Submission to Australian Human Rights Commission and World Economic Forum White Paper on Artificial Intelligence

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Interactive Games & Entertainment Association

Overview

The Interactive Games & Entertainment Association (IGEA) is the peak industry association representing the business and public policy interests of Australian and New Zealand companies in the interactive games industry. Our members publish, market, develop and distribute interactive games and entertainment content and related hardware.

IGEA is pleased to provide a submission to the White Paper on Artificial Intelligence: governance and leadership. This submission seeks to cover three issues.

- First, it provides an overview of the history and relationship between video games and artificial intelligence (AI).
- It also urges caution against any broad-based regulation of artificial intelligence that may have unintended consequences for the video games industry.
- Finally, it highlights the fact that Australian video game developers are uniquely poised to help the broader Australian economy leverage AI technology, but notes that this opportunity is currently limited by the federal government's lack of support for the industry.

Video games and artificial intelligence

AI has been a component of video games since the very beginning of the medium. Some of the earliest video games that achieved global popularity, such as *Space Invaders* and *Pacman*, incorporated elements of AI. AI remains an essential element of many modern video games and while its use is becoming increasingly innovative and sophisticated, it remains focused on the primary objective of improving the experience of game players.

The use of AI in video games includes:

- AI-controlled 'opponents' to give the player in a single-player game a competitive challenge. In many games, a player is able to select different difficulty settings to best suit their skill level. Examples of games with this use of AI include sporting games like *FIFA 19* and action games like *Overwatch*.
- AI-controlled 'allies' to enable the player to team up or cooperate with the AI against another human player and/or AI-controlled player. This is available in many strategy games such as *StarCraft II*.
- AI is vital to enabling efficient pathfinding in games to determine how to get a non-human controlled character from one point in an environment to another (eg. on map-based games like *Civilization VI*).

AI may also be essential for determining how a non-human controlled character interacts with a human player, which helps to progress and enhance the narrative of the game.

- The use of AI in video games may incorporate elements of machine learning to help improve the player experience. For example, studying the behavior of human players may help game developers to design AI-controlled characters that more closely resemble human behaviour, giving players a more authentic experience even when they are not playing with friends or family. AI and machine learning are also being used by some video game companies to detect unfair player behaviour such as cheating, therefore enhancing gameplay for everyone else.

- Development studios are also starting to use machine learning for game creation. For example, many 'AAA' video games rely on large open worlds to provide exciting spaces for players to explore. However, creating such large levels and worlds is resource-intensive when crafted completely manually. As a result, developers are starting to leverage large maps of real-world terrain to help AI learn how to create realistic and interesting terrain automatically, giving artists and level designers a head start on creating even bigger and better worlds.

- Finally, AI can play a particularly important role in 'serious games', which involves the use of games and game technologies in diverse sectors including education, health care, defence, business, research and community. By way of example, both the European Union-funded Gaming for Peace (GAP) initiative and the United States Institute for Peace are currently exploring the use of games to give peacekeepers a controlled environment to practice conflict resolution. AI can provide a way to simulate dynamic real-world scenarios for this kind of training.

According to a survey that IGEA conducted in 2018, two thirds of Australians play games and 97 per cent of Australian households with children have computer games. The reason that Australians play games are numerous and include having fun, de-stressing and also to challenge themselves. 84 per cent of survey participants believed that video games can improve thinking skills, while 90 per cent believed that video games can support positive aging by increasing mental stimulation. The enjoyment that players get from playing video games comes from the immersive and interactive environment that they provide and well-developed AI is central to this experience.

The full details of IGEA's survey is available at https://igea.net/2017/07/digital-australia-2018-da18.

Regulation of artificial intelligence

Despite the historic links between video games and AI technology, many of the specific issues discussed in the White Paper are of limited relevance to the industry. Given the focus of the White Paper on human rights, the areas of risk identified in the paper mainly revolve around the applications of AI that may potentially cause harm to the community, such as the risk of "real life" impacts caused by bias and discrimination in AI systems. These risks and concerns are largely not applicable or relevant to the video games industry, which uses AI in a specific and limited capacity to provide enjoyment and challenge to players within the confines of games.

IGEA is not in a position to respond to some of the general questions that are posed in the consultation paper on whether government regulation should be considered for some applications of AI, or whether the establishment of a Responsible Innovation Organisation could be beneficial. However, we do believe that if any regulation is to be implemented in future, it should be evidence-based, very carefully scoped and limited to what is practically necessary.

While it may seem obvious that the use of AI in video games is not something that raises human rights concerns, it is still a point worth highlighting to underpin our view that AI in video games is not something that necessitates or would benefit in any way from the kinds of regulatory oversight discussed in the White Paper.

If any future regulation of AI does become seriously considered, we would not expect that AI in video games would fall within its scope. However, care should be taken so that any such regulation does not inadvertently impact video games that contain or use AI technology. In a similar way, IGEA would not expect or support the consideration of any regulatory cost-sharing arrangements that would impose a burden on the video games industry.

Australian video games industry as a driver for AI innovation

Despite the limited relevance to the White Paper of the use of AI *within* video games, we believe that the Australian video games development industry can contribute to the broader, positive impacts of AI to the Australian economy and society as a driver of digital innovation and productivity.

We support the commentary in the White Paper that the continued development and use of AI could help to drive growth, improve productivity

and tackle a wide range of social and economic challenges. Unfortunately, as the White Paper also points out, there is a need to build a more dynamic innovation ecosystem in Australia and the fact that Australia lags behind key partners and G20 nations in investment in AI is an unfortunate symptom of this gap.

Given the rich history between video games and AI technology, a strong Australian game development industry can help to kick start AI innovation across the broader economy. As just one example occurring globally, the video game company Ubisoft is currently collaborating with Google and The British Museum through the [Hieroglyphics Initiative](#) to identify whether machine learning can be used to translate the hieroglyphics of ancient Egypt. Locally, some Australian game developers are already at the forefront of virtual, augmented and mixed reality and the "real world" application of these technologies. This opportunity for leading innovation could potentially be replicated in the field of AI technology.

Unfortunately, the Australian game development industry is unsupported at the federal level and has yet to fulfil its full potential. Despite the global video games market reaching almost $200 billion last year,[1] Australian game developers generated just $118.5 million in revenue and only employed 928 full-time employees.[2] Unlike other parts of the Australian screen industry like the film and TV sectors, game developers do not currently receive any specific industry support from the Australian Government. If this support existed, such as through refundable investments and tax incentives, it would push the industry's growth and help to develop the next generation of high-skilled and technology-focussed businesses and workers across Australia.

The Australian video game companies that have been able to succeed despite this lack of support prove how unique, innovative and talented the industry can be. This is particularly seen in the context of serious games, a segment of the games industry that is rapidly growing and one where Australia has demonstrated vision. Some Australian game developers like Mighty Kingdom, SMG Studio and Chaos Theory Games work very closely with the business and community sectors to develop diverse, innovative and often unexpected uses for games. The unique opportunities presented by video game technology also led to the acquisition of the Australian game studio Well Placed Cactus by Deloitte Australia, which turned it into the company's specialist digital creative consultancy.

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[1] https://www.gamesindustry.biz/articles/2018-12-18-global-games-market-value-rose-to-usd134-9bn-in-2018
[2] https://igea.net/2018/01/australian-game-developers-march-generating-118-5m-spitelimited-recognition-support

In December 2018, IGEA released a policy paper '*Building a Thriving Interactive Games Development Industry in Australia*' that outlines why a game industry is so vital to Australia and sets out the concrete steps for how the Australian Government can better support it. We have urged the Australian Government to consider the recommendations contained in the paper.