



Submission to

**Senate Environment and Communications
References Committee**

Subject

**Inquiry into the future of Australia's video game
development industry**

Date

8 September 2015

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1. Introduction

The Interactive Games and Entertainment Association (**IGEA**) welcomes the opportunity to respond to the Senate Environment and Communications References Committee's (**ECRC**) Terms of Reference on the future of Australia's video game development industry (the **TOR**) set out below:

The future of Australia's video game development industry, with particular reference to:

- a. How Australia can best set regulatory and taxation frameworks that will allow the local video game development industry to grow and fully meet its potential as a substantial employer
- b. How Australia can attract video game companies to set up development operations in Australia and employ local staff
- c. How export opportunities from Australia's local video game industry can be maximised
- d. Any other related matters.

In our submission we have set out a brief description of IGEA, a general submission on the state of the interactive games industry in Australia, interactive games developers in Australia, challenges and the need for a sustainable ecosystem, followed by a more detailed response to the specific questions raised by the TOR.

2. Key Recommendations

In order for the Australian interactive games development industry to harness global opportunities and overcome the current challenges, IGEA urges the Senate's ECRC to consider the following:

1. Extending the Producer Offset to interactive games development
2. Self-sustaining funding for interactive games' projects and studios
3. Supporting innovation clusters, including in regional areas
4. Developing and retaining cutting-edge games developer talent in Australia
5. Creating targeted support for digital economy focused export initiatives
6. Committing to the updated classification regime
7. Updating Australia's National Digital Economy Strategy

These key recommendations, which are not exhaustive, are designed to ensure a strong and vibrant future for Australia's interactive game development industry as part of the broader ecosystem for the interactive game industry in Australia with a strong export focus. This has the potential to generate positive spill-on effects for other sectors and consumers in the Australian digital economy.

3. About IGEA

IGEA is an industry association representing the business and public policy interests of Australian and New Zealand companies in the interactive games industry. IGEA's members publish, market, develop and/or distribute interactive games and entertainment content and related hardware.

The following list represents IGEA's current members:

- Activision Blizzard
- All Interactive Distribution
- Disney Interactive Studios
- Electronic Arts
- Five Star Games
- Fiveight
- Gamewizz Digital Entertainment
- Google
- Microsoft
- Mindscape Asia Pacific
- Namco Bandai Entertainment
- Nintendo
- Sony Computer Entertainment
- Take 2 Interactive
- Total Interactive
- Ubisoft
- VR Distribution
- Warner Bros. Interactive Entertainment
- ZeniMax Australia

In the preparation of this submission, IGEA also consulted with a large number of non-member interactive games development companies and others in the interactive games industry in Australia and overseas.¹

4. General Submission

A. State of the interactive games industry in Australia

The interactive games industry is the fastest growing entertainment industry globally.² In 2014, the industry worldwide was estimated to be worth approximately US\$77 billion and forecast to grow to US\$96 billion by 2018.³ By way of comparison:⁴

- The film industry (including box office, home entertainment, sell-through, video on demand and rental, but excluding actual advertising and rental) was estimated to be worth US\$107Bn (with a 4.4 percent compound annual growth rate)
- The music industry (incorporating physical distribution, digital distribution and live music) is estimated to account for US\$52bn by 2019, with a compound annual growth rate of 0.8 percent.

In 2014, Australia's interactive games industry reached \$2.46 billion in retail sales in Australia (excluding revenue generated from interactive games development or exports), a 20 percent

¹ Discussions included: The Games Developers' Association of Australia (GDAA), Nnooo Studios, Flat Earth Games, ZeniMax Australia, Intuitive Game Studios, Disparity Games, Big Ant Studio, Riot Games, The Academy of Interactive Entertainment, Wargaming, Defiant, The Screen Producers Australia, The Entertainment Software Association of Canada and others. This submission does not purport to represent the views of any of these third parties.

² Entertainment Software Association of Canada, "Levelling Up: Winning Strategies to Support Canada's Dynamic Video Game Industry", March 2014, page 3 (the **ESAC Submission**).

³ DFC Intelligence, *Worldwide Video Game Forecast*, cited in Makuch, E, "Report: Xbox One and PS4 will sell 100 million units each by 2020" *Gamespot*, 12 February 2014, at <http://www.gamespot.com/articles/report-xbox-one-and-ps4-will-sell-100-million-units-each-by-2020/1100-6417687/> (accessed 3 August 2015).

⁴ PriceWaterhouseCoopers, *The Australian Entertainment and Media Outlook 2015-2019*, 14th Edition, 2015.

increase from its previous year.⁵ That figure incorporated traditional retail sales of \$1.214 billion and \$1.248 billion in digital sales, the latter increasing by 39 percent. Mobile games, digital downloads and subscriptions also continued to grow significantly in 2014. The growth in digital came primarily from a 56 percent jump year-on-year in mobile game downloads. More than half of all mobile app revenue in Australia was from interactive games, of which the majority were generated through in-app purchases. For further market data for Australia in 2014 refer to **Appendix A** of this submission.

The IGEA's Digital Australia 2016 Report, released on 28 July 2015 relevantly found that:⁶

- 98 percent of Australian homes with children under the age of 18 have a device for playing interactive games
- 68 percent of Australians play interactive games, with 78 percent of the game playing population aged 18 years or older
- Older Australians continue to make up the largest group of new players over the past four years. Australians aged 50 and over now make up 23 percent of the interactive game playing population - increasing their essential digital literacy for the digital economy
- The average age of those engaged in Australian interactive games has increased from 32 to 33 years old since 2013 and nearly half (47 percent) of this population is female
- As part of the normal media usage, the daily average time spent playing interactive games is 88 minutes by Australians
- 27 percent of players have tried making interactive games using software and 9 percent have studied or plan to study interactive games subjects

Interactive games are increasingly identified for their ability to serve other purposes in addition to simply entertainment. Researchers, educators, businesses and journalists have observed the importance of serious and related interactive games. Importantly, 24 percent of Australian adults have used interactive games at work for training purposes and 35 percent of parents say interactive games are embedded in their children's school curriculum. Games can also be beneficial for healthy ageing, with 89 percent of older Australians say playing interactive games improves thinking skills, 76 percent agree interactive games increase mental stimulation, 79 percent find interactive games help improve coordination and dexterity and 61 percent state interactive games help fight dementia.

A contemporary analysis of the Australian interactive games industry is provided in the IGEA's Digital Australia 2016 Report.⁷ A number of case studies highlighted in **Appendix B** of this submission outline examples of:

- Serious games and their application in the workplace
- The use of interactive games in health, particularly for older Australians.

A historical overview of the interactive games industry in Australia can be found in a number of previous reports including Screen Australia's *Playing for Keeps*,⁸ the Australian Centre for Moving

⁵ Research based on The NPD Group Australia, Time period December 31 2012 – Dec 29 2013, December 30 2013 – Dec 28 2014 and Telsyte, *IGEA Digital Market Monitor*, 2014, cited at IGEA, "Australian game sales surge in 2014", *Media Release*, 4 March 2015, at <http://www.igea.net/2015/03/australian-game-sales-surge-2014/> (accessed 3 August 2015).

⁶ IGEA, *Digital Australia Report 2016*, at <http://www.igea.net/wp-content/uploads/2015/07/Digital-Australia-2016-DA16-Final.pdf> (accessed 29 July 2015) (**DA16**).

⁷ A copy of the report at <http://www.igea.net/2015/07/games-are-present-in-almost-all-australian-family-households/> (accessed 29 July 2015).

⁸ Screen Australia, *Playing for Keeps: Enhancing Sustainability in Australia's interactive games industry*, 2011, at http://www.screenaustralia.gov.au/about_us/pub_gamesreport.aspx (accessed 27 July 2015) (**Screen Australia Report**).

Images' *History of Games Development in Australia*⁹ and the CCI's *Working in Australia's Digital Game Industry: Consolidation Report*.^{10 11}

B. Interactive games developers in Australia

In terms of interactive games development, Australia is known for having a small, but diverse, games developer sector with independent studios "producing various types of games for a variety of platforms".¹² A recent video on the interactive games development industry can be accessed [here](#).¹³ It highlights the experiences of independent Australian studios Nnooo, Flat Earth Games and Double Mercury Entertainment, noting that "survival is high on the agenda".

In June 2012, the Australian Bureau of Statistics (ABS) relevantly found that:¹⁴

- Digital game developers employed 581 people
- During 2011-12 developer businesses generated \$89.4m in total income
- Of this, end-to-end development income accounted for \$44.4m (49.6 percent) and development services income accounted for \$43.4m (48.5 percent)
- During 2011-12 developers produced 245 games, incurring \$49.9m in production costs
- The average cost per production of games varied by format: games produced exclusively for consoles (including handheld consoles) incurred the highest average cost per production at \$1.2m and games developed exclusively for mobile and web platforms had the lowest average cost per production at \$74,000
- Titles developed simultaneously for multiple platforms incurred an average cost of \$845,800 per production.

These 2012 figures represent a significant contraction in the interactive games development industry in Australia when compared to the figures in 2007.¹⁵ Employment had dropped to one third of its 2007 workers in the industry (previously 1,431 workers) and there was a reduction of total income from \$116.9 million.

Described as a "fractured and small set of teams",¹⁶ Australia's interactive games development industry sits in contrast to the overall growth of the Australian interactive games industry more broadly and the increasing engagement by Australians with interactive games and the digital economy. The state of the Australian sector is in contrast to countries like Canada and the United Kingdom where support for the interactive games development industry has been forthcoming.

⁹ Knight, S and Brand, J, *History of Game Development in Australia*, ACMI, 2007.

¹⁰ Australian Research Council Centre of Excellence for Creative Industries and Innovation (CCI) and Queensland University of Technology in partnership with the Games Developers' Association of Australia, *Working in Australia's Game Development Industry, A Consolidated Report*, May 2011, at <http://www.cci.edu.au/sites/default/files/shaukka/Working%20in%20Australia%27s%20Digital%20Games%20Industry%20Consolidation%20Report%20May%202011.pdf> (accessed 27 July 2015).

¹¹ Another resource is Department of Communications, Information Technology and the Arts, *From Cottages to Corporations: Building a Global Industry from Australian Creativity – Report on Access to Overseas Markets for Australia's Creative Digital Industry*, 2003.

¹² Screen Australia Report, page 4.

¹³ IGEA, *DA16 - Video Games as a career path*, at <https://www.youtube.com/watch?v=iwoZ03AY7Hw> (accessed 24 August 2015).

¹⁴ <http://www.abs.gov.au/Ausstats/abs@.nsf/Latestproducts/8679.0Main%20Features32011-12?opendocument&tabname=Summary&prodno=8679.0&issue=2011-12&num=&view=> (accessed 22 July 2015).

¹⁵ Australian Bureau of Statistics, *Digital Game Development Services Australia 2006/07* (Catalogue Number 8515.0).

¹⁶ Leigh Harris, Flat Earth Games at <https://www.youtube.com/watch?v=iwoZ03AY7Hw> (accessed 3 August 2015).

C. Challenges in the interactive games development sector in Australia

“Trends in the local game development scene have mostly included a refocusing on a fractured and small set of teams. There used to be many more Triple A studios in Australia but after the GFC hit a lot of them got closed...” - Leigh Harris, Flat Earth Games.¹⁷

Indeed there are a number of challenges in the interactive games development industry in Australia. In 2011-12, Screen Australia noted these challenges included falling foreign investment due to the increasing value of the Australian dollar and talent being driven offshore which had resulted in interactive game development studio closures and the loss of talent in Australia.¹⁸ Internationally, the console market had contracted with the then generation of hardware reaching maturity¹⁹ and a focus by larger interactive games publishers on proven franchise titles.²⁰ Screen Australia relevantly noted that:²¹

In order to reduce development costs, publishers are relocating studios to territories that offer tax incentives or territories with low labour costs such as China, India and Russia.

During the preparation of this submission, IGEA conducted a number of interviews with individuals and organisations currently involved in interactive games development in Australia. The interviews confirmed that a number of local interactive games developers continued to face these same challenges in Australia. Briefly those challenges can be summarised as:

1. Inability to access Australian and overseas capital for innovative interactive game development
2. Non-competitive tax structures for interactive games development and production
3. Limited marketing and other general business assistance for the promotion of interactive games in the global marketplace
4. Loss of talent to overseas markets, particularly North America and Europe, despite the strong pipeline of new talent through innovative Australian training institutions specialising in interactive game development and computer science
5. Inadequate broadband infrastructure.

These are further addressed in our submission below.

D. The need for a sustainable ecosystem

IGEA is supportive of the ongoing success and evolution of the Australian interactive games industry and as part of that broader ecosystem, a strong future for local interactive games development. It is also of the view that there are a number of opportunities for Australian interactive games developers including the increasing penetration of Smartphones and tablets, the growth in social games (for example, through social networking platforms like Facebook), increased demand for serious, health-related and educational games, the continued emergence of connected devices in

¹⁷ Ibid.

¹⁸ Screen Australia Report, pages 2-3 and Screen Australia, *Australian Interactive Games Fund: Options paper for comment*, 2012, page 5, at http://www.screenaustralia.gov.au/getmedia/4aa35671-58b6-409c-9d04-3d8d3304ae37/Games_consult_10Dec2012.pdf (accessed 27 July 2015).

¹⁹ Namely Xbox 360, PlayStation 3 and Wii which was released in 2005/6. Xbox One and PlayStation 4 were released in late 2013.

²⁰ Ibid, page 14.

²¹ Screen Australia, *Australian Interactive Games Fund: Options paper for comment*, 2012, page 6, at http://www.screenaustralia.gov.au/getmedia/4aa35671-58b6-409c-9d04-3d8d3304ae37/Games_consult_10Dec2012.pdf (accessed 27 July 2015).

the home and enhanced high-speed broadband infrastructure. Australia also has the potential to become an important gateway to growing Asian markets.

Interactive games developers represent a unique mix of creative and technology professionals, who collaborate to create highly innovative products. As the Entertainment Software Association of Canada states, the skillsets of interactive games developers are multi-functional and encompass:²²

Digital art design, animation, visual effects, game design, sound design, motion and performance capture, computing engineering, production, quality assurance, narrative development, and business and marketing.

These skills are readily transferable to other parts of the Australian economy, particularly technology sectors such as e-learning, healthcare simulations, training and development for heavy industries such as mining and traditional software development. Interactive games are also regularly used by the screen industry in furthering audience engagement. An example of this is *Happy Feet Two*, developed by KMM Games which was a tie-in game to the feature film.

Low barriers to entry also mean that interactive games studios provide a unique training ground for young people to develop entrepreneurial skills in an international marketplace. Employment opportunities for Australian youth continue to be high on the nation's agenda with unemployment at levels unseen since the 1992 recession.²³ Interactive games studios provide opportunities to link the needs of employers in the broader digital economy with the skills of young people focusing on both hard and soft skill innovation. Indeed, recent research confirms that 27 percent of players have tried making interactive games using software and 9 percent have studied or plan to study interactive games subjects.²⁴

The support of the Australian interactive games industry, at all levels including development, therefore has the capacity to produce cutting-edge digital products and technologies that are globally competitive and positive benefits to all Australians in terms of educational, training, health and positive aging outcomes. It also has the potential to grow Australian's digital literacy, particularly important for the older generations who increasingly utilise digital platforms to engage in banking, social services, e-commerce and health provision. IGEA is of the view that a holistic approach must be taken, incorporating appropriate regulatory and taxation frameworks, talent acquisition and retention incentives and export opportunities aligned as part of a broader Federal Government digital economy strategy.

These issues are discussed in more detail in response to the TOR in our submission below.

²² ESAC Submission, page 3.

²³ Campbell, L, "Universities offer 'education to nowhere' as youth jobs dry up", *Australian Financial Review*, 16 August 2015, at <http://www.afr.com/leadership/careers/jobs/universities-offer-education-to-nowhere-as-youth-jobs-dry-up-20150811-giwi5g#ixzz3jgtqTR6Y> (accessed 21 August 2015).

²⁴ IGEA DA;16 research referred to above.

5. Terms of Reference

A. Taxation and regulatory frameworks

How Australia can best set regulatory and taxation frameworks that will allow the local video game development industry to grow and fully meet its potential and a substantial employer?

Lack of national support

At present, interactive games developers have limited access to incentivised regulatory or taxation frameworks in Australia apart from those that are available to all businesses. This includes the Research and Development Tax Incentive²⁵ and support through other grants and services.²⁶ Unfortunately, there is no specific national support for interactive games development.

Some of the States provide specific funding support for interactive games development, generally through their screen bodies. For example, Film Victoria provides the most comprehensive support for interactive games developers which currently encompasses three tiers of key support:²⁷

1. Assigned Production Investment – Games: Funding is generally capped at \$150,000 with a total of funds of \$340,000 and is available to assist Victorian interactive games developers to produce a prototype or full game, and also for marketing and related expenses. It is subject to Film Victoria acquiring a 1 percent copyright interest in the project²⁸
2. Games Release: Up to \$30,000 is available as a grant to support Victoria's newer and smaller interactive games studios to deliver a well-planned and marketed release of their project. The funding can be used to assist with legal fees, marketing assistance, business development and licensing costs.
3. Games Professional Placements: A program that supports Victorian interactive games companies to engage a Victorian practitioner.

It is therefore unsurprising that the States of Victoria has attracted 40 percent of the Australian interactive games development industry.²⁹ IGEA supports such access to development funds at a State level as a critical component of backing for the interactive games development industry, particularly for new projects and enterprise level support.

History of Australian Government support

The lack of support for interactive games development in Australia has been considered previously.

In 2011, Screen Australia partnered with PwC to undertake extensive industry consultation and economic modelling on how to support the Australian interactive games industry. In its report

²⁵ Information on the R&D Tax Incentive is available at: <http://www.business.gov.au/grants-and-assistance/innovation-rd/RD-TaxIncentive/Pages/default.aspx> (accessed 24 August 2015).

²⁶ For example, Austrade and Enterprise Australia.

²⁷ Film Victoria website at <http://www.film.vic.gov.au/funding/games> (accessed 10 August 2015).

²⁸ Film Victoria, *Terms of Trade*, 18 June 2015 available at http://www.film.vic.gov.au/_data/assets/pdf_file/0003/90399/Terms-of-Trade-FINAL-PDF-18-June-2015.PDF (accessed 10 August 2015).

²⁹ Dominguez, J, "State government commits to \$1.5m development fund for local games", *Sydney Morning Herald*, 21 November 2014 at <http://www.smh.com.au/digital-life/games/state-government-commits-to-15m-development-fund-for-local-games-20141120-11qz8b.html#ixzz3iNkk8Tt> (accessed 10 August 2015).

entitled “*Playing for Keeps*”, Screen Australia put forward options for three key areas of support for the Australian interactive games development industry:³⁰

1. New tax offset to assist with the production of stand-alone interactive entertainment titles
2. Extension of the existing Producer Offset in the film and television industry to allow expenditure of interactive entertainment components of drama and documentary film content
3. Development of an Online Production Fund as a complementary initiative to support the production of premium original content for online delivery.

All three options were put forward by Screen Australia as important supports to mitigate against the high financial risks associated with the creation of original content by Australian game developers and to encourage studios to retain intellectual property.³¹

In 2012, as part of the Federal Government’s Convergence Review, the State and Territory Screen Agency Forum also recommended the extension of the Producer Offset to digital interactive content and games, with a modified test for significant Australian content and thresholds and guidelines specific to the form.³² Subsequently, the Convergence Review recommended a similar games offset scheme (the converged content production fund) for greater support for the industry.³³

In 2013, the Australian Government established the Australian Interactive Games Fund (**AIGF**) which was tasked to allocate \$20 million over three years to Screen Australia to support the interactive games industry. The AIGF encompassed both Project and Enterprise funding. It was discontinued after one year of operation in early 2015 as part of the Government’s policy to reduce spending.

Options for supporting growth

In order for the local interactive game development industry to grow and fully meet its potential in Australia and overseas, IGEA urges the Senate’s ECRC to consider five key areas of the current regulatory and taxation frameworks:

- I. Access to investment incentives through the extension of the Producer Offset
- II. Self-sustaining funding for interactive games’ projects and studios
- III. Cluster development, particularly in regional areas
- IV. Ongoing support for the use of online classification tools for interactive games
- V. Updated Australian Government National Digital Strategy

Support by the Australia Government in these terms, which are described in more below, has the potential to make the interactive games industry more attractive for private investment both in Australia and internationally. It also has the capacity to allow Australia to establish itself as a world-leader in this innovative and cutting-edge industry, recognising the interrelationships between different segments of a digitally enabled economy.

³⁰ Screen Australia Report, page 3.

³¹ Ibid, page 23.

³² State and Territory Screen Agency Forum, *Submission to the Convergence Review*, 2012, page 9.

³³ Department of Broadband, Communications and the Digital Economy, *The Convergence Review: Final Report*, March 2012, page 63, at http://www.abc.net.au/mediawatch/transcripts/1339_convergence.pdf (accessed 27 July 2015).

I. Extension of the Producer Offset

“I hope that we follow a model that is closer to the UK’s or Canada’s model, which is a tax-break model.... If we really want to think about the broader components of the industry, what’s worked really well in Canada by having the tax-break, really big companies have moved there. They’ve opened up offices and employed an awful lot of local talent and helped strengthen that talent pool” – Nic Watt, Nnooo³⁴

The extension of the Producer Offset to the interactive games development industry is key for the sustainable growth and international competitiveness of the sector, with positive flow-on effects for Australia’s broader digital economy. Like many other forms of content and technology, interactive games are often considered to be more financially risky and therefore have not traditionally attracted high levels of investment support. As was recognised by Screen Australia, enhanced government support could mitigate the perceived risks and make the sector more attractive to domestic and foreign investment.³⁵

Screen Australia is the primary Australian Government agency that delivers direct and indirect investment into the independent screen production sector in Australia. This encompasses a mix of direct investment (grants, interest-free loans and pro-rata equity investment) and indirect investments in the form of the Producer Offset. The Producer Offset is a refundable tax offset available to producers of content for qualifying Australian production expenditure (**QAPE**). If eligible, producers can receive a 40 percent offset of QAPE for feature films and 20 percent for other projects with certain expenditure thresholds.³⁶

It is generally acknowledged that the Producer Offset tax regime for Australian film and television productions has worked well to achieve the original policy intention to:³⁷

... help the film and television industry to become more competitive and responsive to audiences, and will be a major incentive for projects with significant commercial potential... The [Offset] provides a substantial opportunity for producers to retain significant equity in their productions and build stable and sustainable production companies, both important for the long term growth of the film industry.

On the back of this success, in 2011 Screen Australia recommended the introduction of an Interactive Entertainment (Games) Offset with two levels of support, namely a 30 percent tax credit on eligible expenditure with a minimum threshold expenditure of \$500,000 and a 20 percent tax credit on eligible expenditure with a minimum threshold expenditure of \$200,000.³⁸ Screen Australia stated:³⁹

Economic modelling of this proposed offset indicates that over a five-year period there would be an additional investment of \$146 million, of which \$100 million would come from foreign sources. In the medium-to-high budget section of the industry analysed for this

³⁴ At <https://www.youtube.com/watch?v=iwoZ03AY7Hw> (accessed 3 August 2015).

³⁵ Screen Australia Report, page 3.

³⁶ Summary by the Department of Broadband, Communications and the Digital Economy, *The Convergence Review: Final Report*, March 2012, page 62, at http://www.abc.net.au/mediawatch/transcripts/1339_convergence.pdf (accessed 27 July 2015).

³⁷ Senator Helen Coonan and Senator George Brandis SC, *New producer incentive for Australian film and television productions*, Joint Media Release, 8 May 2007.

³⁸ Screen Australia Report, page 23.

³⁹ Ibid, page 3.

research, this would result in an additional contribution of \$76 million to Australia's Gross Domestic Product and a 50 percent increase in the number of jobs.

The Games Development Association of Australia and Screen Producers Australia have also previously argued for the extension of the Producer Offset to interactive games on the basis that it will provide a smart and efficient, market-driven tax incentive that will stimulate investment and the increased content creation in Australia for the long-term sustainability of the interactive games development industry.

Indeed, there is clear evidence from around the world on the success of tax offsets for boosting the interactive games development sector in those territories, including in the following territories:

1. A number of **Canadian States**, including British Columbia, Manitoba, New Brunswick, Nova Scotia, Ontario, Prince Edward Island and Quebec provide competitive tax incentives for games development as digital media. These are refundable tax credits ranging from 17.5 percent to 40 percent on labour incentives.⁴⁰ As a result, Canada is now home to the third largest games industry in the world, second only to the United States and Japan.⁴¹ In 2014 it employed 16,500 people directly and created the equivalent of 27,000 full-time jobs with 329 interactive games development studios.⁴²
2. In the **United States**, a number of states including Florida, Louisiana and Texas offer tax credit frameworks of up to 35 percent for interactive games development.
3. In the **United Kingdom**, since 1 April 2014 Video Games Tax Relief (**VGTR**) can be claimed for interactive games which are British, intended for supply and where at least 25 percent of core expenditure (expenditure on pre-development, principal photography and post-development) is incurred on goods or services that are provided from within the European Economic Area.⁴³ If a studio qualifies for the VGTR then it can claim an additional deduction worth 100 per cent of core expenditure (where core expenditure is a maximum of 80 per cent of total core expenditure). If the interactive games development studio is loss-making, it will be able to surrender such losses for a payable tax credit worth 25 per cent of core expenditure (i.e. effectively a payable credit of a maximum 20 per cent of total core expenditure). Interactive games development studios may separately be eligible for research and development relief in certain circumstances.⁴⁴
4. **France** offers a 20 percent tax offset for production expenditure for games.⁴⁵

Other countries, including New Zealand are looking at the extension of producer offsets to the interactive games development industry.⁴⁶

A case study based on Florida is provided in **Appendix C**. It provides an overview of the significant benefits that have accrued to the state in terms of employment and income in the interactive games sector as a result of the introduction of a production tax offset.

⁴⁰ PWC, *The Big Table*, at <http://www.pwc.com/ca/en/entertainment-media/publications/pwc-big-table-digital-animation-2014-08-en.pdf> (accessed 20 August 2015).

⁴¹ ESAC Submission, page 2.

⁴² Ibid, page 4.

⁴³ GOV.UK, *Video Games Development Company Manual*, at <http://www.hmrc.gov.uk/manuals/vgdcmanual/index.htm> (accessed 24 August 2015).

⁴⁴ GOV.UK, *Corporation Tax: creative industry tax reliefs*, at <https://www.gov.uk/corporation-tax-creative-industry-tax-reliefs> (accessed 24 August 2015).

⁴⁵ Subject to the production expenditure passing a cultural significance test.

⁴⁶ New Zealand Games Developers Association, "Jobs in NZ Games Industry Grow in FY2015", *Press Release*, 21 August 2015 at <http://nzgda.com/news/survey2015/> (accessed 21 August 2015).

In short, the extension of the Producer Offset to interactive games development in Australia has the capacity to assist studios in becoming more competitive internationally. It creates financial incentives for projects with significant commercial value, particularly high-end console games. Through attracting domestic and overseas investment, interactive games developers are more likely to build stable and sustainable studios which are critical to longer-term growth of the industry. Leveraging Australia's geographic position, this may also assist in the penetration of the Asian markets. The growth of interactive games development locally will also attract talent and bolster other industries that can take advantage of the skills and technology developed in the sector.

IGEA would be pleased to discuss the extension of the Producer Offset to the interactive games development industry in more detail at an appropriate time in the future. Such discussion could necessarily include the level of the offset, applicability to appropriate expenditure, general criteria and expenditure thresholds.

II. Self-sustaining funding for interactive games development

It is imperative that the Australian Government assist to improve access to capital for interactive games developers. Initial direct government funding through a self-sustaining model, i.e. based on soft or limited recourse loans that are repaid on the successful commercialisation of projects or enterprise growth, would also generate valuable growth in the sector, particularly at the coal-face for small-scale projects by allowing small studios to grow incrementally through their success.

Many overseas territories provide direct funding models, including Finland.⁴⁷ The establishment of such a funding model was recommended by Screen Australia in its submissions to the National Cultural Policy and Convergence Review⁴⁸ and supported by other industry players. This recommendation was subsequently taken up by the Australian Government through the AIGF. The benefits of self-sustaining funding for interactive games development have therefore been articulated in a number of previous reports.⁴⁹

In circumstances where the AIGF was abolished after only one year of operation it is impossible to ascertain its full impact or potential for growth in the interactive games development industry. Anecdotal evidence suggests that many of the studios that were recipients of the initial funds were able to leverage those funds for commercial success. One studio, Flat Earth Games, noted that initial AIGF funding allowed it to bring its successful Australian release of *Towncraft* to new platforms and overseas markets. Based on that success Flat Earth Games has since developed three further interactive games.⁵⁰ Such examples provide an initial positive indication of the potential of a self-funding model of seed assistance for interactive games development.

⁴⁷ Through TEKES, the Finnish Funding Agency for Technology and Innovation: Neogames, *The Games Industry of Finland*, 2014, page 39 at http://www.tekes.fi/globalassets/ohjelmat-ja-palvelut_uusin/skene/brochure/game-industry-finland-brochure-2015.pdf (Neogames Report) (accessed 27 July 2015).

⁴⁸ Under the name of an Online Production Fund: Screen Australia Report, page 28.

⁴⁹ For example, Screen Australia, *Australian Interactive Games Fund: Options Paper for Comment*, 10 December 2012.

⁵⁰ IGEA, *DA16 - Video Games as a career path*, at <https://www.youtube.com/watch?v=iwoZ03AY7Hw> (accessed 24 August 2015).

III. *Backing for innovation clusters*

IGEA supports the GDAA's calls for the creation of key "innovation clusters" such as The Arcade, which create collaborative workspaces for interactive games developers encouraging economies of scale in terms of resources, interaction, collaboration and knowledge-sharing. The Arcade, based in Melbourne, has been aptly described as:⁵¹

The Arcade is a not for profit co-working space for Australia's digital games community based in Melbourne which houses a gamification workshop space encouraging projects from non-entertainment industries to leverage games methodologies, technologies and psychologies.

Hubs of this nature create a centre of activity for allowing visiting companies and organisations including potential investors to support localised development initiatives. The development of innovation clusters is a strategy that has been used with success in many of the Scandinavian countries, including Finland, which boasts seven regional games clusters, many funded by support through the European Union.⁵² Hubs are currently in Turku, Tampere, Oulu, Kajaani, Joensuu, Kotka and Kouvola and there are also plans to set up clusters in Jyväskylä and Rovaniemi.

Furthermore, there is no reason that interactive games development clusters need to be located in major cities nor restricted solely to interactive games development. Appropriate regional areas can be provided with a potential economic boost, attracting local employment (particularly youth employment) and innovation through technology-based clusters. With sufficient broadband infrastructure, interactive games development can occur anywhere and anytime.⁵³ The University of Wollongong provides an outstanding example of this in its recently founded Innovation Campus, a world-class, award-winning research and commercial precinct.⁵⁴

IV. *Ongoing support for the updated classification regime*

IGEA applauds recent amendments to the *Classification Act*⁵⁵ which enable certain content, including relevantly online and mobile device content, to be classified using classification tools.

On 10 March 2015, the Australian Government announced that Australia would join the International Age Rating Coalition (IARC) and participate in the pilot of their online classification tool. The IARC tool was created as a global solution to make it as straightforward as possible for both Australian and international developers to assign local classifications, enabling them to inform parents, caregivers and other purchasers of the age appropriateness of their digital games in a way with which they are familiar.

The amendment of the legislation, together with the decision to allow Australian interactive games developers to leverage the IARC tool is a welcomed recent regulatory development. IGEA supports the ongoing utilisation of the IARC tool to reduce the regulatory barriers to the commercialisation of interactive game products, which will be further enhanced by the implementation of the next

⁵¹ Invest Victoria, *ICT – Games*, website at <http://www.invest.vic.gov.au/opportunities/information-and-communication-technology-ict/digital-games> (accessed 10 August 2015).

⁵² Neogames Report, page 18.

⁵³ One games developer based in Noosa, Queensland relocated from Brisbane to set up their studio. She noted that the main challenge to moving to a regional centre was the need for high-speed broadband infrastructure.

⁵⁴ <http://www.innovationcampus.com.au/index.html> (accessed on 10 August 2015).

⁵⁵ Through the *Classification (Publications, Films and Computer Games) Amendment (Classification Tools and Other Measures) Bill* (Cth) 2014.

tranche of reforms as outlined in the Australian Law Reform Commission's report on classification and content regulation.⁵⁶

V. *Updating Australia's National Digital Economy Strategy*

IGEA supports the Australian Government's commitment to update the National Digital Economy Strategy and encourages it to address the issue of support for the Australian interactive games development industry within this broader and more comprehensive strategy. This strategy should also reinforce the importance of broadband infrastructure, which is critical for the digital economy, particularly for regional and remote Australian consumers and businesses.⁵⁷

Within the updated National Digital Economy Strategy there is also a role for the interactive games development industry to more broadly support the five growth industry sectors identified by the Australian Government: namely, food and agri-business; mining equipment, technology and services; oil, gas and energy resources; medical technologies and pharmaceuticals; and advanced manufacturing sectors. Underlying digital literacy and software in interactive games development could arguably become 'enabling technologies and services' supporting those key sectors of the economy.

B. Attracting video game developers to Australia

How Australia can attract video game companies to set up development operations in Australia and employ local staff?

I. *Setting up development operations in Australia*

Attracting overseas interactive games companies to Australia to set up their development operations and employ local staff will require a holistic digital economy strategy. IGEA's key recommendations set out above in relation to Australia's regulatory and taxation frameworks will play a key role in that regard.

In addition, IGEA appreciates that access to a highly skilled talent pool is a key consideration for the international games development industry. As stated recently by the Entertainment Software Association of Canada in their submission entitled "Levelling Up: Winning Strategies to Support Canada's Dynamic Video Game Industry" in March 2014:⁵⁸

Access to capital and investment incentives alone are inadequate to support an industry in the absence of a talented and highly skilled workforce. Without talent, games development studios are unable to remain on the cutting edge regardless of how cost effective they may be.

The same applies in the Australian context. Therefore, it is important that the Australian Government ensure that Australian educational institutions are producing graduates with the necessary skills for the digital media industry broadly and the interactive games development industry specifically, both from a technical and creative perspective. Once those graduates complete

⁵⁶ Australian Law Reform Commission, *Content Regulation and Convergence Media*, Report 118 available at <http://www.alrc.gov.au/publications/classification-content-regulation-and-convergent-media-alrc-report-118> (accessed 25 August 2015).

⁵⁷ Bogle, A, "Pro gamers are being held back by Australia's dismal Internet", *Mashable*, 18 August 2015 at http://mashable.com/2015/08/18/australia-pro-gaming-internet/?utm_cid=hp-hh-pri (accessed 18 August 2015).

⁵⁸ ESAC Submission, page 5.

their studies, there must also be retention of that home-grown talent in a robust Australian interactive games industry.

II. *Develop and retain cutting edge talent*

“One of the problems we do face in Australia is the brain drain... an awful lot of the talented programmers or artists do end up moving overseas” – Nic Watt, Nnooo.⁵⁹

If Australia is to maintain a successful digital economy it must develop and retain a talented and highly-skilled workforce with the necessary technical capabilities plus creative talent. There are already a number of Australian educational and training institutions that provide talent to the interactive games development industry including private colleges such as SAE and the Academy of Interactive Entertainment, as well as a number of traditional universities. These skills can be leveraged across not just interactive games, but also games-based technologies used increasingly across a number of traditional industries.

However, the Australian games development industry now employs less than 1,000 industry professionals. This is a reduction of approximately two-thirds since 2012 and sits at a level commensurate with its small neighbour, New Zealand who currently employs 568 full-time employees.⁶⁰ Therefore it is not surprising that a number of the interactive game developers interviewed suggested that there is presently an over-supply of graduates in interactive game development in Australia, resulting in:

- Fierce competition for getting jobs after graduation, with many graduates being forced to work as lowly-paid interns
- An exodus of talent to other countries, particularly to the United States and Canada where it is far easier to secure employment.⁶¹ Indeed, this sits in great contrast to the Canadian interactive games industry’s concerns which are focused on the current shortage of available talent and its ability to source talent outside Canada.⁶²

Interactive games development studios locally also noted that while many of the Australian graduates have excellent technical skills there is often a lack of soft and business skills essential for working in a small Australian studio. Therefore, there is a need for educational courses to focus on the needs of small interactive games development studios in requiring employees to be multi-skilled, particularly given the small size of the studios and then need to apply themselves in various areas e.g. across development, design, marketing, sales and distribution.

In contrast to the potential over-supply of graduates in interactive games development in Australia, there is also now a severe shortage of highly skilled professionals. As Screen Australia noted previously, the closure of games development studios in Australia in the late 2000s resulted in the talent pool of highly skilled and experienced human capital leaving Australia.⁶³ One developer interviewed stated that in contrast to many North American and European markets there are less opportunities in Australia to get the benefits of mentoring from industry professionals, often critical to the success of a project.

⁵⁹ At <https://www.youtube.com/watch?v=iwoZ03AY7Hw> (accessed 3 August 2015).

⁶⁰ New Zealand Games Developers Association, “Jobs in NZ Games Industry Grow in FY2015”, Press Release, 21 August 2015 at <http://nzgda.com/news/survey2015/> (accessed 21 August 2015).

⁶¹ David Stark of KMM Games’ Brisbane Studio estimated that 90 percent of games developers in Australia move overseas when a studio closes: Screen Australia, *Playing for Keeps: Enhancing Sustainability in Australia’s interactive games industry*, 2011, quoted at page 22, at http://www.screenaustralia.gov.au/about_us/pub_gamesreport.aspx (accessed 27 July 2015).

⁶² ESAC Submission, page 6.

⁶³ Screen Australia Report, page 22.

Therefore, the extension of the Producer Offset as described above, together with other recommended regulatory and taxation measures provide a key opportunity to strengthen the interactive games development industry in Australia, helping also the retention and attraction of key talent. These talented individuals are likely to not only be beneficial to the interactive games development industry, but more broadly to the Australia's digital economy where their skills can be leveraged. For example, in digital agencies which work with a number of clients to maximise a range of interactive digital assets. Furthermore, interactive games studios such as BigWorld Technology are already engaged in the development of software technologies that could potentially have a variety of applications.⁶⁴

Interactive games development skills are also being used increasingly in more "traditional" sectors such as mining (to develop simulation tools used for training in heavy machinery), defence, health and recruitment. Indeed, 24 percent of Australians have used interactive games for training purposes. Revelian, an Australian-based talent company in Australia has recently built an immersive, psychometric assessment using game-based technologies.⁶⁵ Companies actively using game-based technologies for human resources include KPMG, Marriott, IKEA and Telstra.

C. Export Opportunities

How export opportunities from Australia's local video game industry can be maximised

Interactive games by definition have strong export potential. Given that the Australian market for interactive games represents only 2 percent of the global market, most, if not all, local interactive games development studios are focused on export-orientated games such as those distributed through online digital and mobile distribution models. Interactive games can also be distinguished from other forms of content such as film and music, which naturally largely focus on the Australian market and local distribution channels. Games in contrast are an intrinsically global medium that are almost always marketed and distributed globally with borderless appeal. Accordingly, Australian interactive games developers should naturally focus on growing export markets, which includes the highly lucrative Asian markets.

Therefore in addition to creating appropriate regulatory and taxation frameworks and developing and retaining talent in the manners discussed above, to create an export orientated interactive games development industry in Australia, support could be enhanced through:

- Travel costs associated with attending key interactive games conferences around the world such as the Games Development Conference (GDC), the Electronic Entertainment Expo (E3) or Gamescom, which operate as critical market places to market projects and garner investment and support
- Commercial skills and knowledge training focused on the practical elements of doing business in the digital global economy.

Export Market Development grants through Austrade which aim to assist small and medium exporters to seek out and develop export markets by partially reimbursing their expenditure on export promotion (such as travel and samples) could also be better targeted towards digital businesses.

⁶⁴ BigWorld Technology is a leader in middleware technology which is software used as an engine. It licences it worldwide, particularly for application in Massively Multi-player Online Games (MMOGs).

⁶⁵ IGEA, DA16 - *Serious Games and their application in the workforce*, at <https://www.youtube.com/watch?v=s8P6jDHbwY> (accessed 17 August 2015).

6. Conclusion

“If the games industry in Australia could get the same Producer Offset benefits that the film industry does, then it would be a real help to a lot of start-up companies. Most of what we do is research and development so there would be a huge benefit in bringing us in line with other creative industries” – Leigh Harris, Flat Earth Games.⁶⁶

In conclusion, IGEA is an industry association representing the business and public policy interests of Australian and New Zealand companies in the interactive games industry. While the interactive games industry is the fastest growing entertainment industry globally, due to a lack of support nationally against other challenges, the Australian interactive games development industry is not well-placed to harness this opportunity for the benefit of Australia’s broader digital economy.

IGEA supports a strong ecosystem for the interactive games industry in Australia and therefore urges the Senate’s ECRC to consider the urgent need to:

1. Extend the Producer Offset, administered by Screen Australia, to interactive games development
2. Establish self-sustaining funding for interactive games development
3. Support innovation clusters, including those regionally based
4. Develop and retain cutting-edge games developer talent in Australia through broader support for the industry
5. Create targeted support for digital economy focused export initiatives
6. Commit to the updated classification regime
7. Update the Australian Government’s National Digital Economy Strategy

We appreciate the opportunity to provide a submission on the important matter of support for the interactive games development industry and look forward to the opportunity to discuss this in more detail at the Senate’s ECRC’s Public Hearings for the TOR.

⁶⁶ At <https://www.youtube.com/watch?v=iwoZ03AY7Hw> (accessed 3 August 2015).

APPENDIX A – AUSTRALIAN MARKET DATA

The IGEA's commissioned research from NPD Group Australia showed that in 2014:⁶⁷

- Growth was driven by console hardware, which had increased by 47 percent. New consoles, the PS4 and Xbox One, had the best sales within the first 12 months of launch of any console hardware
- Software sales were \$614.5 million in 2014, down 5.3 percent from the previous year, however PS4, Xbox One, Wii U and 3DS had experienced growth in software
- Two new franchises, Watch Dogs and Destiny entered the Top 10 games titles sold in 2014
- The PS3 and Xbox 360 continued to contribute a significant amount to the overall software sales
- Originally a digital only game, Minecraft increased in value by 114 percent in 2014
- Action was the number one genre in terms of the volume of sales in Australia
- 61 percent of all games sold (based on volume) received an unrestricted Classification

Further industry key highlights by independent research firm Telsyte evidenced:⁶⁸

- The Australian mobile gaming market, incorporating smartphones & tablets exceeded \$700M in 2014, growing by 56 percent from 2013
- The majority of mobile games revenues was generated through in-app purchases
- 20 percent of new games sales in 2014 were digital downloads
- The fastest growing segment is the online, in-game purchase market driven by adventure games, which have extra levels, missions' campaigns and map packs

⁶⁷ Research based on The NPD Group Australia, Time period December 31 2012 – Dec 29 2013, December 30 2013 – Dec 28 2014 cited at IGEA, "Australian game sales surge in 2014", *Media Release*, 4 March 2015, at <http://www.igea.net/2015/03/australian-game-sales-surge-2014/> (accessed 3 August 2015).

⁶⁸ Telsyte, *IGEA Digital Market Monitor*, 2014 cited *ibid*.



TOTAL INDUSTRY VALUE

UP 20%
**\$2.462
BILLION**

Traditional
retail — NPD

UP 7%
**\$1.214
BILLION***

Digital sales
— Telsyte

UP 39%
**\$1.248
BILLION****

UP 32%
**\$440
MILLION***

Hardware

UP 56%
**\$703
MILLION****

Mobile

Software

DOWN 5%
**\$615
MILLION***

Digital download

UP 25%
**\$455
MILLION****

UP 5%
**\$152
MILLION***

Accessories

UP 69%***
**\$90
MILLION****

PlayStation.
Plus

XBOX LIVE



Subscriptions

Gamecards

UP 16%
**\$7
MILLION***

IGEA commissioned research from:

*The NPD Group Australia.

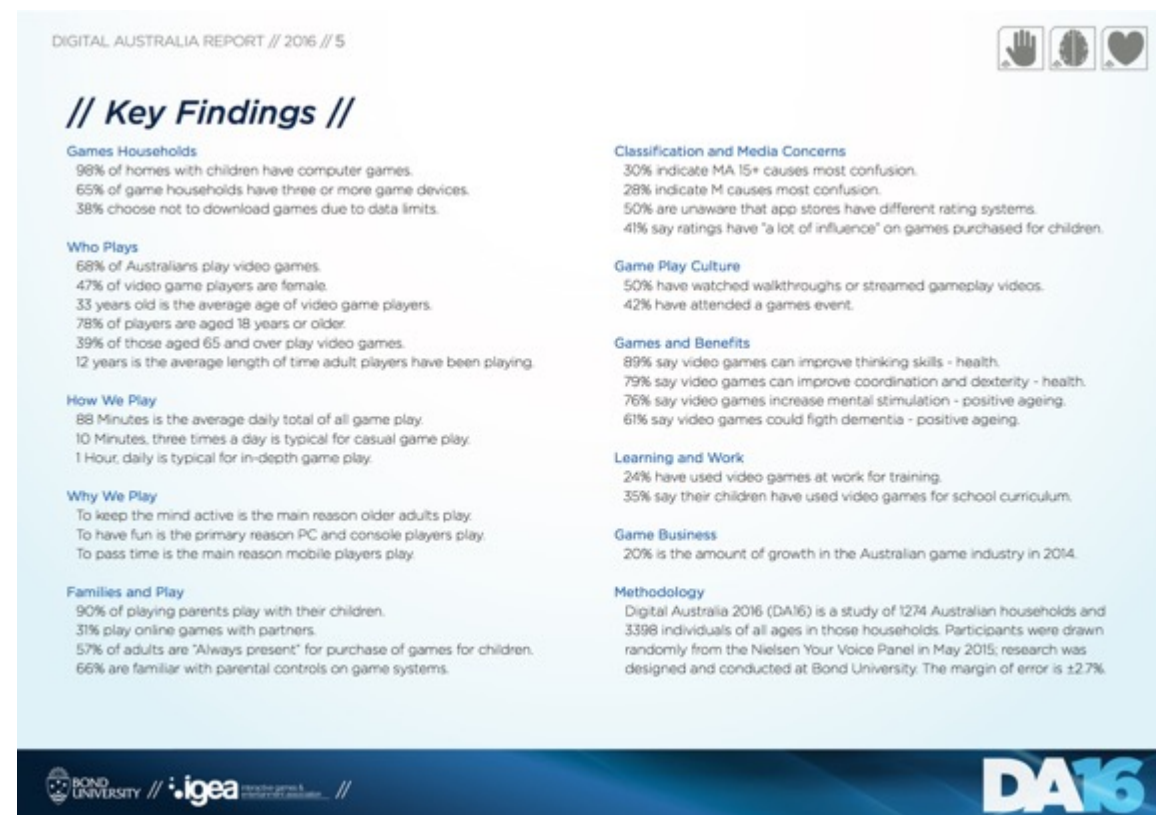
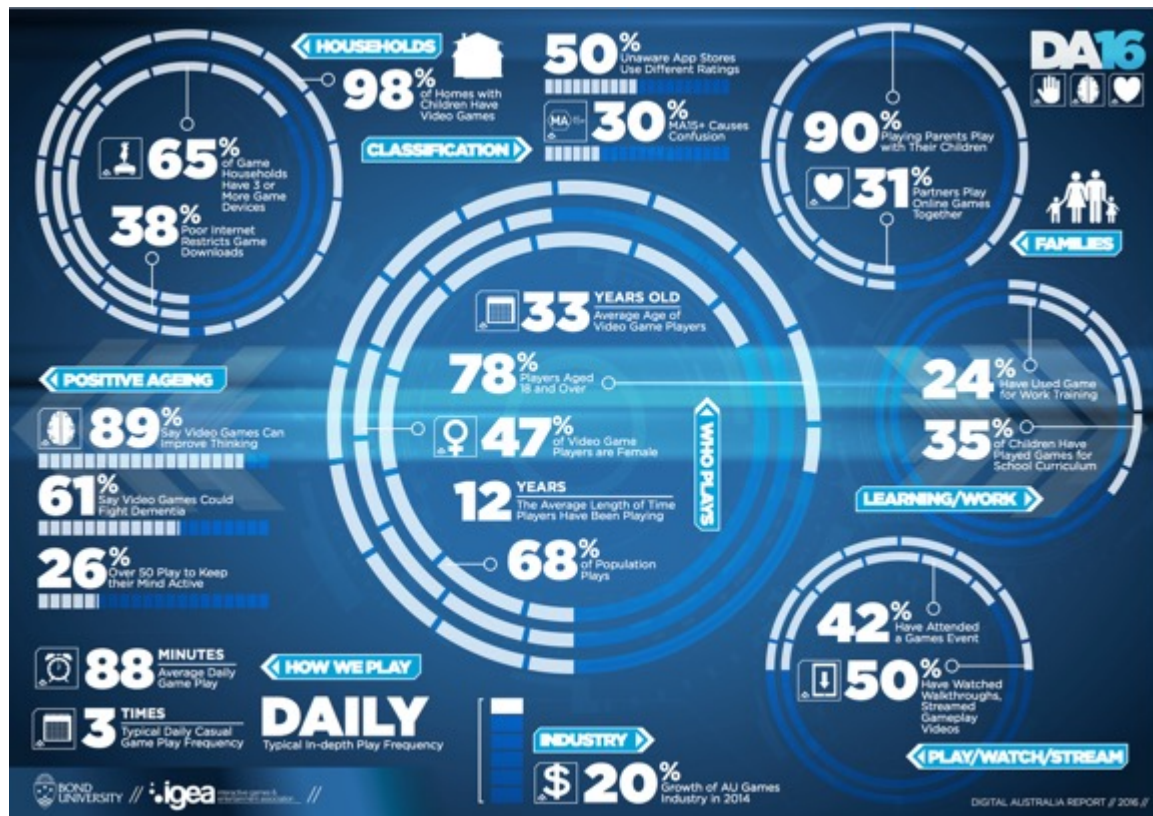
Time period December 31 2012 – Dec 29 2013, December 30 2013 – Dec 28 2014.

**Telsyte – IGEA Digital Market Monitor, Q1-Q4 2014

***Revised 2013 estimate



Key Findings: Digital Australia 2016



Link: <http://www.igea.net/wp-content/uploads/2015/07/DA16-Infographic-and-Key-Findings-For-Release.pdf>

APPENDIX B – CASE STUDIES

Game based technology helps people with MS

Multiple Sclerosis (**MS**) is a debilitating disease that affects the central nervous system. It causes progressive deterioration in motor skills and sensory perception, and can also cause psychological problems. There is no known cure, but there are many treatments to alleviate the effects of MS. Now researchers at Neuroscience Research Australia (NeuRA) have found a novel and effective way to help people with MS – through the use of technology based on video games.

As revealed by IGEA's 2016 Digital Australia Report, video game technology is increasingly being used for other purposes beyond entertainment - 89 per cent say playing games improve thinking skills, 76 per cent agree video games increase mental stimulation, 79 per cent find video games help improve coordination and dexterity and 61 per cent state video games help fight dementia.

Dr Phu Hoang and his colleagues at NeuRA have developed a games-based stepping exercise designed for people with MS, to help improve their balance and their mental skills. It is an excellent example of how games-based technologies have real world applications, and can improve people's lives.

In a pilot study published in the MS Journal and funded by MS Research Australia, Dr Hoang and his team have shown how the stepping exercise directly targets the key balance issues that contribute to falls risk for people with MS.

"The system uses an electronic mat connected to a computer console and a video monitor," explains Dr Hoang. "It takes people with MS through a simple stepping game designed to help them improve their balance. It's a rhythm video game that asks them to step as accurately as possible, in terms of direction and timing, on different positions on the mat."

A second part of the game requires them to respond as quickly as possible to step instructions. The mat measures participants' reaction time, stepping speed and accuracy. The exercise was performed for 30 minutes at least twice per week over 12 weeks, with the level of difficulty increased as the participants gained confidence in their ability.

The study found that people with MS who did the stepping game showed significantly faster and more accurate steps, as well as improvements in real-world measures of balance, posture and walking speed.

The results also revealed faster reaction time and improved upper limb dexterity, which suggests that the stepping exercise also improves the thinking skills needed to reduce the risk of falling.

"The work is exciting because it shows it is possible to modify key physical and cognitive risk factors for falls in people with MS, using games based technology," says Dr Hoang.

"Studies have shown that at least half of people with MS experience frequent falls, which often require medical care. Fear of falling can cause people with MS to restrict their daily activities, with significant impacts on their quality of life."

The initial trial of the stepping mat with 50 people with MS has proved so successful that it is now being extended to a multi-centre program across Australia, with as many as 500 people. See the stepping mat in action here: <https://www.youtube.com/watch?v=JVH-O1IF7T0>.

Interview with Salih Mujcic : Revelian

IGEA's research report, [DA16](#) showed that 24 percent of people have used a game in the work place for various reasons. IGEA spoke with Mr Salih Mujcic, a Product Manager with [Revelian](#), one of the people interviewed for [DA16](#) who provided a great example of how games are being used in the work force, specifically in the recruitment process and the success they have found in using games based technologies.

Tell us about your company....

Revelian is an innovation-driven Australian company at the forefront of providing unique psychometric tests, surveys, games and communications analytics. We deliver insights to inform people decisions that help organisations recruit the right people, develop employees, as well as enhance and align team culture and performance. Leading companies including some of the nation's biggest employers use Revelian to support their hiring and people management decisions with objective insights.

Why did you choose a game to help you in the recruitment process?

First Reason: Games are powerful contexts within which assessments can be conducted

Games naturally provide environments or situations where individuals must work through a set of challenges, trouble shoot, or problem solve to obtain a solution.

Most importantly games create an environment where people can determine their own direction, express their own autonomy and go about solving challenges in many different ways. This allows us to capture and measure these different expressions of self and infer how they may apply these approaches in other contexts.

Games and big data go hand in hand. The biggest difference between a regular assessment and a game-based assessment is that we are capturing stream-based data. Just as an idea, a single play through our game assessment can generate over 10,000 data points per player. We process thousands of events that often occur milliseconds apart or at times simultaneously.

To help make sense of all of the data, we've had to build a custom analytics engine. Just like Richard Bartle was able to classify gamers distinct play style in MMOs (Massive Multiplayer Online games), we're also seeing clear differences in which actions players are taking in game. More interestingly, we're also able to measure traits such as mental agility, cognitive speed, attention, spatial aptitude and numerical processing ability. There's likely much more, but we're still making our way through the data and exposing different feature sets.

Second Reason: Candidates prefer game based assessments to traditional psychometric testing.

An overwhelming number of candidates, 7 out of 10 to be exact, prefer game-based assessments over traditional online psychometric tests. They're perceived as more fun, less stressful, interactive and immersive. The typical type of comments we see in online forums tend to look like this:

Wow. First time I've done the Theme Park Hero exercise. Easily the most fun I've had yet on an exercise less stress-inducing than other ones I have done.

Candidates also form positive perceptions of the organisation when the game-based assessment was implemented. They often relate these perceptions to a culture of innovation and pushing the envelope. From research in the assessment space we know that this is hugely important in shaping candidate perceptions and motivations to continue the relationship with that organisation.

Who developed the game, Theme Park Hero?

This project was worked on by game developers and designers, software engineers, psychometricians, instructional designers, and test engineers. The friction between the vision of the different disciplines and the strict psychometric requirements, as well as ethical considerations (e.g. impact of in game feedback on player psychology), was at times palpable. Channelling these differences into a positive energy was the real trick.

Typically we would target specific psychological characteristics and areas, and design certain games which we think will elicit these qualities and then analyse the data.

Our development approach and choice of games was guided by the Cattell, Carrol and Horn model of intelligence that provides a taxonomy of measurement for intelligence. We were equally as inspired by traditional psychometric assessments and short sharp mini games that tap into these qualities in a fun and engaging way. Finding the balance between the highly procedural and scientific approach used by psychometricians and creative flurry and chaos of game designers was very difficult, but ultimately the most rewarding experience and contributed to the end product.

A big challenge was that games often retain information for the moment (e.g. multipliers, bonuses, levels, scores) whereas we needed to measure every micro decision, every hesitation, inactivity, point of focus and retain that data for analysis. Our engineers had to develop custom analytics engines and data streaming funnels to help shepherd and make sense of this data. The psychologists and psychometricians would then develop behavioural models or data models that we could then use to make meaningful inferences about the players.

Describe your experience of using a game in the recruitment process with regards to both your company and potential candidates

Employers are very welcoming of innovation and products where they can see genuine value. Game based assessments are legitimately revolutionising how we assess applicants. Not only do they provide a great experience but also provide a lot of insightful data. In a consumer driven world this is critical. Theme Park Hero is one of the first steps in what we expect to be the norm in terms of how we pinpoint quality talent. We surveyed over 700 applicants that completed the assessments as part of their recruitment process and found that:

- Close to 70 percent of candidates feel that game based tests are better than traditional assessments
- Over 75 percent of candidates feel that it's an appropriate way for employers to test candidates for their abilities
- Close to 7 out of 10 candidates wished other employers would use game based assessments as well
- Qualitative feedback suggests that candidates most valued the experience as it was fun, engaging and not as stressful as traditional testing.

- Candidates also found it challenging and full of variety. Candidates were suitably impressed by the technology that was used to test in this new way.

It's a very different experience to traditional tests due to the design, multimedia and interactive nature of game based testing. Candidates feel like they have more control over their testing experience and feel completely immersed in the activities they are completing.

Are you able to share the results of using games in the recruitment process?

At this point, well over 10,000 candidates have experienced Theme Park Hero in just a few months. Some of Australia's biggest brands as well as multinational corporations are adopting our assessment to find their talent. Currently, Theme Park Hero is mainly being used in graduate recruitment processes where organisations are competing for talent from a shared pool.

As mentioned above the candidate feedback has been phenomenal and people who see our game based tests for the first time are positive and amazed about this new methodology.

Are you aware of any other companies that use games similarly?

We're one of a few companies in the world that has harnessed games for these purposes. Some of the others include ConnectCubed, Knack, Talentology and Arctic Shores.

Revelian has a decade long pedigree in people analytics and identifying talent through psychometrics so for us our main focus is providing employers with meaningful information that helps them find best fit candidates. Other companies mentioned above are more focused on the consumer and reverse marketing that data to employers.

What are your plans for the future with regard to serious games?

Our main plans are expanding our games library. In the next 12 months we have a plan to release a number of games that not only measure characteristics like mental ability, problem solving, memory and other cognitive faculties, but softer skills and personality traits that are also important.

We also plan to redefine the perception of game based assessments as at times are perceived as a not serious alternative to traditional assessments. We believe that assessments using game based technology are the new standard in engaging and immersive assessment.

Salih's discussion of Revelian's use of Serious Games is available [here](#).

APPENDIX C – CASE STUDY ON TAX OFFSETS IN FLORIDA

Digital Media Incentives in Florida: Development, Growth, and Success

In 1998, Electronic Arts (EA) bought Tiburon Entertainment, a typical garage-based start-up located in Maitland, Florida, to develop a football interactive game and quickly grew the studio to 100 employees, a fortuitous decision that would ultimately lead to the rise of a digital media ecosystem in Florida.

Soon after EA's purchase of Tiburon and the concomitant nationwide rise of the digital media industry, state competition for the industry's high-skill, high-wage jobs began in earnest. Louisiana, which adopted the nation's first film and television incentive program, was a prime example, expanding its incentive program in 2005 to include development of interactive games.

Recognising they had begun to lose ground to other states, Florida lawmakers added interactive digital media to the existing film and entertainment incentive program in 2007. The incentive program, which began with funding of \$US2.4 million in 2004, had grown to \$US25 million in the year that digital media was added. EA was one of the companies that took advantage of this incentive to support growth.

EA's presence in Florida began to have an effect. EA partnered with the University of Central Florida (UCF) to create a video game development school, the Florida Interactive Entertainment Academy. EA also worked with Full Sail University and the Ringling School of Design. This helped develop the regional workforce by cultivating graduates with science, technology, engineering, and mathematics skills, valuable to not just EA, but to the entertainment, modelling, simulation, and defence industries. This activity was part of creating a regional digital ecosystem in Media and Technology, which brings together leadership and mentoring, technology, capital, government and policy, and a support network.

As EA began to grow in Florida, other states began to compete for the industry's valuable jobs. In response, in 2010, the Florida Legislature updated the program from a cash incentive program to a tax credit program to keep up with the competition from other states. The program was originally allocated \$US242 million in multiyear tax credits, representing a greater than 300 percent increase in incentives relative to the \$US73 million provided under the original incentive program.

A Closer Look: The Growth of EA Tiburon During the Rise of Incentives

What began as a three person start-up grew to 100 with the acquisition by EA and the building of the team to create the Madden Football video game franchise. The EA Tiburon studio, with the success of the incentive and the cultivation of the regional talent pool, then grew to 600 employees. Because the program was so successful, the State of Florida extended the program for another year, and EA responded, bringing new titles to the studio. By 2012, the studio had grown to approximately 825 Floridians working in its studio, with an average salary greater than the \$US 90,000 industry average in Florida, and far above the average wage of approximately \$US 41,000.

The updated tax credit program operates as follows:

- No earlier than 180 days prior to the project start date, a production company may submit an application to Office of Film and Entertainment (**OFE**) for certification of tax credits based upon the project's estimated qualified expenditures
- Qualified expenditures includes production expenditures for goods purchased or leased from, or services provided by, a Florida vendor or supplier, as well as salary or wages paid to Florida residents
- OFE must review the application within 15 days after receipt and, if the application contains all of the required information, recommend the applicant to the Department of Revenue for the maximum tax credit award. The Department of Revenue is required to, within 5 days, either reject the recommendation or certify the applicant for the tax credit award
- Tax credits for projects are allocated on a first-come, first-serve basis, according to three queues: the general production queue, the commercial and music video queue, and the independent and emerging media production queue. Digital media, film and television projects are funded in the general production queue, which receives 94 percent of all incentive funding. A project must have at least \$US 625,000 in qualified expenditures to be eligible for funding in the general production queue
- The baseline tax credit incentive for projects in the general production queue is calculated at 20 percent of qualified expenditures, up to \$US8 million. Additional tax credit bonuses are provided for employing digital media students or graduates, incurring at least 50 percent of the project's qualified expenditures to a digital media production facility, and producing "family-friendly" projects. A project may not receive tax credits totalling more than 30 percent of its actual qualified expenditures
- After the project is completed and all expenditures are made, the production company must have an independent certified public accountant conduct a compliance audit to verify the amount of actual qualified expenditures. This final, verified amount represents the basis from which to calculate the final tax credit award.
- If the production company cannot benefit from the tax credit due to a lack of tax obligation, the production company may sell them to an entity that does have an obligation, or transfer the credit back to the state for 90 percent of the tax credit's face value

In 2011 and 2012, the Florida Legislature allocated an additional \$US 12 million and \$US 42 million, respectively, to the tax credit program, increasing the total tax credits allocated under the program to \$US 296 million.

The updated tax credit program resulted in a resurgence of film and television industries in Florida, and growth in digital media. But EA did more than just create internal jobs. The ripple effect from EA's presence and growth in the region is palpable. Here are a few points to consider:

- A former EA Tiburon leader went on to lead UCF's Florida Interactive Entertainment Academy to become one of the most highly acclaimed video game development schools in the nation
- Former EA leaders went on to create companies such as Shiver Entertainment, 360Ed, and Row Sham Bow, Inc., and opened a new Zynga studio in Florida. Other companies began to form around this digital media cluster
- In 2013, EA partnered with UCF to create the EA Sports Innovation Lab
- Today, in addition to EA Tiburon, Central Florida is home to Indienomicon, an organization dedicated to bring awareness to the "excitement, culture and incredible talent of the indie [video game] developers of Central Florida." The organization features dozens of independent interactive game companies

- The region also hosts a now-annual event called “Indie Galactic Space Jam,” which brings together scientists and others from the space travel industry (such as NASA scientists) and game developers to rapidly prototype video games with a space travel theme
- EA leaders have also co-created a technology co-working space, called CANVS, that serves the region and which has become home to 75 technology start-ups and other companies. CANVS hosts dozens of technology industry events each month and has recently become the headquarters of a newly formed accelerator fund to support the growth of technology companies
- EA Tiburon is also helping to sponsor and, through its participation, launch OrlandoIX, a first-of-its-kind event celebrating the interactive digital media industry in the region. The inaugural event is expected to draw thousands of visitors, and will feature a gaming arena with game playing tournaments, game building challenges and a game expo with a gaming speaker series.