

VanEck[®]



Levelling up

An investor's perspective on the **disruptive impact** and potential
for **continued growth** of esports and video gaming

The rise of video games and esports since the second half of last century has been gathering pace. Video games have evolved, they are now on our phones. We can play anywhere and anytime. Esports, a part of the video gaming industry, too has grown with events being broadcast to audiences that rival the global numbers watching the soccer world cup.

Esports has been identified as a disruptive innovation with the potential to significantly impact traditional spectator sports.

For investors, an understanding of the dynamics that will likely continue to drive growth within the video gaming industry and esports can help them position their portfolios so they can capture the performance of an industry that has the potential to continue to go to the next level for several years to come.

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Introduction

Esports, a part of the video gaming industry, is currently a hot topic among investors.

Mind-boggling statistics fill magazine and online articles¹. These impressive numbers are supported by commercial research too. Deloitte reports that the esports industry attracted over US\$7 billion in investment over 2017, 2018 and 2019.²

There is no doubt growth in esports continues globally and it has spread to Australian shores. In May 2018, Qudos Bank Arena in Sydney, the largest indoor arena in Australia, was a sell-out for the Intel Extreme Masters. Our universities too are supporting esports. In August 2020 Monash University added esports to its Elite Student Performer Scheme (ESPS), to support the next generation of gamers to compete on the world stage. The University of Adelaide's Sia Furler Institute held a summit in 2020 with the aim to teach keen gamers how to turn a passion for video games into a professional career and Murdoch University secured funding to help build an esports stadium in Perth that will be linked with Singapore and East Asia. Elsewhere, QUT, RMIT and University of Melbourne, among others, all offer subjects examining esports.

As an investment theme too, esports is now entering the mainstream. In an Australian first, VanEck launched its Video Gaming and eSports ETF (ASX code: ESPO) in September 2020.

Video gaming and esports recent rise to prominence has been augmented by the COVID-19 lockdowns. Australian leagues such as the NRL and AFL were forced to cancel part of their seasons. Avid sports fans, self-isolating and craving their usual sports fix, turned to watching and playing video games. But the trends for professional sports leagues were not confined to COVID-19. Falling viewership and declining match spectatorship have been trends for some time.

In the pages of Harvard Business Review, esports had been identified as a disruptive technology that is changing the sports viewing market.

Using the framework Clayton Christensen outlined in that same publication many years earlier, we highlight the rise of esports, underscoring the penetration and strides the industry has already made as well as highlighting opportunities for continued growth.

At the same time video gaming continues to grow as technology allows for new revenue streams.

This paper further explores this growth trajectory of video gaming and esports, its revenue streams and business models, and the three interconnected potential growth accelerants shaping its future.

Video gaming and esports should be considered by investors as a potential opportunity. The sector is also a diversification opportunity away from the FAANG giants, Facebook, Amazon, Apple, Netflix and Google owner, Alphabet which dominate many portfolios.

In an Australian first, VanEck launched its Video Gaming and eSports ETF, ASX code: ESPO.

History of video games and esports

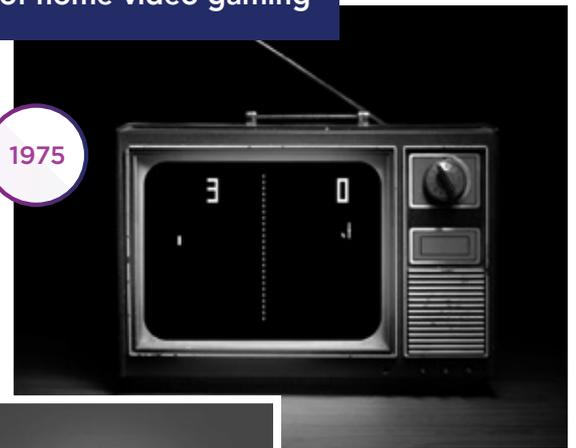
1970s

The birth of home video gaming

Some of the earliest video games were competitive. Pong, one of the earliest video games was released in 1972, and it involved two players hitting a pixelated ball back and forth.

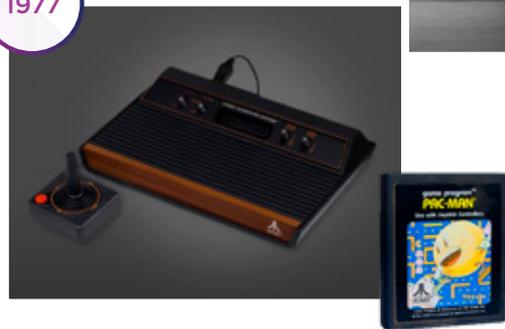
Atari released a home version of Pong in 1975. This was followed by the release of Atari's Video Computer System in 1977.

This featured gear sticks, interchangeable cartridges and options for difficulty levels. All of a sudden computer games were in people homes.

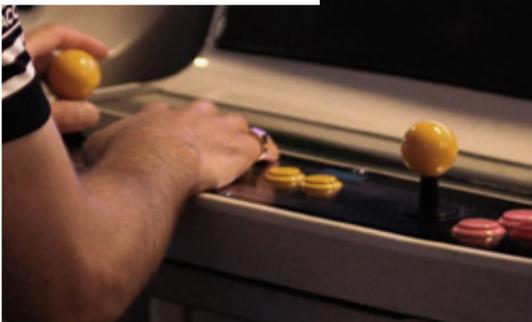


1975

1977



1978



It was also during the 1970s that arcade games moved beyond the flippers in pinball machines to buttons, joysticks and steering wheels.

Taito's Space Invaders was released in 1978. Its launch caused a shortage of 100-yen coins, and within a year over 60,000 Space Invader machines were installed in American arcades.

Researchers trace the roots of the esports industry to informal Space Invader competitions held at video arcades in the 1970s.³

In 1980 Atari organised an official Space Invaders tournament. It attracted over 10,000 entrants.

1980s



Hand held games became popular at the start of the 1980s.



1985

1989

In 1981 Donkey Kong threw barrels at Jumpman – Jumpman would evolve into his better known moniker, Mario. It was not uncommon during this time that tournaments would be held as people tried to break record high scores. Billy Mitchell's 874,300 Donkey Kong score was a world record for 18 years.⁴

1985 ushered in the release of Nintendo's Entertainment System. This revived the home console industry which at the time had stagnated in the face of hand held games. Nintendo followed its Entertainment System with Game Boy in 1989.

Advances in network technology allowed users to play together on their PCs using a local area network (LAN). All of a sudden competitors didn't need to be using the same machines.

1990s

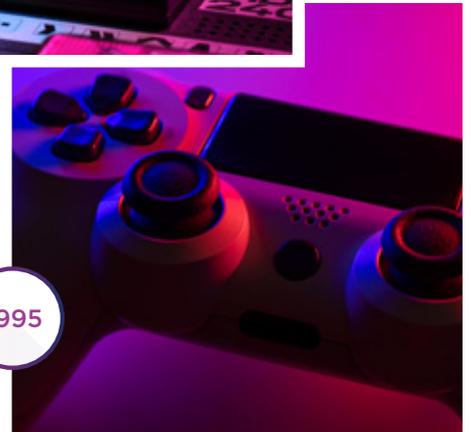
In the 1990s Microsoft started to bundle video games into its Windows package.



Sonic the Hedgehog helped drive sales of the new Sega Mega Drive, and all the while, gaming tournaments would continue to spring up here and there. By now they were based on the fighting games of the time such as Street Fighter and Mortal Kombat, both of which had emerged in the early 1990s.

Sony with its PlayStation entered the home video game market, at the same times PC games continued to encourage team and interactive play. Sony's Everquest lead hundreds of thousands of users to join guilds, fight monsters, and level up in the multiplayer online world of Norrath.

1995



2000s

It was in the early 2000s that esports, as a spectator sport, first took off.

The Sims, released in 2000, became the best-selling computer game at the time and the most popular game with female players.

It was in the early 2000s that esports, as a spectator sport first took off in South Korea. Cable networks broadcast StarCraft tournaments, by 2004 over 100,000 fans were drawn to a stadium event.⁵

In 2006, Nintendo's launch of Wii appealed to millions of people who had never before liked video games.

Innovative, motion sensing remotes got players out of the couch and interacting with characters and events on screen. Doctors were known to recommend it to patients to encourage movement.



2006



Internet and mobile technological advances led to the next boom in video gaming.

Mobile phones became hand held gaming devices. Video games like Angry Birds, Words With Friends and Candy Crush made some people 'gamers' for the first time.

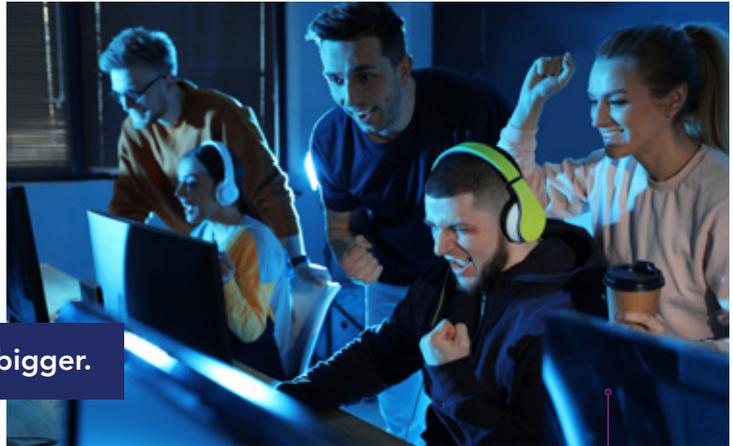
The introduction of online services such as Xbox Live allowed console gamers to play cooperatively or against one another in games like first-person shooter Halo 2, paving the way for other popular online titles including Call of Duty.

ADSL was superseded by high speed broadband internet allowing more video content and new online services which in turn allowed more gamers to play each other online and stay more connected than ever before.



2000s

From 2010 onwards, things got bigger.



Multiplayer Online Battle Arena (MOBA) games, which pit two teams against each other while blending strategy and role playing elements together, became a hit.

One of the most popular MOBA games is League of Legends. Over 13,000 people packed out LA's Staples Centre in 2013 to watch the world championship final of League of Legends.



By 2015, one year after being acquired by Amazon, online video streaming service Twitch fueled the growth of esports further.

On this platform thirty six million viewers watched the League of Legends World Championship that year.

In 2016 millions of people hunted for virtual creatures like Pikachu and Horsea in the real world with Niantic's free-to-play hit Pokémon Go.

In 2019 millions of people tuned in to watch a virtual asteroid destroy the map of Epic Games' online battle royale game Fortnite. The game, which is free to play, had earned a staggering US\$2.4 billion in 2018. Fortnite respawned two days later with a new map, Fortnite: Chapter 2.



2019

The 2019 Fortnite World Cup was one of the biggest esports tournaments ever.

The 23,000 plus seats at Arthur Ashe Stadium in Queens, which has a higher capacity than Madison Square Garden in Manhattan was sold out through the weekend for the Fortnite World Cup. 40 million players had participated in qualifiers hoping to make the World Cup final which was also viewed by over 2.3 million people across YouTube and Twitch. The winner, Kyle "Bugha" Giersdorf, a 16-year-old from Pennsylvania took home US\$3 million in prizemoney. By comparison, when Tiger Woods memorably won the US Masters that same year he took home US\$2 million.

Today

Today, esports and video gaming are bigger than ever.

Video games have become a part of everyday life. There are now more than 3 billion gamers worldwide.⁶

In esports there are many teams, events and organisers, with impressive prize pools and strong online communities and streaming platforms such as Twitch, which allow users to view esports matches and watch their favourite gamers play live over the internet. More and more people are watching esports.



Esports as a disruptive innovation

Harvard Business School identified esports as an example of disruptive technology that is changing the market.⁷

The theory of disruptive innovation was first promoted by Harvard professor Clayton Christensen. Christensen catapulted to super-star status in tech savvy Silicon Valley in the 1990s.

Applying Christensen's framework to the trajectory of esports highlights the potential for these new markets.

According to Christensen, disruptive innovation should either, "originate in a low-end market and move upstream to higher value markets" or create a "new market foothold", meaning it creates a new market where none existed.⁸

Reviewing the history of video gaming and esports, it is littered with examples of these. Think about the first informal competitions held at arcades. There was no formal seating, people were crammed in and it was hard to

get a good view. Yet these were well attended. And they've grown today to be held in purpose built stadiums. The very trajectory of a disruptive innovation.

"In the case of new-market footholds, disrupters create a market where none existed"⁹. You could argue Nintendo Wii created a market for older people to utilise video game technology to exercise. No one expected games on phones when video games first came about, yet it is now expected to pass annual revenues of US\$100 billion in 2023.¹⁰

Advances in communications technology have created new markets for esports creating new market footholds, such as the growth of MOBA and associated events.

Harvard's Christensen further states: "Disruptive innovations don't catch on with mainstream customers until quality catches up to their standards."¹¹ Thinking about the history of video gaming and esports earlier, its growth has come about as telecommunications and wireless technology has improved. Smartphone based game play has been improved by 4G and 5G technology. As the technology has improved so too has adoption. This is a characteristic of disruptive innovation. When Apple launched its iPhone 12, a key promotional element of the launch event focused on MOBA games and how 5G and chip technology now made gaming seamless¹².



Disruption is a process whereby a company is able to successfully challenge established incumbent businesses.

It's important to remember, disruption is a process. The first video game companies and arcades struggled for many years to get their business models right. They found it hard, once they had made the sale, to continue to generate income from their customers.

Mobile and internet technology now allows for in-game purchases. Advertising has become a major revenue stream. Esports teams are sponsored. There are media rights now and tickets are sold to a growing audience. The process of disruption has taken decades.

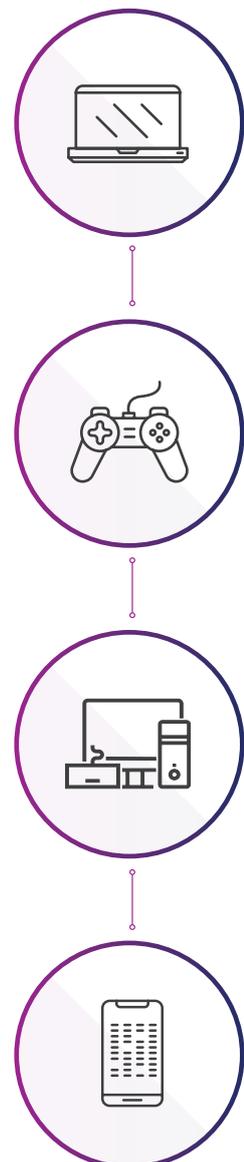
The rise of esports, as a spectator sport, has taken decades, and companies, like Amazon playing straight out of the Christensen playbook, are buying into its potential. Amazon purchased Twitch in 2014, and its average monthly viewership is now on par with several cable news networks. The rise of Twitch, a platform that allows users to livestream gameplay and engage with other players online, unlike the linear format of traditional sports broadcasting, creates a more engaging viewer experience.

Professional sports further embraced the disruptive innovation during the COVID-19 lockdown. Formula 1's F1 Esports Series is one such example. The series achieved 30 million views during the 2020 lockdown period of March to June. The series was created to allow fans to have a Formula 1 race weekend experience in the absence of real races. F1 drivers and other sportspeople and celebrities duked it out virtually on accurate depictions of real-life racetracks.

Video gaming and esports have created new markets over a period of many decades and the growth over the past few years is likely to continue as technology continues to improve the experience for users.

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Professional spectator sports too have responded to the disruption. Slowly at first. 'Madden' has become its own brand under the National Football League (NFL). Despite launching in 1988, Madden only received its official NFL licenses in 1994. Other professional leagues have similar licensing, but the NBA has been a first mover responding to the disruption as it has moved upmarket. In 2018, the NBA partnered with Take-Two Interactive to form the NBA 2K League, the first official esports league operated by a US professional sports organisation.



Disruptive innovation¹¹ explained

In *The Innovator's Dilemma*, Clayton Christensen introduced the world to three types of innovation:

1. Revolutionary – these are very rare.

They result in products that are so improved or new that they simply replace the previous product. For example, the horse and buggy was replaced by the car.

2. Sustainable – these are common.

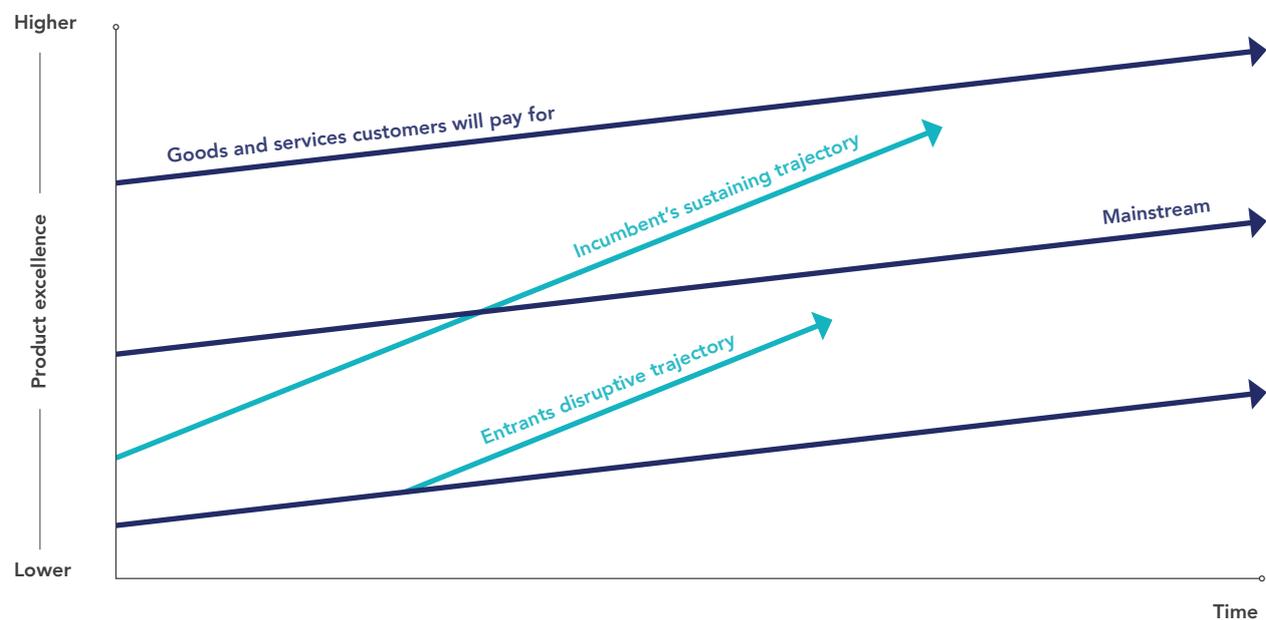
They are incremental improvements on existing products. For example, the fifth blade in a razor, the clearer TV picture, better mobile phone reception or lower costs.

3. Disruptive – these are also rare. They create new markets.

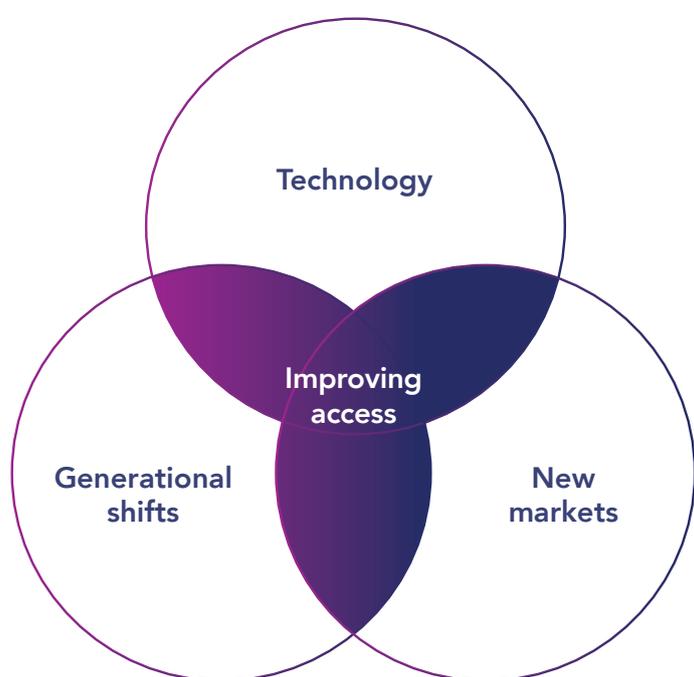
According to Christensen, disruption is a process whereby a company is able to successfully challenge established incumbent businesses.

Specifically, as incumbents focus on improving their products and services for their most demanding (and usually most profitable) customers, entrants that prove disruptive begin by successfully targeting overlooked segments by gaining a foothold by delivering more-suitable functionality, frequently at a lower price. Incumbents, chasing higher profitability in more demanding segments, tend not to respond vigorously initially. Entrants then move upmarket, delivering the performance that incumbents' mainstream customers require, while preserving the advantages that drove their early success. When mainstream customers start adopting the entrants' offerings in volume, disruption has occurred.

Chart 1: The disruptive innovation model



Technology: harder, faster, better, stronger



Technology is one of the three factors driving growth in video gaming and esports.

There are two other key accelerants shaping its future, these are new markets, such as emerging markets, and the generational trends. These are all interconnected.

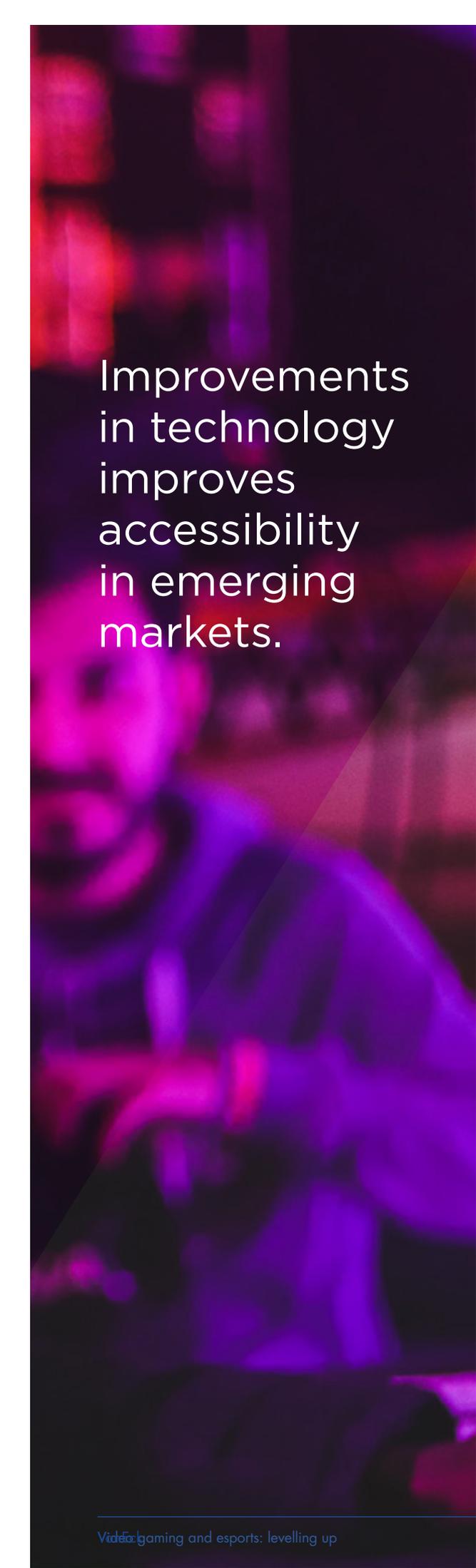
The growth of video gaming and esports has been facilitated by improvements in technology. Technology will continue to evolve and this will drive the growth of video gaming and esports further.

We are fast approaching being able to develop graphics that simulate the real world. Graphics have already been 'virtually' added to our world (think Pokemon Go). Virtual reality will create experiences that can only be achieved digitally. We will be able to go to new, realistic worlds and have experiences that at the moment are the realm of science fiction.

Technology also creates cost efficiencies, because once games and worlds are created they can be used over and over again.

So far technology has driven growth in esports and video games by improving accessibility. First games consoles were able to be in people's homes more and this breakthrough led to more people became 'gamers'. Then the first LANs and now high speed internet and 5G allow us to compete, share and watch games with more and more people. The ability to play many people at any time from any location your phone can get a signal has propelled video gaming and esports. But there are other improvements in technology that will further improve the access.

We expect other entertainment forms to respond to improvements in technology the way professional sports such as F1 and the NBA have. Technology will allow for the merging of entertainment experiences. Movies and television, rather than just being a one-way engagement (a TV program streams at you), will adapt to become a two-way engagement. Then crowd engagement, watching with a group of people. It is not out of the realm of possibility that watching the watchers of these technologies will become popular. The groundbreaking series Black Mirror episode Bandersnatch utilised this technology.



Improvements in technology improves accessibility in emerging markets.

Improvements in accessibility opens up new markets and as technology get better, efficiencies improve and devices become cheaper. Emerging markets are an example of this. And unlike in developed markets the boom in video gaming and esports has the potential to be much faster in emerging markets. This is due to improvements in technology.

China is a good example of the growth potential there is in other emerging markets where video game use is currently low. China is now a 'developed' market in esports and video gaming. But that has not always been the case.

China's economy has been the fastest growing economy over the past 20 years. It is among many Asian countries (particularly Singapore, Indonesia, India and Korea) that have experienced exponential growth in digital knowledge, production and consumption.¹³ China has evolved to become one of the world's largest investors and adopters of digital technologies, and is home to one-third of the world's unicorns¹⁴. Digital heavyweights in China such as Tencent, NetEase and Bilibili are notable players in the video gaming and esports industry.

Unlike the 'western' experience outlined earlier that most of us experienced, gamers in China had a different journey. It didn't start in arcades in the 1970s. Mario was the first character Chinese gamers could access¹⁵ South Korea's StarCraft built up a following in China, but once the internet was introduced to China in 2009 it started to replicate the Korean experience¹⁶. And soon took over.

The advent of the mobile phone saw exponential growth and many were, for the first time experiencing video gaming.

China is now the most active esports country in the world, with more events and tournaments than any other country and the rise of China as an epicenter in esports has coincided with its improvements in technology.¹⁷

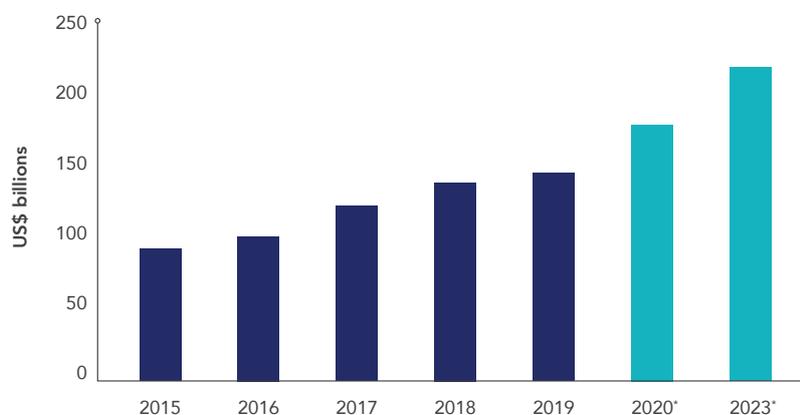
Improvements in technology improves accessibility in emerging markets, and this will continue beyond China. But like China, the growth in emerging markets will be more rapid than what developed markets experienced. Gamers in emerging markets will not reminisce about the Atari 2600 or Commodore 64. Their adoption patterns will be more like those in Generation Z, possibly the first generation of life long gamers. They often experience their first game on a smartphone, perhaps watch people playing video games on YouTube and thus video gaming and esports become intertwined with their life. That is not to disregard the potential of other markets, Generation Xers and Millennials in developed markets have grown into adults and they have continued to spend time and money on playing video games. According to the Entertainment Software Association, 65% of American adults play video games.

Tapping into growth

The video game industry is tapping into global consumer demand for online, interactive entertainment, leading to record-setting revenues and an unprecedented user base. In 2020, the total video game industry is projected to reach US\$174.9 billion in revenues¹⁸, which makes it a bigger industry than both cybersecurity and robotics¹⁹. By 2023, video gaming is forecast to reach US\$218 billion, representing a 9.4% compound annual growth rate between 2018 and 2023²⁰. The video game industry is enjoying a long-term structural growth, supported by broader trends including demographic shifts and cord-cutting.

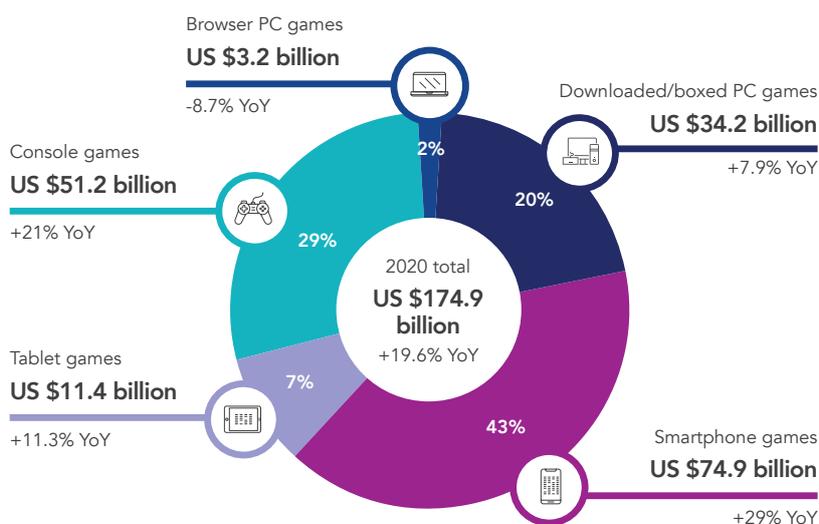
In 2020, the total video game industry is projected to reach US\$174.9 billion in revenues

Chart 2: Global Games revenues



Source: 2020 Global Games Market Report, Newzoo. *Projected.

Chart 3: Revenue comes from a variety of sources

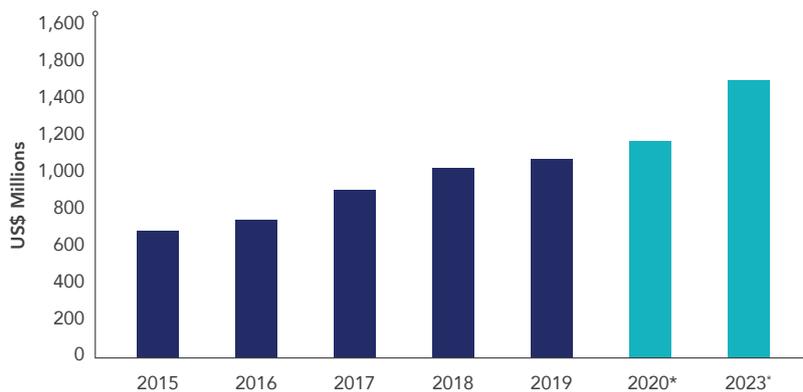


Source: 2020 Global Games Market Report, Newzoo. 2020 numbers are projected.

Esports, a part of the video gaming industry is experiencing rapid growth too. Its revenue has tripled over the last three years. Esports is growing across audiences, participants, sponsorships, advertising, and team franchises and as a result, revenue is coming from a variety of sources.

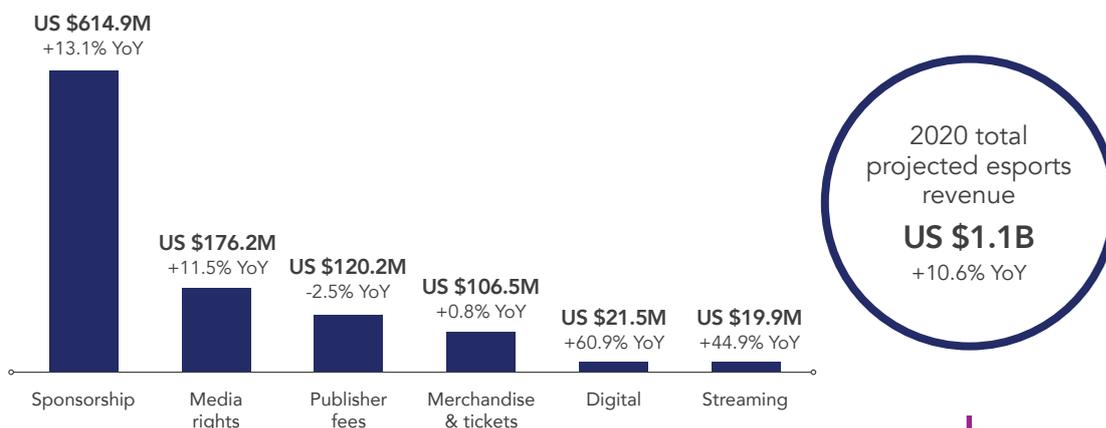
Another indicator of the potential growth of esports is observed through the total revenue per fan, it shows how well a sport is 'monetized'. Since 2014, the global average revenue per person of esports enthusiasts has increased by 175%.

Chart 4: Esports revenue growth



Source: Newzoo. Global Esports Market Report 2017, 2018, 2019, 2020. Past performance is not indicative of future results; current data may differ from data quoted. *Projected.

Chart 5: 2020 Global esports market forecast revenues per stream



Source: 2020 Global Esports Market Report, April 2020 update, Newzoo.

Since 2014, the global average revenue per person of esports enthusiasts has increased by 175%.

We are witnessing a cultural paradigm shift as esports athletes and competitions are considered by many to be on par with traditional sporting events. The International Olympics Committee has even announced that esports should be recognised as a sporting activity in the sixth session of its summit in October 2017²¹.

Elsewhere, we are witnessing major investments by video game developers, big technology companies, professional sports

teams, local cities, and municipalities and advertisers attracted to audience bases that are young, have money, and appear to be willing to spend over the long term.

Despite these compelling trends and fundamentals, most investors are under exposed to this sector, esports and video games makes up only 4.82% of the NASDAQ 100 and only 3.71% of MSCI's information technology sector.

Chart 6: Exposure to video gaming and esports as at 30 November 2020

Sector	NASDAQ 100	MSCI World Technology
Communication services	20.12	–
Consumer discretionary	18.56	–
Consumer staples	4.7	–
Health care	6.30	–
Industrials	1.81	–
Information technology	47.84	100
Utilities		–

Exposure to video gaming and esports

4.82%

3.71%

Video game and esport exposure in the NASDAQ 100

- Activision blizzard 0.52%
- Advanced micro devices 0.79%
- Electronic arts 0.31%
- Netease Inc 0.29%
- NVIDIA Corp 2.75%
- Take-two interactive software 0.16%

Video game and esport exposure in the MSCI World Technology index

- Advanced micro devices 0.94%
- NVIDIA Corp 2.75%

Source: FactSet, as at 30 September 2020. Weightings represent weighting in respective comparable indices.

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VanEck Vectors Video Gaming and eSports ETF (ASX: ESPO)

ESPO is an Australian first. It offers investors the unique opportunity to invest in the largest video gaming and esports focused companies in the world. ESPO tracks the MVIS® Global Video Gaming and eSports Index™ which includes companies which generate at least 50% of their revenues from video gaming and/or esports.



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