beyond Europe, with IGDA presences in various countries augmented by local organisations such as Abragames (Brazil),[262] the Korean Game Developers Association (KGDA),[263] the Game Developers Association of the Philippines (GDAP),[264] the Philippine Software Industry Association (PSIA),[265] the Game Developers' Association of Australia (GDAA),[266] and the New Zealand Game Developers Association (NZGDA).[267] The Russian Association of Developers and Publishers, RADIT, appears to have been defunct since late 2010, with its homepage no longer available.[268]

[261] See http://www.biu-online.de/en/association/about-biu.html; http://www.game-bundesverband.de/en/about-g-a-m-e/.
[262] http://www.abragames.org/.
[263] http://www.kgda.or.kr/html/main.php.
[264] http://www.gdap.org.ph/.
[265] http://psia.org.ph/.
[266] http://gdaa.com.au/.
[267] http://www.nzgda.com/.
[268] http://www.radit.ru.

3. Innovation and Cross-over

Gaming has a resonance for contemporary policy as it suggests that creative industries provide content that powers the take-up of digital devices and networks, contributing to the acceptance and further development of ICTs and ideas: 'As intensive users of technology, their demands also often spur adaptations and new developments of technology, providing innovation impulses to technology producers'.[269] Nonetheless, neither innovation nor ideas of cross-over are straightforward terms. Innovation in particular has attracted such a variety of meanings that 'the number and diversity of current definitions of innovation creates ambiguity and confusion'.[270] It is thus necessary to be clear what we mean when we refer to innovation, much as we must be clear what we mean by cross-over.

Cross-over, or spill-over, describes the transmission of relations and benefits between fields; here, between cultural fields. As a recent EU project on cross-*innovation* put it, it is 'a process by which creative industries share information, collaborate and work with other growth sectors to promote new thinking'.[271] Of relevance here given the plurality of the gaming industries and the various skills involved, etc., is a conceptualization and typology of cross-over derived from this project in and between creative sectors. This is valuable in identifying innovation in terms of:

- Intra –within the Creative and Cultural Industry (CCI) sub sectors
- Inter – between the CCI sub sectors
- Cross – with CCI and other growth sectors (such as health and environment) and
- Internationalisation of cross innovation (CCI & growth sectors interacting with other groups across territories)

Framing issues here in terms of British Council's arts programme and the focus of this report, we are concerned with transmission between the games sector (broadly defined), and architecture, design and fashion, film, literature, music, theatre and dance, and the visual arts. Under this schema, such transmission would constitute inter-innovation.

However, it is important to be clear about the mechanisms at play here. Games, and particularly computer games, do not exist in a vacuum, and thus disentangling the games sector from other cultural sectors is difficult. While this is typically done on

[269] European Commission, *Unlocking the potential*, 5.
[270] Anahita Baregheh, Jennifer Rowley and Sally Sambrook, 'Towards a multidisciplinary definition of innovation', *Management Decision* 47.8 (2009), 1334. See also T. Lämmer-Gamp, *Creative Industries: Policy recommendations - promotion of cross-innovation from creative industries* (Berlin: VDI/VDE Innovation + Technik GmbH, 2014).
[271] From Steve Harding, Tom Cahill-Jones and Nina Lakeberg, 'Appendix: Cross Innovation Factsheet' in Paul Long, *Cross Innovation: A Report on Local Best Practice* (2013), 52. Available at http://www.cross-innovation.eu/wp-content/uploads/2013/05/Case-Study-Review-For-Publication.pdf.

the basis of output, we must remain mindful that the basic staffing base of larger game studios will typically include not only coders, administrators and managers, but also writers, artists and designers, sound specialists and musicians, and animators, all involved in a value chain, if not ecology.[272] In some respects, modern digital games subsume many if not all other art forms. With that in mind, we must be clear on the distinction between a process through which art, music or film make a contribution, however astounding, to what we might see as an 'ordinary' game, and a process in which games and game makers come together with the practitioners and products of other cultural fields to explore new activities. We move away, then, from established approaches to game making, but also from established approaches to film making, to literature and to design.

As our focus of interest here is the capacity of game makers and artists to change the way we think by offering new approaches not only to making games, but also to disseminating and selling them, and to setting the terms within which they are understood, we will use the term innovation to refer to the kinds of work – of games, of art – which invite us to make these changes. Taking up the term from the aforementioned European study, we will use the term *inter*-innovation to describe work which takes place at the borders of sectors, and between those borders. As Lämmer-Gamp recognises, such a conception may mean that, while those 'in traditional industries have to shift their minds, a change of thinking is also required from the creative industry. Creative entrepreneurs are still very much focussed on social and cultural values. Often they equate thinking and acting economically with low quality'.[273]

What, then, does inter-innovation look like? What happens at the borders, the interstices between artistic forms? Perhaps unsurprisingly, these are intensely productive spaces, and in some instances have seen the creation of new cultural forms which are now well (and sometimes long) established. At the conjunction of games and film, for example, we find machinima, the use of game environments to create film-like experiences, with in-game characters used to act out a story.[274] At the conjunction of games and literature, we find new ways to experience narrative, such as The Chinese Room's *Dear Esther*.[275]

Although we might consider digital games to be at the forefront of innovation here, it is also important not to ignore physical games. Underpinning principles and processes of physical and digital game design have much in common, and digital games are sometimes prototyped in physical form, while the outcomes of physical games may be modelled using computers. Indeed, some forms of innovation involve the successful transfer of game forms between the two formats, even at the most elementary level, resulting in, for example, digital reconceptualisations of popular physical games (digital board games and card games are a popular niche), or non-digital reproductions of computer game experiences. Many innovators also dwell at this particular conjunction, combining physical and digital game experiences to produce entirely new interactions

[272] As an example, see the staff roster for Jagex, at http://www.jagex.com/careers/staff/. See also Greg Hearn, Simon Roodhouse and Julie Blakey, 'From value chain to value creating ecology: Implications for creative industries development policy', *International Journal of Cultural Policy* 13.4 (2007), 419-436.

[273] Lämmer-Gamp, *Creative Industries: Policy recommendations*, 8.

[274] For examples, see http://machinima-expo.com/v3/43-films-chosen-to-screen-at-the-machinima-expo-7/.

[275] http://www.thechineseroom.co.uk/games/dear-esther/.

between player and game (for example, Six to Start's *Zombies, Run!* or *Nova: First Contact*).[276] We must also be mindful of the complexity of the relationships between particular gaming forms and other game-like experiences available to us, such as that between Nordic Larp and interactive theatre.

3.1 What is the cultural status of video games?

Given that these are inter-innovations, and exist between forms, it is important to remain aware that they are often seen as falling outside the enclave of one or all of their antecedent forms. In this case, it is useful to ponder the question: are video games art, or indeed can art be a video game? A case in point is *Dear Esther*, a story-driven, first-person game originally developed using the source engine as a mod[277] for *Half Life 2*, as part of an AHRC-funded project focused on experiments in narrative. The game was subsequently redeveloped by Bristol- based studio The Chinese Room for full commercial release, and in 2013 figures released by its producers suggested it had met with significant success, selling over 750,000 copies.[278] The objective of the original experiment was 'to find out what happens if you pare a game experience back until all that's left is the story', and the majority of game elements were removed (you are unable to run or jump, for example, and there are no puzzles that must be solved in order to progress).[279]

The game received extensive critical attention, but not all of it took the assertion of 'gameness' at face value. Luke Plunkett, a commentator at popular game culture site *Kotaku* observed:

> *Dear Esther* is a terrible video game.
> Which would be a problem if *Dear Esther* was a video game.[280]

Plunkett's rejection of this as a game rests on the lack of interaction, the lack of things to do, likening the limited player agency to the process of turning the pages of a book. And elsewhere, on the *Rock, Paper, Shotgun* website, two writers presented conflicting opinions on the game, one in distinct appreciation of its artistry,[281] the other more concerned with its limitations.[282]

But if *Dear Esther* isn't a game, what is it? Famously among the gaming community, renowned film critic Roger Ebert tirelessly rejected the idea that video games could be art.[285] In the academic community this argument has run on for years; although there is a strong desire for video games to be art, and some writers feel that the

[276] http://www.sixtostart.com/#zombiesrun; http://novafirstcontact.com/.
[277] A mod (modification) is an alteration to the code of a game which makes it do something other than was originally intended, in order to change or entirely amend the game experience. Mods may include the addition of particular costumes or items to a game or, as here, transformation into a functionally different game.
[278] See http://dear-esther.com/?page_id=2 and Jeremy Peel, 'Dear Esther has now sold "well over" 750,000 copies thanks to Humble Bundle', *PCGamesN*, 2013. Available from http://www.pcgamesn.com/indie/dear-esther-has-now-sold-well-over-750000-copies-thanks-humble-bundle.
[279] Oxford, 'Dear-Esther'.
[280] Luke Plunkett, 'Dear Esther: The Kotaku Review', *Kotaku*, 13 February 2012. Available from http://kotaku.com/5884520/dear-esther-the-kotaku-review.
[281] Alec Meer, 'What I Alternatively Think: Dear Esther', *Rock, Paper, Shotgun*, 15 February 2012. Available from http://www.rockpapershotgun.com/2012/02/15/what-i-alternatively-think-dear-esther/.
[282] John Walker, 'Wot I Think: Dear Esther', *Rock, Paper, Shotgun*, 13 February 2012. Available from http://www.rockpapershotgun.com/2012/02/13/wot-i-think-dear-esther/.
[283] Roger Ebert, 'Video Games Can Never Be Art', *Roger Ebert's Journal*, 16 April 2010. Available from http://www.rogerebert.com/rogers-journal/video-games-can-never-be-art.

case is (almost)[284] proved,[285] researchers continue to offer complex analyses which aim to distinguish between entertainment and artistic games.[286] We might in any case note that the level of academic attention to games – there is an entire field of Game Studies – lends credence to claims that gaming is a serious cultural endeavour.[287] Furthermore, art venues are increasingly accepting that games are artistic enough to appear alongside other art forms, as exhibitions at The Barbican,[288] the 54th Biennale[289] and New York's Museum of Modern Art[290] bear out. This is important, in shifting the context of video games away from more traditional museum exhibitions which focus on them as technological innovations.

Why does this debate matter? Ebert clearly felt it wasn't especially important, unless game creators and gamers were perhaps seeking artistic recognition as a form of legitimisation. Yet the impact of games not being recognised in this space appears in a number of places, for example in cultural situations where games make no appearance as a category or focus area,[291] or in funding programmes which work across the range of creative activities but rarely fund games unless they are pitched as another art form.[292]

Perhaps this debate does not matter and the value of games, and confidence in them as cultural forms, lies in a recognition of their essential qualities *qua* games. In this sense, while we might derive reference points from art and popular forms to make sense of them, the 'gameness' of games is something worth appreciating and trumpeting on the way to a paradigm shift in thinking about cultural worth and impact.

3.2 Innovation – an example through theme

One site for innovation in games is in the approach that is taken to particular themes. War and conflict are themes which have made a significant contribution to video games through their history, with *Spacewar!* (1962), one of the first video games, setting a combat-orientated tone which ran on through *Space Invaders* (1978) to modern games series such as *Starcraft* (1998; 2010) and *Call of Duty* (2003-2014).

While players of games about war typically find themselves as an agent of some military order or another, some modern interventions have problematised this relationship

[284] Kurt Squire, 'Cultural Framing of Computer/Video Games', *Game Studies*, 2.1 (2002). Available from http://gamestudies.org/0102/squire/.
[285] James Paul Gee, 'Why Game Studies Now? Video Games: A New Art Form', *Games and Culture*, 1.1 (2006), 58-61. Available from http://gac.sagepub.com/content/1/1/58.abstract.
[286] Jef Folkerts, 'Video Games, Walking the Fine Line between Art and Entertainment', Proceedings of DiGRA 2011 Conference: *Think Design Play* (2011). Available from http://www.digra.org/wp- content/uploads/digital-library/11310.23148.pdf.
[287] For instance, James Newman's work considering the preservation of games as cultural artefacts (e.g. Newman, 'Save the Videogame!'), and Nick Webber's work reflecting on the implications of activities in game environments for law (e.g. Nick Webber, 'Law, Culture and Massively Multiplayer Online Games', *International Review of Law, Computers and Technology* 28(1): 45-59) and history (e.g. Nick Webber, 'What is Videogame History?' in Dawn Stobbart and Monica Evans (eds.), *Engaging with Videogames: Play, Theory and Practice* (Oxford: Inter-Disciplinary Press, 2014), 155-67).
[288] http://www.barbican.org.uk/bie/game-on.
[289] http://www.labiennale.org/en/art/archive/54th-exhibition/collateral-events/.
[290] See Paola Antonelli, 'Video Games: 14 in the Collection, for Starters', *Inside/Out*, 29 November 2012. Available from http://www.moma.org/explore/inside_out/2012/11/29/video-games-14-in-the-collection-for-starters/.
[291] For example, http://culture.pl/en does not refer to games separately, and note of course the current situation in British Council's arts programme.
[292] This was mentioned during the roundtable, and in several of the subsequent discussions which informed this report.

with the war experience. *This War of Mine*,[293] for example, released in 2014 by 11 bit studios (Poland), situates the player not as a soldier but rather as a group of civilians, endeavouring to survive in a besieged city. Inspired by the 1990s siege of Sarajevo, the game draws on human simulation games such as *The Sims*, pairing these ideas with influences drawn from survival games, themselves popular in the contemporary market.[294] The game was well-received by critics,[295] with users of game purchasing platform Steam giving overwhelmingly positive reviews.[296]

Also in 2014, to coincide with the anniversary of the outbreak of World War I, French giant Ubisoft released *Valiant Hearts: The Great War*.[297] Again, this game sought to redraw the experience of war in games, this time through a puzzle game, focused on the experiences of four playable characters and on the effects of war rather than the usual immediacy of violence. While the game was praised for its bold art style,[298] it is particularly notable here firstly for the innovative approach to the subject delivered by a major developer and publisher, which was ultimately inspired by real letters written at the time of the war on which it focuses.[299]

If these are games which originate with commercial studios, with game designers attempting non-typical interpretations of war, *1378(km)* provides an alternative perspective, with a game produced solely by an artist, Jens Stober.[300] Again designed for an anniversary, this time the 2010 commemoration of German reunification, the conflict at the heart of Stober's game is that on the borders between East and West Germany in the cold war era. The game draws on standard FPS (first person shooter)[301] modes of play to set two groups of players against each other: one side tasked with escaping from the East, the other with keeping the fugitives in. The guards are armed, the civilians are not; and should the guards succeed in their mission, they find themselves in the year 2000, on trial for the killings.[302] Again, receiving critical acclaim, 1378(km) created a flurry of debate and criticism in Stober's native Germany, focused around whether or not issues such as these were or should be within the purview of game comment.[303] Sensitivities were such that the launch date was pushed back, away from the anniversary celebrations.[304]

In all three examples here, artistic sensibilities are visible in the conception of the games; in each case, the games take an established way of working / way of playing and move on from it. Consequently, these games go further than most commercial

[293] http://www.11bitstudios.com/games/16/this-war-of-mine.
[294] Often in the context of the zombie apocalypse. See, for example, Rust by Facepunch Studios (UK; http://playrust.com/); *Day Z* by Bohemia Interactive (Czech Republic; https://www.bistudio.com/games/dayz).
[295] Metacritic score of 82%: http://www.metacritic.com/game/pc/this-war-of-mine.
[296] 5,055 reviews, 96% positive: http://store.steampowered.com/app/282070/.
[297] http://valianthearts.ubi.com/game/en-GB/home/index.aspx.
[298] E.g. Daniel Krupa, 'Winning Hearts and Minds', *IGN*, 24 June 2014. Available from http://uk.ign.com/articles/2014/06/24/valiant-hearts-the-great-war-review.
[299] See http://valianthearts.ubi.com/game/en-GB/the-great-war/index.aspx.
[300] http://www.1378km.de/.
[301] A form of game normally based on gun or projectile combat, with the player seeing the world through the eyes of one of the combatants (normally the protagonist). Contrast with TPS – third person shooter – where the character controlled by the player is visible on the screen, and the player's view typically follows the character.
[302] BBC, 'German Cold War border guard game 1378 sparks controversy', *BBC News*, 1 October 2010. Available from http://www.bbc.co.uk/news/11453443.
[303] See http://elorx.com/game-art/.
[304] BBC, 'German Cold War'.

titles by asking questions and provoking debate beyond the simplistic and longstanding issues of game violence. These are not by any means the first uses of games to pass comment on war – the late Harun Farocki deployed a military simulation alongside actual footage in his *Ernste Spiele* series of films,[305] and Guy Debord famously created *La Jeu de la Guerre* as an exploration of war as a comment on class struggle[306] – but video games are less commonly the venue for such exploration.

3.3 Adding value – cross-over and inter-innovation

As we have noted already, other art sectors make a significant contribution to games production, simply in terms of the reliance of game producers on people with an extensive variety of cultural expertise. Thus, although it is perfectly possible for someone to create a game alone – and various tools exist to support such a practice – commercial games will typically draw together a team balanced appropriately to address the various game elements. To call again on *Dear Esther*, for example, we can see the enhancing value of adding a variety of professional artists to the team. Beyond the originator and writer, Dan Pinchbeck, the group comprises two artists (concept and environment/general), a composer and a voice actor, as well as the technical expertise of a coder and a mastering engineer.[307] The game won a slew of awards which recognised the various discrete elements at play here – much as with a film, therefore, a practice such as scoring music for a game is a separately identifiable and value-adding activity.

Of course, it is often the case that some parts of a delivery team are not part of the studio creating a particular game, and there are distinctions between those understood to be 'creative' and others more akin to craft workers.[308] And as in other creative industries, freelancing and contracting has long been a part of games industry work. In a similar mode, and much like in the film industry, outsourcing is increasingly commonplace, and game elements such as art assets are often created elsewhere.[309] Two reports in 2009 independently suggested that more than 80% of studios outsource at least one element of production.[310] Notably, also, the organisations delivering outsourced work aren't exclusively limited to games. Sparx, for example, based in China and Vietnam, offer 3D animation services to the film, television and game industries, as part of a broader art outsourcing activity delivered by parent company Virtuos.[311] Closer to home, although specialising in games audio, UK-based Sound Cuts also work with marketing teams and film production companies.[312] Much as with freelances, therefore, there is an element of cross-over between different creative industries.

The UK offers a series of instructive examples of the involvement of established artists

[305] Ronald Berg, translated by Jesse Coburn, 'Harun Farocki', *Frieze* 15 (2014). Available from http://frieze-magazin.de/archiv/kritik/harun-farocki/?lang=en.
[306] See http://www.classwargames.net/?p=1636.
[307] See http://dear-esther.com/?page_id=2.
[308] For example, those working in quality assurance (QA) roles.
[309] A recent news piece removed outsourced work from screenshots of Sniper: Ghost Warrior 2 (CI Games, Poland), leaving them 'surreally bereft': Joseph Bernstein, 'What Video Games Would Look Like Without Outsourcing', *BuzzFeedNews*, 6 January 2014. Available from http://www.buzzfeed.com/josephbernstein/what-videogames-would-look-like-without-outsourcing.
[310] Gamasutra staff, 'Survey: Outsourcing In Game Industry Still On Increase, *Gamasutra*, 2 April 2009. Available at http://www.gamasutra.com/php-bin/news_index.php?story=23008 (drawing on Game Developer Research figures); Kath Brice, 'Outsourcing is "fundamental" for UK game development', *Gamesindustry.biz*, 29 June 2009. Available from http://www.gamesindustry.biz/articles/outsourcing-is-fundamental (drawing on TIGA figures).
[311] http://www.sparx.com/.
[312] http://www.soundcuts.net.

in game production. Cambridge-based Ninja Theory have worked with high-profile British artists on several of their games, notably writer Alex Garland (on *Enslaved: Odyssey to the West* and *DmC: Devil May Cry*), musician Nitin Sawhney (*Heavenly Sword, Enslaved*) and actor/director Andy Serkis (Heavenly Sword, Enslaved).[313] Elsewhere, Paul McCartney composed the score for Bungie's *Destiny*,[314] and Andrew Hale and Simon Hale that for *L.A. Noire*,[315] with Harry Gregson-Williams contributing to the soundtracks of both the *Metal Gear Solid* and *Call of Duty* series.[316] Literary contributions can be seen from writers such as Rhianna Pratchett (*Tomb Raider*), James Swallow (*Deus Ex: Human Revolution*), Christopher Brookmyre (*Bedlam*) and Warren Ellis (*Cold Winter*).[317] The work of leading British design agencies can be seen in support of games such as Microsoft's *Sunset Overdrive* and Bethesda's *Dishonored*, among others,[318] and John Dower serves as an interesting case study of the transition from television and film direction to video game work.[319]

Games, and games culture, also make a contribution to other art forms, often by encouraging engagement with or exposure to that art. In popular music, for example, the influence of video games has been significant, triggering the chiptune movement,[320] subject of the award-winning documentary *Europe in 8 bits*,[321] and providing valuable sites of exposure for new artists. Games have also been used to encourage engagement with architecture and space, for instance as a form of heritage[322] (and, of course, the contribution made by Lego must not be forgotten). We can also see games, and game-like virtual worlds, contributing to processes of design and fashion, with companies producing game-inspired fashion items,[323] the consumption of fashion in virtual worlds taking place in a manner similar to non-virtual fashion,[324] and expertise gained designing fashion for avatars transferring to the real-world context.[325] In addition, the growing international phenomenon of cosplay draws heavily on video game (as well as anime/manga and film) tropes.[326]

313 See http://www.ninjatheory.com/wp/?page_id=29 (accessed 28 January 2015).
314 https://www.bungie.net/en/Destiny/Credits (accessed 28 January 2015).
315 http://www.rockstargames.com/lanoire/features/soundtrack/ (accessed 28 January 2015).
316 Chris Greening, 'Harry Gregson-Williams scores Advanced Warfare', *Game Music Online*, 12 May 2014 (modified 28 September 2014). Available from http://www.vgmonline.net/harry-gregson-williams-scores-advanced-warfare/ (accessed 28 January 2015).
317 See http://www.rhiannapratchett.com/games.php; http://jamesswallow.blogspot.co.uk/p/blog-page.html; http://www.bedlamthegame.com; http://www.warrenellis.com/?page_id=14415 (all accessed 28 January 2015).
318 See http://ilovedust.com/work/sunset-overdrive; http://www.finkcreative.com/work/bethesda-dishonored-goty-2/ (both accessed 28 January 2015).
319 Will Freeman, 'How film and TV directors are making the jump to games', *Develop*, 22 July 2014. Available from: http://www.develop-online.net/analysis/how-film-and-tv-directors-are-making-the-jump-to-games/0195532. See also http://www.johndower.co.uk (both accessed 28 January 2015).
320 Chiptunes are pieces of synthesised electronic music made using the sound chips of computers and games consoles, typically older machines from the 8-bit era. See, for example http://www.chiptune.com/. Leading groups in the area include Poland's Mikro Orchestra: http://www.mikroorchestra.com.
321 http://europein8bits.com/.
322 See, for example, http://www.armaghia.fr/projets/ghost-invaders-les-mysteres-de-la-basilique/ and http://www.historyspace.eu/games/.
323 E.g. UK start-up Console to Closet: http://consoletocloset.com/.
324 See, for example, Retail Bliss, http://retailbliss.blogspot.fi/, a site run by Finnish fashionista Bayberry Lilliehook, focusing on fashion in *Second Life*.
325 For example, US designer Angela Jarman used fairy wings she had designed for *Second Life* avatars for a real-world Victoria's Secret fashion show: see Wagner James Au, 'Victoria's Secret Taps Former Second Life Wing Designer to Accessorize Models in Latest Runway Show', *New World Notes*, 8 December 2014. Available from http://nwn.blogs.com/nwn/2014/12/sl-wing-designer-for-vs.html.
326 There is a wealth of information available, but an instructive introduction can be seen at http://www.cosplay.com/.

Beyond game culture, the experience of game play has made a contribution to a number of innovative immersive theatre productions, by companies such as UK-based Punchdrunk and RIFT who directly cite the influence of games like *Goldeneye 64* (Rare, UK) and *Skyrim* (Bethesda, US).[327] In film, games have had a different form of influence, providing in some cases driving or supporting material for the main feature[328] or, more innovatively, new approaches to producing audience engagement, through the deployment of ARGs, alternate reality games. Increasingly important in a variety of different spaces, and used to promote a broad selection of different cultural products, ARGs are typically internet based but require action in the real world in order to progress the game, and they are often thought of as a form of transmedia.[329] The ARG *Why So Serious?* (42 Entertainment, US), used in support of the film *The Dark Knight* (Nolan/Warner Bros., US) , is considered by some to be one of the best viral marketing/film tie-in sites ever created.[330] *Retorda*, a less commercial interpretation by Polish art group Department Gier, created a fake documentary film screened in a local cinema in order to engage participants in a media education project focused on the city of Bełchatów.[331] And *The Black Helix*, by Northern Ireland-based Design Zoo, used the ARG model to attempt the production of a crowdsourced novel, drawing in more than 10,000 players from 64 different countries.[332]

Importantly, ARGs push beyond the digital and into the physical space, demonstrating the artificiality of a digital/physical divide, especially within the realms of innovative game/art practice. Indeed, it is arguably at the nexuses of physical and digital, and of distinct and ostensibly separate artforms, that the most significant (inter-)innovation takes place. Here, at the juncture of immersive/interactive theatre and pervasive games, for example, we find pervasive theatre.[333] The preserve of arts collectives such as the UK's Blast Theory, Invisible Flock and Coney, and Germany's machina eX,[334] pervasive theatre is an artform which must be both experienced and played. The bringing together of groups of people with played interaction around theatrical principles is echoed by Nordic larp, an artform which owes little to the digital but which proceeds from the same ludic bases as many video games – roleplaying, and the inevitable

[327] See http://punchdrunk.com/, http://www.r-ft.co.uk and Thomas McMullan, 'The immersed audience: how theatre is taking its cue from video games', *The Guardian*, 20 May 2014. Available from http://www.theguardian.com/technology/2014/may/20/how-theatre-is-taking-its-cue-from-video-games.

[328] For example, *Tron, Lara Croft: Tomb Raider* (a game which itself had a clear debt to a film, *Raiders of the Lost Ark*) and the *Resident Evil* series, along with the forthcoming *Warcraft* and *Minecraft* films.

[329] The notion of a story told across multiple media platforms. Henry Jenkins' seminal *Convergence Culture* (New York: New York University Press, 2006) explores the transmedia phenomenon in detail.

[330] Adam D'Arpino, 'The Greatest Viral Marketing Campaigns in Movie History', *Film.com*, 6 January 2014. Available from http://www.film.com/movies/the-greatest-viral-marketing-campaigns-in-movie-history.

[331] See https://www.behance.net/gallery/11378601/Retorda-non-commercial-ARG. Bełchatów is known predominantly for having the largest lignite mine in Europe, and the largest power plant in Poland.

[332] See http://www.thedesignzoo.co.uk/project/the-black-helix-an-unwritten-story/5 and http://www.theblackhelix.com/. Another ARG experiment in Northern Ireland, *[in]visible belfast*, also had a literary connection, aiming to understand Belfast through a remediation of Ciaran Carson's novel *The Star Factory* – see Danielle Barrios-O'Neill and Alan Hook, 'Alternate Reality Games and Literature' in Nicola Whitton and Alex Moseley (eds.), *Using Games to Enhance Learning and Teaching: A Beginner's Guide* (Abingdon: Routledge, 2012): 178-91.

[333] Elena Pérez, Pervasive Games and Theatre: Participation and Open Source, *Play, Forward: Drama & Ny Teknologi: Drama i skolen*, 4 (2010), 6-9.

[334] See http://www.blasttheory.co.uk; http://www.invisibleflock.co.uk; http://coneyhq.org/h/; http://www.machinaex.de. Examples include Blast Theory's *Rider Spoke*, Invisible Flock's *Flock 21*, Coney's *Early Days (of a Better Nation)* and machina eX's *Hedge Knights*.

debt to *Dungeons and Dragons*. Larps are 'like improvisational theatre without an audience'; Nordic larp distinguishes itself through the importance in that experience of accessibility, openness and communication.[335] Helsinki-based artists Aarni Korpela and Johanna MacDonald have taken these themes further, moving beyond the purely fictional bases of larp to introduce elements of the real.[336] Mass participatory games engage with other artforms, too: wallFour's *[Renga]*, for example, takes the physical space of the cinema as setting for a team game for one hundred people, mixing film, theatre and video game.[337] Hide and Seek's *New Year Games*, played in Edinburgh on 1 January 2012, brought 10,000 people together with music, sound and the sense of space to play the largest pervasive game in the world.[338] And Invisible Playground's *72 Hour Interactions* creates a competition of 'gameful architecture', bringing together five international teams to design and build a temporary structure 'that invites people to come together in play' in Witten, Germany.[339]

Taking up related challenges in the digital domain, British game designer Cedric Kerr has drawn on a combination of Brutalist architectural styles and procedural generation to create a system which can create a digital city from scratch, informed by a kind of 'architectural intelligence'. Kerr intends to use this approach to populate the world of his forthcoming game, *Project Sprawl*.[340] Elsewhere, *PlastiCity*, produced by a team led by Salford University's Mathias Fuchs, enables and encourages residents of Bradford, UK to experiment with their city, building, altering or demolishing buildings.[341] This game, born of collaboration with architect Will Alsop following his reimagining of Bradford's city centre, attracted criticism for its wilful ignorance of economic constraints in the players' reimaginings. But it also appears to have met with rejection for taking an 'ambiguous' position, by commenting on real world issues while at the same time being a work of game art.[342] This is, of course, a basic expectation of many forms of art, and borne out in machinima, the fusion of film and game we have mentioned previously. Among her many game art-related activities, French curator and critic Isabel Arvers has spent almost a decade making machinima, more recently running exhibitions and workshops devoted to the form, demonstrating the expressive potential of mass media.[343] Machinima can thus explore issues of complexity – of identity, for example, as Arvers demonstrates[344] – but also extend to encompass other art forms: machinima music video, for example.[345] In a number of ways, some of the outcomes of machinima are also evocative of the fusions of computer-originated visuals and sound produced within

[335] See Jaakko Stenros, 'Nordic Larp: Theatre, Art and Game' in Jaakko Stenros and Montola (eds.) Nordic Larp (Stockholm: Fëa Livia, 2010), 313 and Jaakko Stenros, 'What Does "Nordic Larp" Mean?' in Jon Back (ed.) *The Cutting Edge of Nordic Larp* (Knutpunkt, 2014), 147-56. Larp is a neologism derived from an abbreviation – LARP, Live Action Role-Playing.
[336] See http://walkabout.happeningfish.com/?lang=en.
[337] http://wallfour.co.uk/.
[338] http://thenewyeargames.com/.
[339] See http://www.invisibleplayground.com/en/welcome and http://72hourinteractions.com/?locale=en.
[340] Joseph Flaherty, 'A Sprawling Videogame City Filled With Buildings Made by Generative Algorithms', Wired, 23 October 2014. Available from http://www.wired.com/2014/10/project-sprawl/; and see http://delacian.tumblr.com (both accessed 8 January 2015).
[341] See http://creativegames.org.uk/art/plasticity/index.htm.
[342] Mathias Fuchs, 'PlastiCity: A Multiplayer Urban Planning Game'. Available from https://www.academia.edu/178752/PlastiCity.
[343] See http://www.isabellearvers.com/wp-content/uploads/IsabelleArvers-Portfolio.swf.
[344] For example, http://www.isabellearvers.com/2012/08/identity-otherness-games-machinima/.
[345] See, for example, https://www.youtube.com/watch?v=vH8XD-ZypwM. Note this particular item is by Vilvi, a Finnish machinima maker.

the demoscene,[346] an international movement in which demonstrations are produced that showcase the technical expertise of their makers, often using older generations of video game hardware, such as consoles. The scene has a historically strong following in countries like Finland (as noted above) and Poland,[347] and it is perhaps noteworthy that, in the demoscene, claims to art are contentious and can be divisive.[348]

[346] The best demoscene resource online can be found at http://www.pouet.net.

[347] Fei, Voyager and Magic, 'The Polish Demoscene Quo Vadis?', *Hugi* 34 (2008). Available from http://hugi.scene.org/online/hugi34/hugi%2034%20-%20demoscene%20reports%20magic%20the%20polish%20demoscene%20quo%20vadis.htm.

[348] Ville-Matias Heikkilä, 'Putting the demoscene in a context', *Countercomplex*, 11 July 2009. Available from http://www.pelulamu.net/countercomplex/putting-the-demoscene-in-a-context/.

4. Engaging with Games

4.1 Strengths and weaknesses

Policy

In the vast majority of countries explored, there is support for the creative industries at policy level, and increasingly the game industry is specifically named in these policy structures, even in countries in which the industry is small or nascent. Thus policy as written recognises the industry and, in a variety of ways, its value and its potential.

However, it is not always clear that these policies represent actual engagements, especially given the ways in which creative industries are being defined. There is a tendency to take on UK models, and many reports begin by noting the conflicting definitions of creative industries, before accepted the DCMS approach as their guide. In some ways this is problematic, as defining the creative industries externally may not be a clear match for the underlying processes taking place in all states.

Particularly problematic is the inconsistency of distinctions between economic, creative and artistic objectives, how they are understood and their relationship in the cultural sphere. In some places arts or arts and culture are distinguished from, for example, media, and this sends clear messages about how these various cultural forms are thought of and valued. As noted already, many governments situate video games within the cultural policy domain; if not artistic, then, they have a claim to cultural status in terms of being based on primarily symbolic meaning in a manner distinct from other types of industry. But in some ways this reflects a more significant issue: that expressing cultural value is not really sufficient for games, or perhaps acceptable. Furthermore, gaming often finds itself outside the cultural but within the creative industries, making two fairly clear points:

1. that video games are not vectors through which culture is or can be transmitted, implying that an idea of, say, Finnish cultural games is not within the policy ambit and thus would not receive government support; and
2. that video games are not an art form, because art is quintessentially different from whichever classification video games fall into.

Of course, it must be considered that these policies frequently proceed from a perspective that an often highly technological industry like gaming may require different supports from, for example, the production of classical or traditional music. Yet such divides also bring over longstanding divisions between high culture and low, and offer a rhetoric which diminishes the value of popular forms and ignores their nuance and variety. There is certainly far more attention paid to games as substantial entertainment properties and diversions than to games as potentially life-enhancing artistic objects, something reflected in popular attitudes and understanding of the sector. A 2012 study of European game consumption by Ipsos Mori indicated that, in our focus countries, between 40 and 60% of people aged 16-64 had played a video game in the last year,[349] but only 29-46% of parents questioned felt that gaming would make their children more informed.[350] Indeed, gaming fared poorly in comparison to other forms of entertainment and art, with only around 30% of respondents considering it interesting, against figures typically around 50% for literature and the arts, and 80% for music and film. Perhaps most damningly, in both the UK and Poland, gaming was considered less interesting than celebrity news.[351]

These perspectives dovetail to some extent with another problem in approaches to gaming, which is the tendency to conflate games as market with games as industry. Particularly in the non-EU countries, there is little clear information about the size of the industry, in part due to a lack of detailed mapping after the European fashion. The majority of information available is aimed at investors and the business context, and thus focuses on top sellers and most consumed. Much like other creative and cultural industries, then, there is tendency to reduce gaming to an economically valuable sector, with no clear means to measure its value to consumers and indeed to individuals as cultural citizens. There is even less information available about games as practice – we have a sense of how games are consumed, but little information currently about how games fit into everyday life and the wider sphere of cultural dispositions and values. Detail on how games are meaningful, as compared with great classical compositions or Anglo-Saxon treasures – for social identities of Germans or Britons, for example – is missing from these discussions entirely.

Funding

There is some solid governmental funding support for the industry across the EU countries, and a large base of support in non-EU areas as well, although less consistently. Strong streams of innovation and technology funds are often in place, and the committed long-term budget of a scheme like the Finnish *Skene* send strong signals that these industries are important. Support for the industry is clearly weaker in some of the non-EU countries, notably Australia and Russia, and either absent or unclear in countries such as China, where the games industry is less-established. Given the similarities of the game and film industries (scale, plural value chains, and the mixture of mass market entertainment and more artistic output), there remains a concern that there is often less funding available than for film, although this may be felt more strongly in the UK than elsewhere. Certainly, and tied to the issue of games as art, there is a concern that games are often passed over for funding from traditional arts-led schemes, and in many instances it is difficult to see which heading a game would appear under.

The funding of games as part of cultural promotion (e.g. Japan) seems a strong approach, as this ties them explicitly to large programmes and provides funding for the propagation of these cultural forms internationally, and indirectly offers market dominance by setting expectations about the nature of particular cultural forms.

[349] ISFE and Ipsos MediaCT, *Videogames in Europe: Consumer Study* (2012). Available from http://www.isfe.eu/industry-facts/statistics. The various national reports were used to source figures, as follows: UK: 40%, Finland: 60%, France: 57%, Germany: 42%, Poland: 49%. ISFE and Ipsos MediaCT's *GameTrack Digest: Quarter 3 2014* (available from http://www.isfe.eu/sites/isfe.eu/files/attachments/gametrack_european_digest_q3-14.pdf) shows these figures have changed somewhat, with France increasing to 64% and Germany to 53%, and the UK remaining at 40%. We have no updated figures for Finland or Poland.

[350] ISFE and Ipsos MediaCT, *Videogames in Europe*: UK: 29%, Finland: 34%, France: 24%, Germany: 27%, Poland: 46%.

[351] Ibid. 354 See https://twitter.com/devunion_uk.

Education and training

There are clearly some very strong and highly-regarded games education programmes, both within the EU and beyond it. However, there is an abiding sense that, in many countries, there is either too much ‘games’ education or not enough. That both the UK (with a broad provision in games-related courses) and Poland (with relatively little provision, but a strong STEM education setup) can point to skills gaps for the industry suggest that this problem has not yet been solved. The implication seems to be that more of either form of education does not resolve the problems faced, and that these are as much problems of cultural approach as they are problems of what courses to take.

Interventions among school age children seem to be activities with a significant potential impact; as always, funding of such programmes is an issue, reducing the number of such initiatives. The UK’s proactive stance about STEM here is positive, but may be weakening arts education, which is just as important to the development of games.

In all territories, positive dispositions towards games might benefit from a better understanding and appreciation of the gaming economy and the cultural value represented by creativity in the sector.

Networks and associations

Both international and national associations/networks exist, and are established more or less firmly in the majority of countries explored. The significant counter- example is Russia, which seems to have neither an active national association or network nor a chapter of the IGDA present. The networks offer strong routes for connection within and between national games industries, as well as ways of promoting them, but the specific activities are not always of the same order. For example, the UK can boast two trade associations, but no trade union, although one has been mooted.[352] In light of contemporary critiques of the nature of creative work, its stability as well as issues of equality and opportunity, this is an area where representation would be valued.[353]

Thus the industry and the activity within it are promoted and protected, but it is not clear that the internal relations of that industry are accounted for. The impact of strong trade associations is clearly felt, however, in multiple ways – in the active garnering of governmental support, for example, and in the communication of clear information about the industry and those within it.

Cross-over

It is evident that the games industry, in its current form, not only engages with other art forms but is in fact entirely dependent upon them for prosperity. So at the outset, these links are strong, and more strongly developed in the larger scale companies than in the smaller, simply as a result of the number of individuals working in the space and the range of outputs being produced.

be more opportunities here if there was a way in which practitioners of the various art and cultural forms could access one another. In short, then, there is strength in service relationships but relative weakness in newly creative ones: for games, cross-

[352] See https://twitter.com/devunion_uk.

[353] See, for example David Hesmondhalgh and Sarah Baker, *Creative Labour: Media Work in Three Cultural Industries* (Abingdon: Routledge, 2011).

over is more normally industrially creative than exploratively so.

4.2 Recommendations

The evidence suggests that the British Council can engage with games both to add value to the games sector through the arts, and to add value to other arts forms through games. Promotion of games, both commercially and as a cultural form is a vital activity for the UK, and British Council can play an important role here, through engagement with exhibitions and showcases, taking British games and game art overseas, and through helping to understand, support and present a British cultural gaming identity. In addition, there is space to promote and support a series of additional art forms which slip through the cracks of current structures, contributing to the case for Britain as a progressive, creative and innovative culture. Key to all of these activities is securing the recognition of games as an important element of our culture, not just in terms of policy and tax breaks, but in terms of the perception of the industry, the arts sector and the public, both at home and abroad.

In order to achieve these objectives, we recommend that the British Council consider a series of interventions focused around three roles: that of broker, advocate and policy shaper. The interventions will serve to erode the perceived division between games and culture/art, extend the reach and impact of British culture overseas, and demonstrate international leadership in this new cultural space. These recommendations align with the call to action set out in the *Culture Matters* report.[354]

Broker

1. British Council should participate in (and potentially convene) discussions with other interested organisations focused around opportunities such as projects and cultural programmes, acting as a catalyst to encourage interesting things to happen.
2. British Council should act to erode the service-like balance of relationships between games and other art forms by bringing together people from the fringes of the games and other arts sectors, who would not normally be able to access one another – it should bring the edges to the middle.
3. British Council should convene a forum in which the cultural elements of the games sector can be discussed by a convocation of practitioners and actors from the games industry, the arts world and the policy context.

[354] Howson and Dubber, *Culture Matters*, 3.

Advocate

British Council should act as an advocate for games as culture. This would involve the following actions:

4. British Council should bridge the perceived divide between games and art by:

- Acting as the missing 'arts voice' in discussions around games and culture which proceed from a games industry perspective;
- Acting as the missing 'games voice' in discussions around art and culture which *proceed from a more traditional arts perspective;*
- *Recognising and engaging with those highly innovative games-related art forms which fall outside both games and more traditional art structures;*

5. British Council should promote a culturally British identity around gaming by:

- Establishing which elements of British gaming are distinctively and culturally British, beyond the functional 'Britishness' of the cultural test;
- Articulating a distinct 'British voice' in gaming;
- Acting as an ambassador for British games, working with DCMS and UKTI
- to deliver cultural missions to promote them overseas.
- Increasing interest in games as part of British national culture by encouraging the UK public to engage with games as culture.

Policy shaper

6. British Council should participate in discussions with DCMS and with industry and art bodies to promote the recognition and support of games as vectors of British art and culture, in a way which complements existing support for games as economic products and demonstrations of British talent.
7. British Council should publicly encourage a government policy towards games which is positive and progressive, in keeping with the UK's standing record on matters of cultural policy.

4.3 Potential partners

British Council already has an established network of UK partners, offering a variety of different perspectives on games and represented by the attendance at the EGX roundtable in September 2014. As the list of partners is already quite lengthy, this report does not propose adding to that list, although further suggestions for partners can be made if desired.

Much as with the roundtable group, when looking to the EU it is important to identify partners who bring a range of perspectives to the discussion. As such, we have considered potential partners who are animateurs, commentators, associations, groups, artists, and companies. We hope this gives a reasonable and realistic range of partner options; again, further suggestions can be made if appropriate.

Across the games field, there are a number of useful people who have a clear overview of game art from several perspectives. **Isabel Arvers** is a French curator and art critic with more than ten years experience in bringing together a variety of activities, including video and computer games, net and digital art, retrogaming, 8 bit, machinima, indie games and free and open cultures.[355] **Stephen Schwingler**, curator of the long-running ZKM Gameplay exhibition,[356] provides complementary expertise. Focusing on the physical space are the Invisible Playground art collective, who convene Playpublik, the festival for playful public spaces. **Invisible Playground** cross borders, holding Playpublik in Berlin in 2012, and in Kraków in 2014.[357] Perhaps the broadest overview, however, comes from **Matteo Bittanti**. Although not based in any of our survey countries, Milan-based Bittanti is a curator and artist who provides an international perspective on game art at the well-known GameScenes website.[358] Organisations bring these activities together, particularly museums. Germany's **Computerspielemuseum**[359] has international renown, holding Gamefest during International Games Week[360] in Berlin. In particular, this year saw an exhibition entitled *Let's Play*, showcasing games from both Poland and France.

Outside the art scene, the industry is animated by associations and networks of various kinds. A starting point would be the various local and national chapters of the **IGDA**, which are participatory and bring those who work in games together. At national levels, to parallel the roundtable, organisations such as **Le Game, GAME, BIU, Neogames** and the **PGDA** should be considered.

Educational partners with clear potential include **ENJMIN**, the French public school for games. Within Germany, the **Games Academy** provides interesting opportunities, although the Karlsruhe outpost of the Royal Melbourne Institute of Technology research centre **GEELab**[361] perhaps offers more opportunities as a partner, as several interesting game artists are situated there, including Jens Stober. Within Poland, the **European Academy of Games**[362] may prove a fruitful partner; within Finland, the focus seems more likely to fall with traditional universities – we would note that the University of Tampere hosts the **Game Research Lab**,[363] which has a strong reputation in the field.

Finally, we come to individual artists and games companies. In France, beyond Isabel Arvers' personal work, artist **Antonin Fourneau**[364] has produced numerous works of game art, as well as creating the ENIAROF art festival.[365] **Douglas Stanley**[366] has produced an extensive variety of art pieces for a selection of different contexts, and may offer a means of bridging English and French-centred culture. In Germany, art collective **machina eX**[367] offer some fascinatingly varied approaches to games and theatre, with **//////////fur////**[368] providing more of a media art perspective. Notably, both organisations are participants in the Goethe-Institut's Spieltrieb, a series of interdisciplinary events which take place in various locations in Poland, the Czech

[355] http://www.isabellearvers.com.
[356] http://zkm.de/en/event/2014/09/zkmgameplay.
[357] http://www.invisibleplayground.com/en/welcome.
[358] http://www.gamescenes.org/.
[359] http://www.computerspielemuseum.de/1210_Home.htm.
[360] http://www.internationalgamesweekberlin.com/igwb-media.
[361] http://www.geelab.rmit.edu.au/.
[362] http://eag.epifit.com.pl/index.php.
[363] http://gamelab.uta.fi/.
[364] http://atocorp.free.fr/.
[365] http://www.eniarof.com.
[366] http://www.abstractmachine.net/blog/.
[367] http://machinaex.de/.
[368] http://www.fursr.com/.

Republic and Slovenia and which focus on play.[369] Polish collective **Department Gier**[370] offer us insights into city games, with strongly location- based work, while the **Mikro Orchestra**[371] and **Janek Simon**[372] are almost institutions among Polish approaches to art and games. For Finland, we must take account of the distinctive activity in Nordic larp, through the work of **Aarni Korpela**[373] and **Johanna MacDonald**,[374] and the demoscene. Given its close connections with the hacker scene, the demoscene is often difficult to access, so partners are difficult to select, but the **Pyrotech Demogroup**[375] are long-established and seem approachable. Alternatively, indie developer **Grand Cru Games** list many demosceners amongst their staff.[376] Lastly, Finno-German collective **YKON** bring together games, art and the politics of utopia.[377]

Identifying potential partner games companies is difficult, due to the problems of working with what are sometimes very large organisations. Consequently, we have tended to suggest smaller organisations here. For France, as noted earlier in the report, **Quantic Dream**[378] have made a significant impression through their 2010 release *Heavy Rain*. If a smaller scale partner is more desirable, **SwingSwingSubmarine**,[379] developer of well-received *Tetrobot* might be considered. Alternatively, new indie developer **Enigami** are putting the finishing touches to a Kickstarted project called *Shiness*,[380] which has already received a great deal of media attention. In Germany, larger developer **Yager**[381] made an impact with *Spec Ops: The Line*; smaller development house **Deck 13**[382] have shown their capacity to collaborate, working with Poland's CI Games to deliver *Lords of the Fallen*. Smaller again, **Studio Fizbin** produced their first game, critically-acclaimed adventure *The Inner World*, last year.[383]

In Finland, the most manageable major studio partner is likely to be **Remedy Entertainment**, producers of *Alan Wake*.[384] Possible smaller studios include **Housemarque**,[385] one of Finland's oldest independent developers, and **Frogmind**, one of the newest, who have seen significant success with *Badland*.[386] As to Poland, developer **11 bit studios** are clearly adopting interesting approaches to major games such as *This War of Mine*, while small independent studio **Crunching Koalas**[387] have obtained a reputation for curious combinations of game forms. Also based in Poland, longstanding independent development group **Transhuman Design** have produced a selection of notable games, including their most recent release, innovative multiplayer game *King Arthur's Gold*.[388]

[369] See http://www.goethe.de/ins/pl/lp/prj/spi/enindex.htm (accessed 29 January 2015).
[370] http://departamentgier.pl/.
[371] http://mikroorchestra.com/.
[372] http://culture.pl/en/artist/janek-simon.
[373] http://www.aarnikorpela.com. The website was unavailable at the time of writing due to a lapse in registration.
[374] MacDonald is part of art collective Ars amandi: http://www.ars-amandi.se/.
[375] https://www.facebook.com/PyrotechFin.
[376] Ari Kuokka, 'What the h*ll is in the water of Finland?' Available from http://grandcrugames.com/2013/03/what-the-hll-is-in-the-water-of-finland/.
[377] http://www.ykon.org/index2.html.
[378] http://www.quanticdream.com/en.
[379] http://www.swingswingsubmarine.com/.
[380] See http://www.shiness.fr/site. Enigami do not have a separate web presence.
[381] http://www.yager.de/.
[382] http://www.deck13.de/.
[383] http://www.theinnerworld.de/about_EN.html.
[384] http://remedygames.com/.
[385] http://www.housemarque.com/.
[386] http://frogmindgames.com/.
[387] https://crunchingkoalas.com/.
[388] http://pr.thd.vg/.

Although the principal focus of the report remains within the EU, we can also highlight a small number of potential partners in the non-EU areas explored. For East Asia beyond South Korea, we suggest that a first port of call for partners might be Japan, given the longstanding strength of games production there, and the clear recognition of video games as a (Japanese) cultural output. In general, we feel there is significant benefit in connecting with festivals and events which bring together actors in the games and art space, and with the individuals who organise these activities. In Brazil, for example, the **FILE Festival** is one such event; the festival's games coordinator, **Anita Cavaleiro**, and machinima coordinator, Fernanda Albuquerque de Almeida, would seem good points of address.[389] For South Korea, the **Out of Index** festival focuses on experimental game-making, inspired by the Experimental Gameplay Workshop held at San Francisco's renowned Game Developers' Conference.[390] In Russia, the **Multimatograf** festival at Vologda showcases multimedia art and also incorporates an annual demoparty.[391] In Japan, the **Japan Media Arts Festival** includes video games specifically under the 'entertainment' division, but also has space for various forms of interactive art; the festival jury may provide a useful source of contacts.[392]

These locales also offer interesting examples of artistic and experimental game work which suggest potential partnerships. Korean developers **Turtle Cream** and **Pok Poong** games, along with musicians Seongyi Yi and Chaeeun Kim of **Merry Go Sound**, are producing interesting independent work on the border of games and art, notably their award-winning collaborative piece *6180 The Moon*.[393] In Russia, video game developer **Ice-Pick Lodge** produces interesting artistic work, and has received international acclaim for both *Pathologic* and *The Void*, games which prompt engagement with narratives around disease and the nature of the soul.[394] The members of Brazilian outfit **Loud Noises** not only produce experimental games, but are also clearly active within their community, with artist and coder **Andre Asai** organising game jams and indie scene events (e.g. SPJam and SPIN).[395]

Within Japan, there is an extensive indie (*doujin*) scene, producing not only a body of interesting and artistic game work, but also a slew of very established and respected designers – Hideo Kojima and Shigeru Miyamoto among the most famous. **Fumito Ueda**, designer of the critically acclaimed *Ico* and *Shadow of the Colossus* is often presented as an auteur in the field, and may prove a productive partner as he is currently working as an independent (having left Sony in 2011).[396] Musician and artist **Toshio Iwai** has led the development of a number of games, notably *Electroplankton* (2005).[397] Experimental net art unit **Exonemo** (Kensuke Sembo and Yae Akaiwa) have also produced a number of game and game-like pieces, including *Object B*, a modified first-person shooter game.[398]

[389] http://file.org.br (accessed 29 January 2015).
[390] http://www.outofindex.org (accessed 29 January 2015).
[391] http://www.multimatograf.ru. The website was offline at time of writing, but festival organisers also have an active presence on VKontakte: http://vk.com/multimatograf (accessed 29 January 2015).
[392] See http://j-mediaarts.jp/jury?locale=en (accessed 29 January 2015).
[393] See http://j-mediaarts.jp/jury?locale=en; http://pok-poong.blogspot.co.uk; http://merrygosound.bandcamp.com/album/6180-the-moon (all accessed 29 January 2015).
[394] http://www.ice-pick.com/index_eng.htm (accessed 29 January 2015).
[395] http://www.loudnoises.com.br ; http://www.spjam.com.br/; http://spindies.tumblr.com (accessed 29 January 2015).
[396] http://www.fumi.to (accessed 29 January 2015).
[397] See, for example, http://www.digicult.it/digimag/issue-018/who-is-toshio-iwai/ (accessed 29 January 2015).
[398] http://exonemo.com (accessed 29 January 2015).

Gameography

1378(km). 2010, Jens M. Stober (dev., pub.), PC
6180 The Moon. 2013, Turtle Cream, PokPoong Games (devs.)/ Turtle Cream (pub.), PC.
Aion: Steel Cavalry. 2008, Aion Team Development Dept (dev.)/ NCsoft (pub.), PC
Alan Wake. 2010, Remedy Entertainment (dev.)/ Microsoft Game Studios (pub.), Xbox 360/PC
Angry Birds. 2009, Rovio Entertainment (dev.)/ Chillingo/Clickgamer (pubs.), mobile/ PSP
Anomaly: Warzone Earth. 2011, 11 bit studios (dev., pub.), mobile/ PC, Xbox 360, PlayStation network
APB: Reloaded. 2011, Reloaded Productions (dev.)/ K2 Network (pub.), PC ArcheAge. 2013, XL Games (dev.)/ Tencent Games (pub.), PC
Archeville. 2013, XL Games (dev., pub.), mobile
Assassin's Creed (series). 2007-15, Ubisoft Montreal, Ubisoft Annecy, Ubisoft Sofia, Ubisoft Milan, Ubisoft Toronto, Gameloft, Griptonite Games (devs.)/ Ubisoft (pub.), mobile/ PC/ multiple console
Badland. 2014, Frogmind (dev., pub.), mobile
Baldur's Gate. 1998, Bioware (dev.)/ Interplay Entertainment (pub.), PC
Battlestar Galactic Online. 2011, Bigpoint (dev., pub.), PC
Bedlam. 2014, RedBedlam (dev.)/ KISS ltd (pub.), PC
Blade and Soul. 2012, Team Bloodlust (NCsoft Developer Division)(dev.)/ NCSoft (pub.), PC
Bulletstorm. 2011, People Can Fly, Epic Games(devs.)/ Electronic Arts (pub.), PC/ PlayStation 3/ Xbox 360
Call of Duty (series). 2003-2014, Infinity Ward (2003–), Treyarch (2005-), Sledgehammer Games (primary devs.), Activision, Square Enix (pubs.), mobile/ PC/ multiple console
Candy Crush Saga. 2012, King (dev., pub.), mobile Café Mania. unknown date, Vostu (dev., pub.), mobile
Clash of Clans. 2012, Supercell (dev., pub.), mobile
Cold Winter. 2005, Swordfish Studios (dev.)/ Vivendi Universal Games (pub.), PlayStation 2
Company of Heroes 2. 2013, Relic Entertainment (dev.)/ Sega (pub.), PC
Crysis (series). 2007-13, Crytek (dev.)/ Electronic Arts (pub.), PC/ PlayStation 3/ Xbox 360
Cut the Rope. 2010, ZeptoLab (dev.)/ Chillingo (pub.), mobile/ PC/ Nintendo 3DS]

Dear Esther. 2012, The Chinese Room (dev., pub.), PC
Destiny. 2014, Bungie (dev.)/ Activision (pub.), PlayStation 2/ PlayStation 3/ Xbox 360/ Xbox One
Deus Ex: Human Revolution. 2011, Eidos Montreal (dev.)/ Square Enix (pub.), PC/ multiple console
Dishonored. 2012, Arkane Studios (dev.)/ Bethesda Softworks (pub.), PC/ PlayStation 3/ Xbox 360
DmC: Devil May Cry. 2013, Ninja Theory (dev.)/ Capcom (pub.), PC, multiple console
Donkey Kong. 1981, Nintendo (dev., pub.), arcade
Electroplankton. 2005, indieszero (dev.)/ Nintendo (pub.), Nintendo DS
Enslaved: Odyssey to the West. 2010, Ninja Theory (dev.)/ Namco Bandai Games (pub.), PC/ PlayStation 3/ Xbox 360
Far Cry. 2004, Crytek (dev.)/ Ubisoft (pub.), arcade/ multiple console/ PC Farmville. 2009, Zynga (dev., pub.), iOS, PC
Flappy Bird. 2013, Nguyễn Hà Đông (Dong Nguyen) (dev.)/ .GEARS Studios (pub.), mobile
Fruit Ninja. 2010, Halfbrick Studios (dev., pub.), mobile Goldeneye 64. 1997, Rare (dev.)/ Nintendo (pub.), Nintendo 64
Grand Theft Auto IV. 2008, Rockstar North (dev.)/ Rockstar Games (pub.), PC/ PlayStation 3/ Xbox 360
Grand Theft Auto V. 2013, Rockstar North (dev.)/ Rockstar Games (pub.), PC/ multiple console
Guild Wars. 2005, ArenaNet (dev.)/ NCSoft (pub.), PC
Half Life 2. 2004, Valve Corporation (dev.)/ Valve Corporation, Sierra Entertainment (pub.), multiple console/ PC
Happy Farm. 2008, 5 Minutes (dev., pub.), PC
Hatred. forthcoming, Destructive Creations (dev., pub.), PC
Heavenly Sword. 2007, Ninja Theory (dev.)/ Sony Computer Entertainment Europe (pub.), PlayStation 3
Heavy Rain. 2010, Quantic Dream (dev.)/ Sony Computer Entertainment (pub.), PlayStation 3
Ico. 2001 (re-release 2006, in HD 2011), Team Ico (dev.) / Sony Computer Entertainment (pub.), PlayStation 2/ PlayStation 3 (HD)
IL-2 Sturmovik (series). 2001-2013, 1C:Maddox Games, 1C Game Studios (dev.)/ 1C, Ubisoft (pub.), PC
King Arthur's Gold. 2013, Transhuman Design (dev., pub.), PC Knights of Pen & Paper. 2013, Behold Studios (dev., pub.), PC
L.A. Noire. 2011, Team Bondi (dev.)/ Rockstar Games (pub.), PC/ PlayStation 3/ Xbox 360
Lineage. 1998, NCSoft (dev., pub.), PC
Lord of the Rings. 2000, Reiner Knizia (designer)/ Kosmos, Fantasy Flight Games, 999 Games (pub.), board game
Lords of the Fallen. 2014, Deck13 Interactive, CI Games (devs.)/ CI Games, EU Square Enix (pubs.), PC, PlayStation 4, Xbox One

Max Payne. 2001, Remedy Entertainment (primary dev.)/ Gathering of Developers, Rockstar Games (pubs.), mobile/ PC/ multiple console
Megacity. unknown date, Vostu (dev., pub.), mobile
Metal Gear Solid (series). 1998-2014, Konami Computer Entertainment Japan (dev.)/ Konami (pub.), PlayStation 1-4
Mini Fazenda. unknown date, Vostu (dev., pub.), mobile
Monster Hunter Online. forthcoming, Capcom (dev.)/ Tencent (pub.), PC
MUD1. 1978, Roy Trubshaw, Richard Bartle (devs., pub.), PC
Nova: First Contact. forthcoming, Six to Start (dev., pub.), mobile
Order & Chaos Online. 2011, Gameloft (dev., pub.), mobile
Pac-man. 1980, Namco (dev., pub.), arcade/ multiple platforms
Path of Exile. 2013, Grinding Gear Games (dev., pub.), PC
Pathologic. 2005, Ice-Pick Lodge (dev.)/ Buka Entertainment (pub.), PC
Puzzles & Dragons. 2012, GungHo Online Entertainment (dev., pub.), mobile
Quantum Break. 2015, Remedy Entertainment (dev.), Microsoft Studios (pub.), Xbox One
Retorda. 2014, Department Gier (designer), alternate reality game
Runescape. 2001, by Jagex Games Studio (dev., pub.), PC
Settlers of Catan. 1995, Klaus Teuber (designer)/ Kosmos (first pub.), board game
Shadow of the Colossus. 2005, Team Ico (dev.)/ Sony Computer Entertainment (pub.), PlayStation 2/ PlayStation 3 (HD)
Shatter. 2009, Sidhe Interactive (dev., pub.), mobile/ PC/ PlayStation Network
Shiness. forthcoming, Enigami (dev.)/ Ynnis Interactive (pub.), PC
The Elder Scrolls V: Skyrim. 2011, Bethesda Game Studios (dev.)/ Bethesda Softworks (pub.), PC/ PlayStation 3/ Xbox 360
Space Invaders. 1978, Taito (dev., pub.), arcade/ multiple platforms
Spacewar!. 1962, Steve Russell et al. (dev.), PDP-1
Spec Ops: The Line. 2012, Yager Development (dev.)/ 2K Games (pub.), PC/ PlayStation 3/ Xbox 360
Starcraft. 1998, Blizzard Entertainment, Mass Media (N64 version)(dev.)/ Blizzard Entertainment, Nintendo (pubs.)
Star Citizen. forthcoming, Cloud Imperium Games (dev., pub.), PC
Sunset Overdrive. 2014, Insomniac Games (dev)./ Microsoft Studios (pub.), Xbox One
Taikodom. 2008, Hoplon Infotainment (dev., pub.), PC
Tetrobot and Co. 2013, SwingSwingSubmarine (dev., pub.), mobile, PC, Nintendo Wii U
The Black Helix. 2011, Design Zoo (dev., pub.), alternate reality game
The Inner World. Headup Games, Studio Fizbin (dev.)/ Neko Entertainment (pub.), PC
The New Year Games. 2012, Hide and Seek and Edinburgh's Hogmanay, with FOUND, Brian Hartley, Pippa Murphy and spotov (designers).
The Sims (series). 2000-14, Maxis, The Sims Studio (dev.)/ Electronic Arts (pub.), iOS / multiple console/ PC

The Void. 2008, Ice-Pick Games (dev.), ND games (pub.), PC
The Witcher. 2007, CD Projekt RED (dev.)/ Atari (pub.), PC
This War of Mine. 2014, 11 bit studios (dev., pub.), PC
Tomb Raider (series). Core Design (1996-2004), Crystal Dynamics (2006- present) (devs.)/ Eidos Interactive (1996–2009), Square Enix (2010–present) (pubs.), PC/ multiple console
Tom Clancy's Rainbow Six. 1998, Red Storm Entertainment (dev., pub.), multiple console/ PC
Tropico 5. 2014, Haemimont Games (dev.)/ Kalypso Media (pub.), PC/ PlayStation 4/ Xbox 360
Valiant Hearts: The Great War. 2014, Ubisoft Montpelier (dev.)/ Ubisoft (pub.), mobile/ PC, multiple console
Vangers. 1998, K-D Lab (dev.)/ Buka Entertainment (pub.)
Why So Serious?. 2007, 42 Entertainment (dev.), alternate reality game
Zaxxon. 1982, Sega (dev., pub.), arcade
Zombies, Run!. 2012, Six to Start with Naomi Alderman (dev.)/ Six to Start (pub.), mobile

Glossary of terms and abbreviations

Advergames: games expressly designed to promote a product or service
Android: mobile phone operating system, produced by Google
BAFTA: British Academy of Film and Television Arts
BBFC: British Board of Film Classification
Browser-based games: games designed to be played in an Internet browser (as opposed to games which are downloaded and/or installed)
CAGR: Compound annual growth rate, a business and investing-specific term for measuring investment performance
Chiptune: also known as chip music or 8-bit music. Synthesized electronic music produced by the sound chips of vintage computers or video game consoles
Crowdfunding: funding a project or venture by raising monetary contributions from a large number of people, who may also constitute the end users
Crowdsourcing: the process of obtaining services, ideas, or content by soliciting contributions from a large group of people
Developer: software developer who creates video games
DRM: Digital rights management. A class of technologies used by hardware manufacturers, publishers, copyright holders, and individuals to control the use of digital content and devices after sale
Engine, or games engine: a software framework designed for the creation and development of video games, often used on multiple games
e-Sports: used to describe organised video games competitions, especially between professional gamers
First person game: a game whereby the player sees the world through the eyes of the protagonist
FTE: Full time equivalent. Often expressed as a percentage or decimal, reflecting fractions of a full-time employee (e.g. an employee who work 18 hours of a 36 hour week counts as 0.5 or 50% FTE)
GooglePlay: a digital distribution platform operated by Google, allowing users to browse and download applications, including games, to Android phones
GVA: Gross value added. An economic measure of the value of goods and services produced in an area, industry or sector of an economy.
In-app purchases: a payment (see also microtransaction) made within a mobile game or application, usually for virtual goods
Install base: a measure of the number of units of a technology or game purchased and in use, as opposed to market share, which only reflects sales over a particular period
iOS: Apple's mobile operating system, for their iPhone and iPad hardware

IP: intellectual property, a legal term that refers to creations of the mind
MMORPG: Massively Multiplayer Online Roleplaying Game. An online game, most often with fantasy themes, which supports a large number of simultaneous players.
Microtransactions: see 'in-app purchases'
Mobile games: video games played on feature phones, smartphones or tablets, but not including dedicated handheld consoles such as Nintendo DS
MSG: Massive Social Game. A social game which supports a large number of simultaneous players.
N-Gage: a handheld gaming mobile from Nokia, released in 2003
Online gaming: games played on the Internet
OECD: The Organisation for Economic Co-operation and Development
PC: a traditional desktop or laptop computer, as distinct from a games console
Professional gaming: see 'e-sports'
Publisher: a company that publishes video games they have either developed internally or have had developed by a video game developer. Publishers are responsible for their product's manufacturing and marketing, including market research and all aspects of advertising
Review aggregator: a system that collects reviews of products, stores the reviews and uses them for purposes such as supporting a website where users can view the reviews and averaged 'ratings'
Self-publishing: the practice of a video game developer publishing their own game, rather than working with a separate publisher
Serious games: a game designed for a primary purpose of training, educating or informing a user, rather than entertaining them.
Shooter: a subgenre of action games, which often test the player's speed and reaction time, in this case by having them 'shoot' enemies or opponents.
SIC codes: Standard Industrial Classification codes. A system established in the United States for classifying industries into areas by a four-digit code.
Simulation games: attempts to copy various activities from real life in the form of a game. Goals are not always strictly defined, instead allowing free control of characters or vehicles. Includes human simulation games such as The Sims.
Smartphone: a mobile phone with an operating system, typically capable of functions beyond phone calls, texting and taking photographs e.g. iPhone
Social games: games played as a way of social interaction, typically through social networks such as Facebook
Steam: an internet-based digital distribution, digital rights management (DRM), multiplayer, and social networking platform developed by Valve Corporation
STEM subjects: Science, technology, engineering and mathematics
Survival games: games in which the aim is to survive as long as possible by managing resources, often while interacting with other computer-generated or online players
Survival horror: a genre of video games inspired by horror fiction that focuses on survival of the character and trying to scare the player
Tablet: a mobile computer with touch-screen display, circuitry and battery in a single unit

Transmedia: a form of storytelling that tells a single story across multiple platforms and formats, usually using current digital technologies
UKTI: UK Trade & Investment. A UK government department working with businesses based in the United Kingdom to ensure their success in international markets

Nick Webber is Associate Director of the Birmingham Centre for Media and Cultural Research, at Birmingham City University, UK. He has written on the relationship of technology and culture, identity, law and history, and holds a PhD in Medieval History. His current research includes the conditions of work within the UK games industry, player history and culture in massively multiplayer online games, and practices of online archiving and civic history.

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We would be grateful to hear from anyone offering comments or additional information, or drawing our attention to errors in this work. Please get in touch.

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