



©iStockphoto.com/DigitalStorm

European video games

Frictionless borders

August 2019

Published by Edison Investment Research

European video games

Frictionless borders

The re-emergence of a listed small- and mid-cap games sector across Europe owes much to the disruption from digital distribution, GaaS and the implementation of more capital light, recurring monetisation models. Over the next few years, increasing investment in next-generation consoles, streaming, subscription, eSports and VR/AR will lead to a proliferation of routes to market for IP, and these drivers look set to support industry growth for the next 10 years. The dynamic nature of the market will continue to create disruption, rewarding agile development but challenging legacy business models. This offers opportunities (particularly to IP owners) as well as risks, but we believe that the small- and mid-cap European sector now offers exposure to well-run, innovative businesses that will benefit from the continuing growth of the digital model.

A global industry offering continuing growth

The impressive scale and growth rate of the global games industry is now well recognised. Newzoo estimates the market size at \$152bn – larger than film (c \$140bn) or broadcast (c \$50bn) industries – with a CAGR of 9% forecast to 2022. The market landscape is also considerably more fragmented than in media, with digital disruption, GaaS and more capital light, recurring revenue models all factors. This is reflected in the shape of the European games sector, which constitutes 30+ listed companies with a median market cap of US\$200–300m.

Comparing ‘apples with apples’

In this report, we have disregarded national boundaries to compare business models across territories and highlight valuation discrepancies. It is notable that, despite games companies addressing a global audience, the majority of shareholders in the small- and mid-cap games companies remain domestic. As the market becomes more discerning, we believe that European investors will increasingly differentiate between business models, irrespective of jurisdiction, to invest in preferred models at attractive relative valuations.

Not all investment types are available in every territory – mobile games companies are largely clustered in Scandinavia, the largest broadly based AAA global publisher is in France, with an ecosystem around it, and the predominant games services company is in the UK. Poland offers exposure to one of the most anticipated titles of 2020 (Cyberpunk 2077) while, despite being a major games market, the German public investment opportunity remains limited. We focused on the UK market in our report in February 2019 ([Heterogeneous not homogeneous](#)).

Valuations rising – selectivity required

After the broad rebasing of games company share prices seen in H218 (driven by a reassessment of growth prospects for the global technology sector), shares in the European games sector have largely recovered, with price increases of 30–50% since the start of 2019. As a result, valuations of European games companies remain elevated by historic standards, although down from the peaks seen in H118, trading at a c 30–35x historical P/E multiple in aggregate. At these levels, value exists, but investors need to be selective in choosing their exposure.

Technology



5 August 2019

Companies mentioned in this report

11bit Studios (11B.WA)
Bigben Interactive (BGBN.PA)
CD Projekt (CDR.WA)
CI Games (CIG.WA)
Codemasters (CDM.LN)
Digital Bros (DIB.IM)
Focus Home (ALFOC.PA)
Frontier Developments (FDEV.LN)
G5 Entertainment (G5EN.ST)
GAME Digital* (GMD.LN)
Games Workshop* (GAW.LN)
Gfinity (GFIN.LN)
Immotion Group (IMMO.LN)
Keywords Studios* (KWS.LN)
MAG Interactive (MAGI.ST)
Modern Times Group (MTGb.ST)
Paradox Interactive (PDXI.ST)
PlayWay (PLWP.WA)
Rovio Entertainment (ROVIO.HE)
Starbreeze Studios (STZeb.ST)
Stillfront Group (SFRG.ST)
Sumo Group (SUMO.LN)
Team17 (TM17.LN)
Ten Square Games (TENP.WA)
THQ Nordic (THQNb.ST)
Ubisoft Entertainment (UBIP.PA)

*Edison client

Analysts

Richard Williamson	+44 (020) 3077 5700
Dan Ridsdale	+44 (020) 3077 5715

tech@edisongroup.com

Executive summary

This report sets out a framework for investors to make more effective cross-border comparisons of games companies in the UK and Europe.

Most investors will consider only the limited universe of stocks listed locally. This suggests there should be scope for active investors, with industry expertise and insight, to look for companies with preferred business models at an attractive valuation on a pan-European basis.

Rather than analysing companies on a country-by-country basis, we have attempted to compare companies with similar characteristics on a cross-border basis, to make more informed valuation comparisons. We see IP ownership and digital business models as key investment considerations, but we also highlight other characteristics. A more detailed review of the business mix and valuations can be found in Exhibits 13 and 14 later in the note.

Exhibit 1: Grouping by key investment characteristics

Global IP	Scale & liquidity	Digital/ GaaS	Regional footprint	Niche market leader	Mobile exposure	eSports/ VR	Growth	Asian exposure	Value	High risk, high reward
Rovio	Ubisoft	Frontier	Bigben	Codemasters	MAG Interactive	Gfinity	CD Projekt	Codemasters	Bigben	PlayWay
CD Projekt	CD Projekt	Paradox	Digital Bros	Keywords	Stillfront	Immotion	Gfinity	Frontier	Focus Home	CI Games
Ubisoft	THQ Nordic	PlayWay	Focus Home	MTG	G5 Ent	MTG	Digital Bros	Team17	Digital Bros	G5 Ent
Codemasters	Games Workshop	Team17		Sumo	Rovio	Codemasters	Paradox	PlayWay	Rovio	Gfinity
THQ Nordic	Paradox	11bit		Games Workshop	MTG		Frontier	Keywords	Codemasters	MTG
	Keywords	Stillfront		Paradox			Ten Square	G5 Ent		
				Frontier				Stillfront		

Source: Edison Investment Research

What sorts of company do we prefer?

- Companies with world-class IP.
- Digital leaders.
- Community-centric companies.
- Companies with a clear sector focus.
- Companies with a broad exposure to the fast growth of mobile.
- Niche market leaders with a high-quality client base.
- Committed, disciplined acquirers.

Which companies are at risk?

- Companies with legacy business models.
- Companies with a 'hit-driven' model, exposed to a single IP or narrow portfolio.
- Mid-market publishers/distributors.
- Work for hire (WFH) developers forced to take on low-quality, marginal projects.
- Companies with inadequate financial resources.

Strong growth set to continue for a decade?

As is widely recognised, global video games revenues are forecast to grow at c 9% CAGR (2018–22), building to a total market size of over \$196bn by 2022 (Newzoo). However, with the investment and drivers of growth in place today, although specific subsectors may perform better or worse over the long term, it is hard to see why the global games industry as a whole would not keep growing at a similar rate for the next decade or more.

Opportunity in fragmentation

As a fragmented market, with niche market leaders and few specialist investors, valuation disparities are more likely in Europe than in the US, which is dominated by a few global publishers that are closely analysed. Relatively small market capitalisations, restricted free float, limited liquidity, language barriers, differing approaches to transparency and corporate governance are all valid concerns, but nevertheless the sector offers an attractive proposition in the search for alpha.

The games industry has made huge strides over the last 10 years and valuations for a number of companies are undoubtedly challenging. However, the opening up of the European market and the proliferation of investment opportunities across Europe suggests that this remains a good time to invest to get exposure to sustainable growth, and to exciting developing and future themes.

IP strongly preferred

Given the levels of external investment we have seen over the last 12 months in eg streaming, subscription models, digital distribution, VR, and eSports as the tech majors position themselves with a channel to market, we believe IP owners are set to benefit disproportionately. To justify their investment, there will be an increasing need for the tech majors to differentiate their platform, with IP ownership or exclusivity (potentially by way of M&A) an obvious differentiator.

On this basis, we anticipate continued strong share price growth and potentially further consolidation of leading IP owners and content developers. We therefore believe that IP ownership should be valued at a premium and IP owners represent the most attractive companies in which to invest in the games industry for the foreseeable future.

Eight drivers of growth

At a high level, we summarise the key drivers of evolution and growth in games as follows:

Driver 1: Digitalisation continues to transform business models: digitalisation has reduced the financial resources and capital intensity required to launch new titles, supporting business model diversity, more flexibility and better profitability for developers and IP owners.

Driver 2: Prevalence of Games-as-a-Service (GaaS): GaaS involves managing a game's community post-launch and has helped transform the economics of game creation, reducing development risk, increasing player stickiness and longevity, and improving profitability.

Driver 3: Streaming leads to subscription? Significant investment is going into developing effective video game streaming models and the associated technologies by both publishers and technology companies, leading to a broadening of the player base and increasing subscriptions.

Driver 4: eSports to drive growth: eSports is another evolution of the games industry that will have a significant impact on future growth, providing a further way to build a community around successful titles, streamed live to a global audience over Twitch and YouTube.

Driver 5: Mobile capturing the casual audience: mobile offers the potential for huge scale and penetration, but remains a casual medium where tastes, fads and fashions move quickly. Sustainable revenues are hard to achieve, but new business models may change this.

Driver 6: Asian/Chinese Eldorado: the size of the Chinese market is hard to ignore – China is forecast to constitute \$36.5bn of the \$72.2bn Asian market in 2019, together representing c 47% of global games revenues (Newzoo).

Driver 7: IP/content is king: with the prospect of a proliferation of channels to market in the coming years (eg streaming, digital distribution, next-generation consoles), this should represent a great opportunity for IP owners to maximise returns from their IP and expertise.

Driver 8: Tax reliefs level the playing field: tax reliefs for the games and broader creative industries are now either in place or under consideration across much of Europe. These are critical to levelling the playing field and sustaining a creative industry in high-cost jurisdictions.

Sector overview

Following our initial report on the UK video games sector ([Heterogeneous not homogeneous](#)) and recognising that the UK represents only a single facet of the European games market, this report sets out a framework for investors to make more effective cross-border comparisons of games companies across the UK and Europe.

Exhibit 2: The European game developer landscape



Source: Reddit

However, rather than analysing companies on a country-by-country basis, we have attempted to look through country of listing to compare companies with similar characteristics, to make more informed valuation comparisons where possible and help investors identify less obvious investment opportunities offering potential value.

A global industry offering strong growth

Market analyst, Newzoo, estimates that more than 2.2 billion gamers will generate c \$152bn of revenues in 2019, with western markets representing c 49% of global revenues and 45% of total revenues on mobile devices. Overall revenues are forecast to grow at c 9% (2018–22), building to a total market size of over \$196bn by 2022. Mobile offers double-digit revenue CAGR, while PC and console offer single-digit growth (Newzoo).

To put this into context, the games market is already more than three times the value of global box office movie receipts – estimated at \$42bn (source: Statista) and seven times the size of the recorded music industry at \$19bn (source: IFPI), but remains some way behind the Pay TV market, which ABI Research forecasts will reach \$295bn by 2022, making the likes of Netflix increasingly nervous of the challenge by games for users' screen time.

Investing in a fragmenting industry

H119 has seen a slew of announcements, both in terms of new technologies and investment, which look set to support the growth of the industry for the foreseeable future. These investments have included a number of new initiatives by the tech majors targeting the games market (eg Google's Stadia streaming service and Apple's Arcade subscription service for premium mobile games). In April, initial news around Sony's next-generation console emerged (launch anticipated Thanksgiving 2020) and in May, Sony and Microsoft announced a collaboration to develop future cloud solutions for streaming services. At E3 in June, Microsoft confirmed the launch date for its next-generation console, Project Scarlett, as Holiday 2020, as well as details of its streaming services (Project xCloud). The US publisher, Bethesda, announced software to improve streaming performance and reduce latency, and Ubisoft, another major games publisher, announced its own streaming platform.

The following quotes help underline that the games industry is at a nexus, where it operates at a global scale, but is fragmenting with multiple channels into diverse markets. In this scenario, once again, content is king:

- 'I would go as far as to say [gaming] is the single most important thing happening right now in our culture', Herman Narula, CEO, Improbable Worlds.
- 'What we are seeing with the evolution of this technology [Stadia] is gaming is getting more and more fragmented', Andy Kleinman, founder of Wonder.
- 'Just as the arrival of Netflix, Apple and Amazon has driven up the price of Hollywood's top talent, in the near-term games developers are likely to see a windfall as tech companies vie for content. But developers should remember that after buying up Hollywood's archives, Netflix turned itself into the studios' biggest competitor. Content makers love the idea of a "Netflix for games" and a new way of getting paid, I worry a lot of them are not realising the deal with the devil they are doing', Nicholas Lovell, Electric Square.

This fragmentation is likely to bring about a polarisation of winners and losers, with top-rated teams, potentially financed by money from outside the industry, able to spend increasing amounts on development of global titles, be that on PC, console or mobile – or increasingly, cross-platform.

Drivers of growth in the games industry

The games industry continues to enjoy strong secular growth, both in terms of revenues (Newzoo: 9% CAGR to 2022) and player numbers.

We have identified eight key drivers underpinning this growth, with the UK and European games companies benefiting from these trends to a greater or lesser extent depending on their business model:

Driver 1: Digitalisation continues to transform business models: Digitalisation has significantly reduced the financial resources and capital intensity required to launch new titles, as well as offering the opportunity to sell downloadable content (DLC) to sustain games and player communities post-launch – increasing the recurring revenue base and reducing the risk profile of game development. This change has supported greater business model diversity, more flexibility and better profitability, to the benefit of developers and IP owners. With the 70/30 revenue split between the platform holder and developer under attack from Epic (88/12) and other online

distribution platforms (90/10), there could be significant benefits to accrue to self-publishers from any erosion of the status quo.

Edison comment: Digitalisation will benefit the PC revenues of all self-publishers and, to the extent that Epic's stand has a knock-on impact for other platforms, all third-party developers/publishers (and players) are set to benefit.

Driver 2: Prevalence of Games-as-a-Service (GaaS): GaaS describes the ongoing relationship with a game's community post-launch, where the game developer manages the community and provides additional content or events (increasingly an outsourced service) to extend the game's lifetime and increase its LTV. This has helped transform the economies of game development, reducing development risk, increasing stickiness and longevity, and thereby improving profitability.

Edison comment: Every premium publisher and developer is increasing the community aspects of their titles and building games incorporating a GaaS mentality. In addition, service companies will benefit from the post-launch support required for GaaS, as many developers choose to outsource this live-games support.

Driver 3: Streaming leads to subscription? Streaming is where a game resides and is rendered in the cloud, and streamed live to a 'dumb' (or depowered) console, ultimately eroding the need for specialist games consoles.

Both publishers and technology companies are putting significant investment into developing effective video game streaming models and the associated technologies. The intended end-result is that the service provider holds a direct relationship with the consumer monetised by way of a subscription. However, internet infrastructure in many core jurisdictions needs to improve markedly for streaming to become mass-market; also, bandwidth, latency and lag are currently prohibitive for many genres and are likely to remain so for years to come.

Exhibit 3: Google Stadia video



Source: Google, YouTube

Exhibit 4: Google Stadia preview video



Source: Google, YouTube

Apple has announced its Arcade subscription model, Google has recently announced its Stadia streaming solution, Microsoft has announced xCloud, Sony and Microsoft are collaborating to develop future cloud solutions for streaming services, Bethesda has announced the Orion SDK and Ubisoft, Uplay Plus. This wave of investment sets the direction of travel for the industry over the next decade or more.

Edison comment: The large publishers and tech majors are set to fight over streaming to try to 'own the end-user'. However, players will only tolerate a small number of subscriptions. This focus on IP and exclusive content will benefit global IP owners of all sizes, able to afford (or those that already own) games catalogues with compelling IP and exclusive content.

Driver 4: eSports to drive growth: eSports is another evolution of the games industry that will have a significant impact on its future growth, but which today has relatively low visibility beyond its core audience. eSports are organised, multi-player video game competitions, with amateur as well as sponsored professional players, teams and leagues, watched – either streamed live or later

downloaded – by a global audience on Twitch and YouTube, as well as increasing numbers of specialist channels.

eSports provides another way to build a community around successful titles, extending the life of the game, growing its audience and providing ancillary revenue streams from advertising, sponsorship and merchandising. eSports brings experiential live events to the games industry and delivers youth engagement and relevance through the games industry to brands and sponsors.

Edison comment: Other than Twitch and YouTube, fighting for a share of the spoils in eSports are the games publishers, live events companies and sports rights management companies. The big questions are whether eSports will be an open ecosystem (managed by third-party organisations) or a closed network (dominated by the IP owners), and over what timeframe revenues will build. Undoubtedly, one of the major beneficiaries from eSports will be the owners of eSports titles, namely the major publishers. Other than these, and depending on whether an open or closed ecosystem develops, Gfinity and MTG offer focused European exposure alongside Super League Gaming in the US (although all have yet to achieve break-even), with Codemasters also likely to benefit through its relationship with F1 and the Motorsport Network.

Exhibit 5: The unsung hero of eSports video



Source: Gfinity, YouTube

Driver 5: Mobile capturing the casual audience: The fastest-growing segment of the games sector is still smartphones, where Newzoo forecasts global growth continuing at a CAGR of c 13% in 2018–22. Underlying this growth is the fact that mobile is the platform of choice for much of Asia.

Mobile offers the potential for huge scale and penetration, but remains a casual medium where tastes, fads and fashions move quickly. Sustainable revenues are hard to achieve, and monetisation is only becoming more difficult as premium titles struggle to be discovered in a plethora of free content. However, in Q119 Apple announced a subscription service offering premium mobile content, which may help underpin a more sustainable premium revenue model in this fast-moving market.

Edison comment: There are a range of Scandinavian mobile groups including Rovio (Angry Birds), MTG (InnoGames, Kongregate), MAG Interactive (Ruzzle, Quiz Duel, WordBrain, Word Domination), G5 Entertainment (free-to-play (FTP) hidden object games) and Stillfront (a debt-funded portfolio of FTP titles including BigFarm, Goodgame). In the UK, Sumo Digital is developing two titles for Apple Arcade (Spyder and Little Orpheus).

Exhibit 6: Introducing Apple Arcade



Source: Apple, YouTube

Exhibit 7: Apple Arcade preview video



Source: Apple, YouTube

Driver 6: Asian/Chinese Eldorado: Asian markets have evolved independently of western markets, with cultural differences helping to shape different styles of game, gameplay and business models. Japan, with two of the global console manufacturers (Sony and Nintendo), has greater crossover with western markets than China or Korea, the two other large games markets. However, the size of the Chinese market is hard to ignore – China is forecast to constitute \$36.5bn of the \$72.2bn Asian market in 2019, together c 47% of global games revenues (Newzoo).

Western studios are now focused more than ever on the opportunity offered by the Chinese audience, but games usually need to be localised to conform to domestic regulation and audience tastes. Consequently, many developers partner with one of the strong local players to optimise games for the Chinese market and manage distribution of a game that complies with local requirements for content and regulation.

Edison comment: Many titles sell in Asia and China, but in our view Codemasters (NetEase partnership) and Frontier (Tencent) offer interesting exposure to the Asian consumer. A number of Team17's titles also sell well in the region and in Sweden we would consider Rovio (Angry Birds), 11bit and Stillfront (c 20% of revenues from Asia) and G5 Entertainment (c 30% of revenues from Asia) as offering exposure to the region.

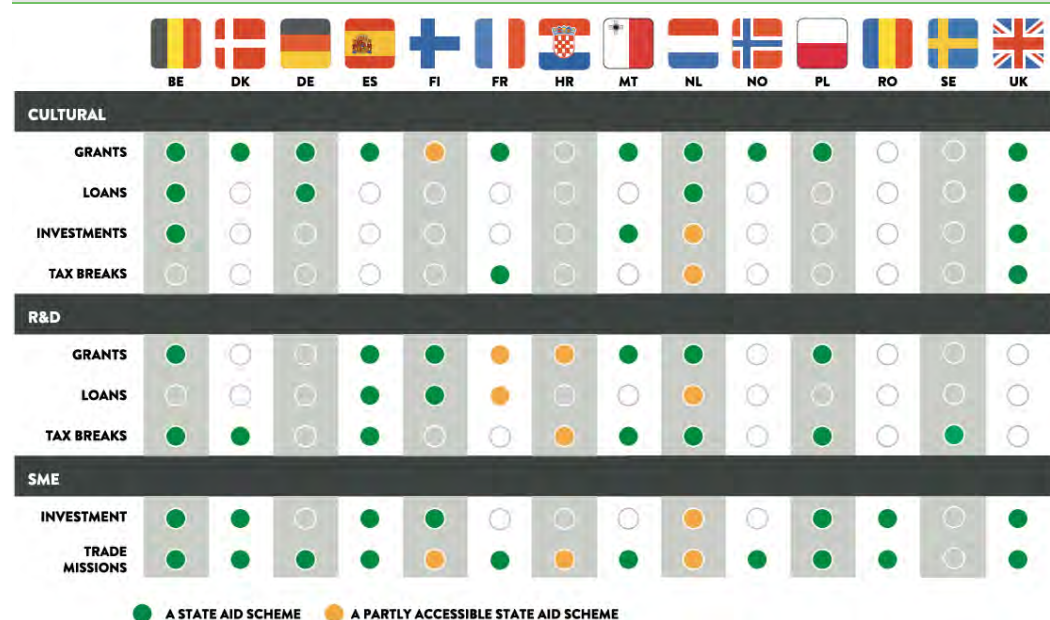
Driver 7: IP/content is king): In the current market, with the prospect of a proliferation of channels to market in the coming years (with eg multiple streaming initiatives, digital storefronts and the launch of next-generation consoles running side-by-side with current-generation consoles), this should represent a great opportunity for IP owners and publishers to maximise returns from their IP and expertise. In this environment, we believe that IP owners and content creators will have the upper hand and strongly prefer IP-owning companies over hardware manufacturers, distributors or retailers.

Edison comment: Ubisoft has an undoubted history of creativity, owning a number of major AAA titles and a significant back catalogue that it hopes to monetise through Uplay. THQ Nordic also has a significant IP library, largely acquired from THQ (a US publisher) out of insolvency as well as subsequent acquisitions. Paradox has a number of market-leading titles, as do Frontier and Codemasters. However, at this year's E3 conference, Cyberpunk 2077, owned by CD Projekt, was voted one of the most anticipated titles of 2020, following on from The Witcher series.

Driver 8: Tax reliefs level the playing field: Although a supportive tax regime is not a prerequisite for a high-cost jurisdiction, tax reliefs for the games and broader creative industries are now either in place or under consideration across much of Europe. Initially introduced in countries such as France and Canada, they have contributed to the market leadership of games clusters in these countries. Recognising the value of these creative and technology clusters, the UK launched its Video Games Tax Relief (VGTR) in 2014, levelling the playing field and allowing games to continue to be created profitably in relatively high-cost jurisdictions. Among other countries, Germany and Poland are considering similar support.

Edison comment: The UK and France, among others, have an established and supportive tax regime – and there is talk in the market that France may enhance its tax incentives further, targeting investment post-Brexit. With Germany and Poland considering more support for the games industry, this might provide an additional impetus for investors in these territories.

Exhibit 8: Funding support for the games industry is common across Europe



Source: European Games Developer Federation (EGDF) February 2018

European territory overview

In this global industry, European countries demonstrate areas of specialism and focus across different national markets. In part, this reflects cultural differences, with certain (particularly Mediterranean) countries rejecting the violence of some games as immoral, while others (often northern European) have willingly embraced new technology, games and related entertainment as progressive and a new means of social engagement.

Exhibit 9: Europe well represented among the leading games territories

Total revenue ranking	Territory	Total population	Online population	Total revenues	US\$ per head of population
1	US	327m	265m	\$36.9bn	\$113
2	China	1,415m	850m	\$36.5bn	\$26
3	Japan	127m	121m	\$19.0bn	\$150
4	South Korea	51m	48m	\$6.2bn	\$122
5	Germany	82m	76m	\$6.0bn	\$73
6	UK	67m	64m	\$5.6bn	\$84
7	France	65m	58m	\$4.1bn	\$63
8	Canada	37m	34m	\$2.8bn	\$76
9	Spain	46m	39m	\$2.7bn	\$59
10	Italy	59m	40m	\$2.7bn	\$46

Source: Newzoo, Edison Investment Research

The UK

Public market opportunities in the UK reflect the fact that game development came of age in the UK in the 1980s, with a generation of bedroom coders developing for early PCs and consoles. Many of the companies have evolved and survived from this era (eg Frontier, Codemasters, Team17), leading to a PC/console-led bias based around AA and AAA game development. Public market mobile and massively multiplayer online (MMO) game exposure is in limited supply, although private company expertise exists (eg Jagex has been a leading private MMO developer (RuneScape) for almost two decades).

France and Italy

France has a vibrant games community, with a focus on supporting indigenous culture and the creative industries underpinned by long-term government support. However, the France-quoted games universe is limited, although spearheaded by Ubisoft, a global publisher and one of the hotbeds of IP creation, though still lacking the scale of eg Electronic Arts and Activision Blizzard. Ubisoft is at the heart of the French games industry, with a number of studios having spun out over the years to create a substantial and diverse ecosystem. Ubisoft would recognise that it was late in starting its digital transition (69% of revenues digital in its latest results), offering the opportunity for further upside for investors as it benefits from its continued transition.

In France, other than Ubisoft, Bigben and Focus Home are mid-market publishers, using the opportunity offered by the digital transition to expand their IP portfolio despite limited financial resources. Similarly, in Italy, Digital Bros has evolved from what was a regional business to expand vertically with the digital transition, to become a global self-publisher of premium and FTP titles.

Scandinavia and the Nordics

Scandinavia (or rather the Nordics, which includes Iceland) is another region of creativity and innovation, with a population that embraces new technologies, having led the development of mobile phone companies such as Nokia and Ericsson. With this pedigree and with global successes such as Angry Birds (Rovio), Clash of Clans (Supercell) and Eve Online (CCP), the Nordics have established an ecosystem that offers mobile opportunities alongside PC and console development.

Germany and the DACH region

Germany and the broader DACH region, in video games terms at least, have historically been conservative markets, with consoles anecdotally barred from the living room for not being sufficiently family-friendly, meaning that gamers leant towards the PC as the platform of choice. This led to Germany becoming a market leader in browser-based PC games, a segment of the market that is now in decline in the face of stiff competition from mobile. The DACH region dominates browser-based game development, but otherwise there is a relative paucity of game developers in the region and a dearth of listed games companies, despite Germany being the world's fifth largest games market.

Eastern Europe

Finally, Poland and Eastern Europe. After a period in which Eastern Europe defined itself as a near-shore technology hub for Western Europe, the games industry in Eastern Europe has taken off in its own right over the past decade, with leading companies such as CD Projekt. Poland is the largest market in Eastern Europe with four substantial quoted companies (as well as more than 10 minnows) and, in an era of data-led market testing and digital distribution, the region's rich resources of technology and development skills have helped establish it as one of the fastest-growing games markets in the world.

Exhibit 10: Western Europe


Source: Newzoo 2019

Exhibit 11: Eastern Europe


Source: Newzoo 2019

Global companies but largely domestic investor bases

Despite games being a global industry, with even the smallest niche companies able (and likely to) distribute games to an international if not global audience, the top 10 shareholders of most companies (beneath the largest few, ie Ubisoft, THQ Nordic, etc) are dominated by domestic or regional investors. Exceptional investors include Swedbank Robur Fonder, which has invested at size across the European sector.

However, the majority of investors seeking exposure to the games industry consider only the limited universe of stocks listed locally. This suggests there should be scope for active investors, with industry expertise and insight, to look for companies with preferred business models at attractive valuations on a pan-European basis, rather than only considering those listed domestically.

As a fragmented market, with niche market leaders and few specialist investors, valuation disparities are more likely in Europe than in the US, which is dominated by a small number of global publishers that are closely compared as a group. Relatively small market capitalisations, restricted free float, limited liquidity, language barriers, differing approaches to transparency and corporate governance are all valid concerns, but this could nevertheless be an attractive proposition in the search for alpha.

Challenging investors to compare 'apples with apples'

Exhibit 13 analyses each of the Europe-quoted companies, setting out the major elements of each business to compare the underlying business models. We have had to make 'broad-brush' comparisons as we attempt to focus on the core business and look for common factors.

This categorisation allows us to look at the valuation multiples (13) on a more balanced basis, comparing companies with similar business models in an attempt to identify relative value.

The categories we consider are:

- **Publishers** – financiers, developers and publishers of their own games, but also providers of publishing and distribution services to third-party developers.
- **Self-publishers** – developers that have taken the opportunity presented by the digitalisation of the industry to self-publish their own titles online (but also likely to use publishers/distributors for physical product).
- **Mobile/casual** – companies whose business is dominated by free-to-play (FTP) or premium casual and/or mobile titles.
- **eSports** – companies that offer significant exposure to eSports (typically media companies or service providers) as the segment grows and develops.
- **Mid-market publishers/distributors** – regional publishers and distributors with a primarily local/regional footprint, usually including physical distribution.



- **Services/other** – a broader range of businesses that do not fit easily into the above categories, but nevertheless offer investment exposure to the industry.
- **Stressed/distressed** – a number of companies are trading at stressed or distressed valuations. We have broken these out to allow a clearer view of trading multiples for the principal categories.



Exhibit 12: European games sector by business type

			Primary business								Primary business model				Platform				
			Publishing																
Company	Listing	Market cap (\$m)	Retail	Digital	Dev	Self-publish	Physical dist	Services	IP owner	AAA	Prem-ium	Free-to-play	PC/ console	Mobile/ casual	Multi-platform	VR	eSports		
Publishers																			
Ubisoft Entertainment	France	9,147	✓	✓	✓		✓		✓	✓			✓	✓	✓	✓	✓		
CD Projekt	Poland	5,575		✓	✓				✓	✓			✓						
THQ Nordic	Sweden	2,171	✓	✓	✓		✓		✓	✓			✓	✓	✓	✓			
Team17 Group	UK	444		✓	✓				✓		✓		✓	✓	✓				
Self-publishers																			
Paradox Interactive	Sweden	1,653			✓	✓			✓	(✓)			✓						
Frontier Developments	UK	437			✓	✓			✓	(✓)			✓		✓	✓			
Codemasters	UK	377	✓		✓	✓	✓		✓	✓			✓	✓	✓	✓	✓		
PlayWay	Poland	306			✓	✓			✓		✓		✓						
11bit Studios	Poland	236			✓	✓			✓		✓		✓	✓	✓				
Mobile/casual																			
Modern Times Group MTG	Sweden	632			✓	✓		✓	✓			✓	✓	✓		✓	✓		
Stillfront Group	Sweden	612			✓	✓			✓			✓		✓					
Rovio Entertainment	Finland	598			✓	✓			✓			✓		✓					
Ten Square Games	Poland	229			✓	✓			✓			✓		✓					
G5 Entertainment	Sweden	82			✓	✓			✓			✓		✓					
eSports																			
Modern Times Group MTG	Sweden	632			✓	✓		✓	✓			✓	✓	✓		✓	✓		
Gfinity	UK	27			✖	✖		✓	✖		✓						✓		
Mid-market publishers/distributors																			
BigBen Interactive	France	255	✓	✓	✓		✓	✓	✓		✓		✓						
Focus Home	France	137	✓	✓	✖		✓	✓	(✓)		✓		✓						
Digital Bros (505 games)	Italy	117	✓	✓	✓	✓	✓		✓		✓	✓	✓	✓					
Other/Services																			
Games Workshop Group	UK	1,843	✓		✖	✓	✓	✓	✓		✓		✓						
Keywords Studios	UK	1,270			✓	✖		✓	✖				✓	✓	✓	✓			
Sumo Group	UK	287			✓	✖		✓	✖	✓			✓	✓	✓				
Immotion	UK	21			✓			✓	(✓)		✓		✓			✓			
Stressed/distressed																			
GAME Digital	UK	63			✖	✖	✓		✖				✓		✓	✓	✓		
Starbreeze	Sweden	55			✓	✓			✓	✓			✓			✓			
CI Games	Poland	38			✓	✖			✖		✓		✓						
MAG Interactive	Sweden	37			✓	✓			✓			✓		✓					

Source: Refinitiv data, Edison Investment Research. Note: Prices as at 5 August 2019.

**Exhibit 13: European games sector valuations**

Name	Year end	Quoted ccy	Market cap (\$m)	EV (\$m)	Sales growth 1FY (%)	Sales growth 2FY (%)	EBITDA margin 1FY (%)	EBITDA margin 2FY (%)	EV/sales 1FY (x)	EV/sales 2FY (x)	EV/EBITDA 1FY (x)	EV/EBITDA 2FY (x)	EV/EBIT 1FY (x)	EV/EBIT 2FY (x)	P/E 1FY (x)	P/E 2FY (x)
Publishers																
Ubisoft Entertainment SA	Mar-20	EUR	9,147	9,492	19.9	9.6	42.2	42.8	3.9	3.5	9.1	8.2	18.3	15.5	24.9	22.2
CD Projekt SA	Dec-19	PLN	5,575	5,433	-4.2	754.8	27.4	78.3	60.6	7.1	220.8	9.1	396.7	10.0	328.9	11.6
THQ Nordic AB	Mar-20	SEK	2,171	1,867	-4.4	13.4	33.4	36.1	3.3	2.9	9.8	8.0	25.8	19.7	31.9	25.9
Team17 Group PLC	Dec-19	GBp	444	416	17.5	8.5	35.9	35.4	6.7	6.2	18.8	17.5	22.3	20.7	27.8	25.7
				Mean (ex CDP)	11.0	10.5	37.2	38.1	4.6	4.2	12.6	11.2	22.1	18.6	28.2	24.6
				Median	6.7	11.5	34.7	39.4	5.3	4.9	14.3	8.6	24.0	17.6	29.8	23.9
Self-publishers																
Paradox Interactive AB (publ)	Dec-19	SEK	1,653	1,621	19.8	22.6	60.0	62.3	11.6	9.4	19.3	15.1	28.2	22.5	36.9	29.4
Frontier Developments PLC	May-19	GBp	437	389	153.1	-20.3	31.6	31.7	3.7	4.6	11.7	14.6	17.8	29.8	22.0	37.4
Codemasters Group Holdings	Mar-20	GBp	377	354	14.6	11.5	22.7	22.8	3.6	3.2	15.7	14.1	17.2	14.6	17.1	15.0
Playway SA	Dec-19	PLN	306	290	86.6	10.2	71.8	70.9	8.4	7.6	11.7	10.7	11.7	10.7	18.2	17.7
11 Bit Studios SA	Dec-19	PLN	236	223	-5.3	-6.2	52.8	57.3	11.1	11.9	21.1	20.7	22.5	26.5	29.4	46.8
				Mean	53.8	3.6	47.8	49.0	7.7	7.3	15.9	15.1	19.5	20.8	24.7	29.3
				Median	19.8	10.2	52.8	57.3	8.4	7.6	15.7	14.6	17.8	22.5	22.0	29.4
Mobile/Casual																
Modern Times Group MTG AB	Dec-19	SEK	632	582	NM	12.8	4.5	8.7	1.2	1.1	27.5	12.6	NM	45.6	NM	NM
Stillfront Group AB (publ)	Dec-19	SEK	612	647	37.0	15.1	37.7	38.9	3.4	3.0	9.1	7.7	12.6	10.5	17.9	14.0
Rovio Entertainment Oyj	Dec-19	EUR	598	465	12.2	5.7	15.3	17.0	1.3	1.3	8.7	7.4	12.1	9.2	20.0	15.4
Ten Square Games SA	Dec-19	PLN	229	215	61.3	2.7	36.5	35.5	4.5	4.4	12.3	12.3	12.5	12.6	16.3	15.9
G5 Entertainment AB (publ)	Dec-19	SEK	82	70	-11.7	8.4	17.6	18.2	0.5	0.5	3.0	2.7	5.7	4.9	24.8	18.1
				Mean	24.7	8.9	22.4	23.7	2.2	2.0	12.1	8.5	10.7	16.6	19.7	15.8
				Median	24.6	8.4	17.6	18.2	1.3	1.3	9.1	7.7	12.3	10.5	18.9	15.6
eSports																
Modern Times Group MTG AB	Dec-19	SEK	632	582	NM	12.8	4.5	8.7	1.2	1.1	27.5	12.6	NM	45.6	NM	NM
Gfinity PLC	Jun-19	GBp	27	19	78.4	87.0	NM	NM	2.0	1.1	NM	NM	NM	NM	NM	NM
				Mean	78.4	49.9	4.5	8.7	1.6	1.1	27.5	12.6	NM	45.6		
				Median	78.4	49.9	4.5	8.7	1.6	1.1	27.5	12.6	NM	45.6		
Regional Publishers/Distributors																
Bigben Interactive SA	Mar-20	EUR	255	296	15.1	12.9	20.2	21.2	0.9	0.8	4.7	3.9	11.8	9.8	10.9	8.7
Focus Home Interactive SA	Mar-20	EUR	137	117	10.8	-8.1	12.9	14.0	0.8	0.8	5.9	5.9	7.2	7.6	11.0	11.4
Digital Bros SpA	Jun-19	EUR	117	120	0.8	80.3	8.0	14.9	1.5	0.8	19.1	5.7	NM	9.3	NM	11.4
				Mean	8.9	28.4	13.7	16.7	1.1	0.8	9.9	5.2	9.5	8.9	10.9	10.5
				Median	10.8	12.9	12.9	14.9	0.9	0.8	5.9	5.7	9.5	9.3	10.9	11.4
Other/Services																
Games Workshop Group PLC	May-20	GBp	1,843	1,808	3.9	4.4	37.0	37.1	5.6	5.3	15.1	14.4	18.9	19.6	22.4	21.4
Keywords Studios PLC	Dec-19	GBp	1,270	1,270	20.5	10.8	18.3	18.0	3.8	3.4	20.7	18.9	24.9	22.4	32.0	28.5
Sumo Group PLC	Dec-19	GBp	287	283	31.3	17.6	27.3	27.2	4.6	3.9	16.8	14.3	19.4	16.9	23.5	20.3
				Overall Mean (ex CDP)	29.5	14.8	29.5	30.9	4.0	3.7	14.4	11.4	17.0	18.7	22.8	
				Overall Median	17.5	10.8	29.4	29.4	3.6	3.2	13.7	12.5	17.8	16.2	22.4	
Stressed/distressed																
GAME Digital PLC	Jul-19	GBp	63	-51	-0.7	2.4	1.4	1.9	-0.1	-0.1	-3.8	-2.8	21.0	-27.9	-9.4	-23.6
Starbreeze AB	Dec-19	SEK	55	75	1.6	72.3	-20.4	4.2	2.0	1.2	-9.9	27.7	-2.9	-3.4	-2.6	-3.2
CI Games SA	Dec-19	PLN	38	42	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
MAG Interactive AB (publ)	Aug-19	SEK	37	20	-17.9	16.9	0.0	18.8	1.1	0.9	NM	4.9	-7.9	13.6	-21.5	25.5

Source: Refinitiv data, Edison Investment Research. Note: Prices as at 5 August 2019.

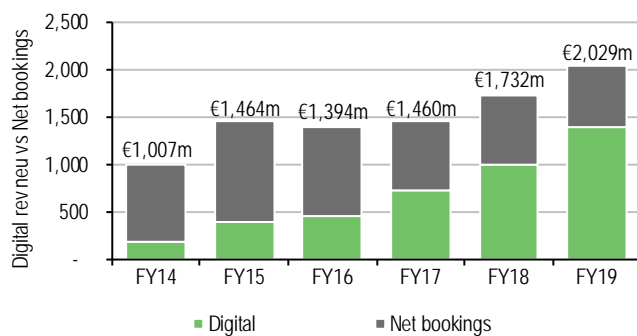
Investment considerations

Games company share prices have largely been on an upward trajectory since 2013, with the US publishers in the vanguard, driven by the industry migration from a principally physical model to an increasingly digital model and the benefits this has brought to the bottom line.

However, despite the strong underlying growth (Newzoo: c 9% to 2022), games stocks were still not immune to the general pullback in technology valuations seen in H218, as investors grew increasingly nervous of the continuing growth story underpinning sector valuations – EA, Activision Blizzard and Take-Two are all back at share price levels seen in 2017.

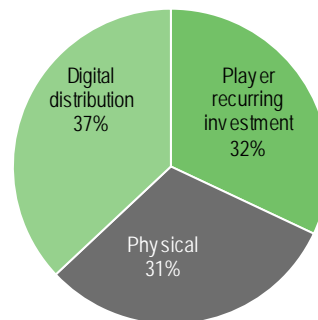
European companies were later to start digitalisation and, as such, still have further to travel. As an example, Ubisoft has disclosed that its digital revenues represent 69% of FY19 revenues, with 32% of this representing recurring investment from players.

Exhibit 14: Ubisoft's digital journey



Source: Ubisoft, Edison Investment Research

Exhibit 15: Ubisoft – 69% of net bookings digital in FY19



Source: Ubisoft, Edison Investment Research

Taking Ubisoft as representative, this suggests that although European games companies are behind the curve in terms of converting to a digital model, from an investment perspective they still have further value to be derived from this transformation.

Growth trend reasserted

Exhibit 16: Blended share price progression for a basket of European games companies



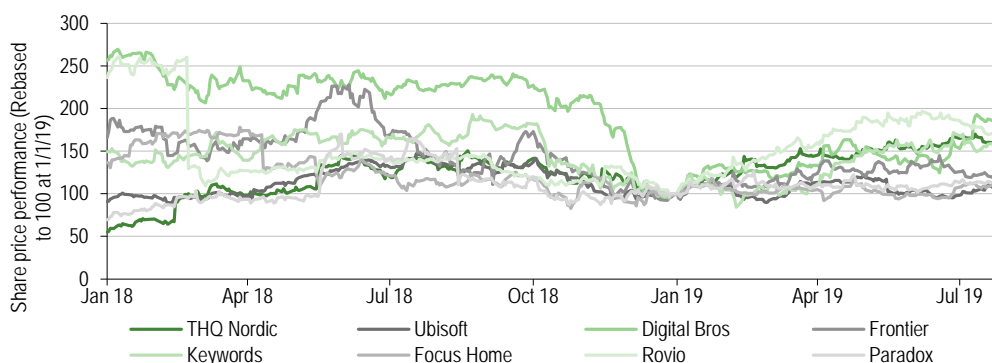
Source: Refinitiv data at 5 August 2019, Edison Investment Research

Looking at the blended performance of games company shares since 2011, we can see that share prices in the European games sector started to take off in 2013 and have continued on an upward trajectory for the past five to six years, with share price growth of c 50% pa on average, equating to blended share price growth of 7–8x over this period.

The surge in share prices in 2018 and subsequent decline should be taken in this context, and represented an attractive buying opportunity. Indeed, since the start of 2019, trend growth has been re-established with 40%+ share price growth seen ytd.

Driven by the factors set out in our initial UK games sector report, [Heterogeneous not Homogeneous](#) (namely a global games industry, continuing strong growth, digitalisation, better management and niche market leadership) – all factors that apply across Europe, not just to UK companies – we anticipate continued strong share price growth and potentially further consolidation of leading IP owners and content developers.

Exhibit 17: Share prices for select European games companies 2018–19



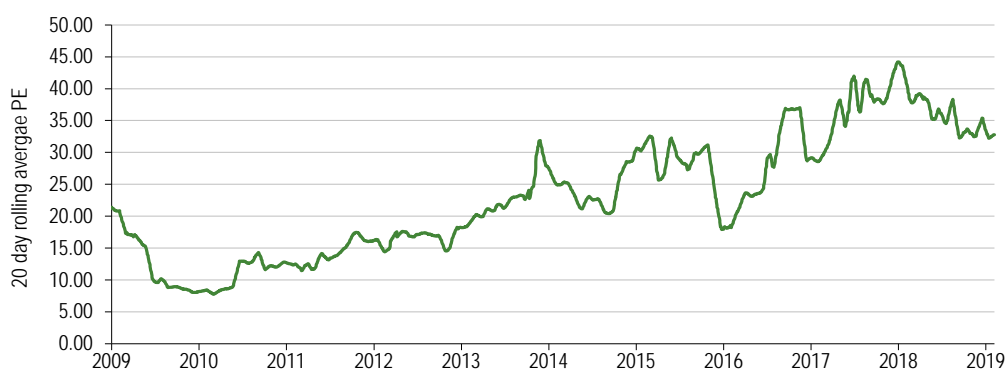
Source: Refinitiv data at 5 August 2019, Edison Investment Research

Resurgence in 2019 following H218 dip

After the broad rebasing of games company share prices seen in H218 (driven by a reassessment of the growth prospects for the broader global technology sector), shares in the games sector have subsequently recovered, with positive results reassuring investors, leading to share price increases of 30–50% since the start of 2019. Year to date, Ubisoft has lagged the sector, more closely tracking US games company performance than European. At least in part, this is because Ubisoft tends to mirror US valuation trends as, given its size and scale, US investors hold a significant proportion of its register and it is subject to direct comparison with the US majors (Electronic Arts, Activision Blizzard and Take-Two).

Valuations remain elevated

Exhibit 18: 10-year blended P/E for a basket of European games companies



Source: Refinitiv data at 5 August 2019, Edison Investment Research

As can be seen in Exhibit 18, valuations of European games companies remain elevated by historic standards. Although down from the peaks seen in H118, in aggregate, the sector still trades at a historic P/E multiple of c 30–35x. Looking at the chart, P/E multiples have continued trending

upwards for much of the past decade as the digital model has transformed prospects for the games industry. As we have mentioned previously, we believe this digital trend still has further to run, supported by strong underlying growth in the sector and an increasing contribution from streaming.

Looking at the share prices of individual companies in Exhibit 17, Rovio and Digital Bros stand out as having had sharp reversals in 2018. Rovio disappointed following its IPO in Q317, as it struggled to replicate the success of Angry Birds and failed to diversify its business, leading to a more than 50% fall in the share price in the six months post-IPO, whereas Digital Bros, a regional Italian publisher and distributor, has been caught up in the fallout from OVERKILL's The Walking Dead, the game largely responsible for Starbreeze's trading woes.

Trading multiples across the subsectors

Looking at the valuation table (Exhibit 13), we have tried to group the games companies into 'buckets' with similar characteristics.

The publishers and self-publishers both trade at an average c 25–30x FY1/FY2 P/E (although CD Projekt is a major outlier with expectations high for the launch of Cyberpunk 2077 next year). However, the EV/Sales multiples show that publishers are trading at 4–5x, whereas average multiples for the self-publishers are trading as high as 7–9x. This reflects the business mix, where self-publishers bear the cost of development and retain the full sales revenue for themselves – they do not own physical distribution, do not outsource development, nor do they compete head-to-head with publishers vying for expensive licences, and they use highly targeted marketing. This results in a more cost-efficient, higher-margin business.

We have separated mobile/casual games companies from premium publishers and self-publishers as the business models for portfolios of typically FTP titles are very different to the premium titles developed by most publishers and self-publishers. Average valuations for the mobile/casual games companies are 15–20x P/E and 1–2x EV/sales, below those of the premium publishers. As was highlighted by Rovio post-IPO, trends in mobile/casual games remain fast-moving and successful models require a data-centric agile approach to development, actively responding to trends and player feedback. The FTP revenue stream is typically considered to be lower quality, offering less visibility of future revenues, and therefore warrants a valuation discount to premium titles in most investors' eyes.

eSports is a developing sector, offering the potential for high future growth. However, today at least, the business model remains unproven with companies trying to retain optionality, targeting multiple revenue streams – being paid by publishers to arrange and host events for their games titles, venue fees for bringing audiences to specific locations, competition entry fees and ticketing revenues and, ultimately, ad revenues from the monetisation of broadcast content and online channels. In light of this lack of visibility and their aspiring profitability, eSports companies are currently being valued at 1–2x EV/sales with the business model still at an early-stage and margin potential (and breakeven) yet to become clear.

The regional distributors and mid-market publishers have a challenge to remain relevant in an increasingly digital and global business, with increasing investment in IP development required as they look to expand their portfolios. Valuations reflect this transitional challenge, with P/Es of 10–12x and a c 1x EV/sales reflecting lower margins and a relatively high cost base.

We have included a games services/other category to reflect a number of interesting businesses in and around the games industry with a range of different characteristics. Keywords is a global games services business, providing outsourcing support to major publishers. Sumo Group is a co-developer and work-for-hire developer, operating a largely cost-plus (although relatively high margin) model. It aspires to IP ownership, but that is likely to remain a secondary model for the foreseeable future. We have also included Games Workshop as a comparator, which is a retailer of tabletop fantasy games on the one hand, but also a community of fantasy gamers on the other, with its IP regularly licensed to create video games (c 11% of revenues are derived from games

licensing). These businesses, all leaders in their own niches, trade at widely varying PE multiples of 20–32x and 3.5–5.5x EV/sales.

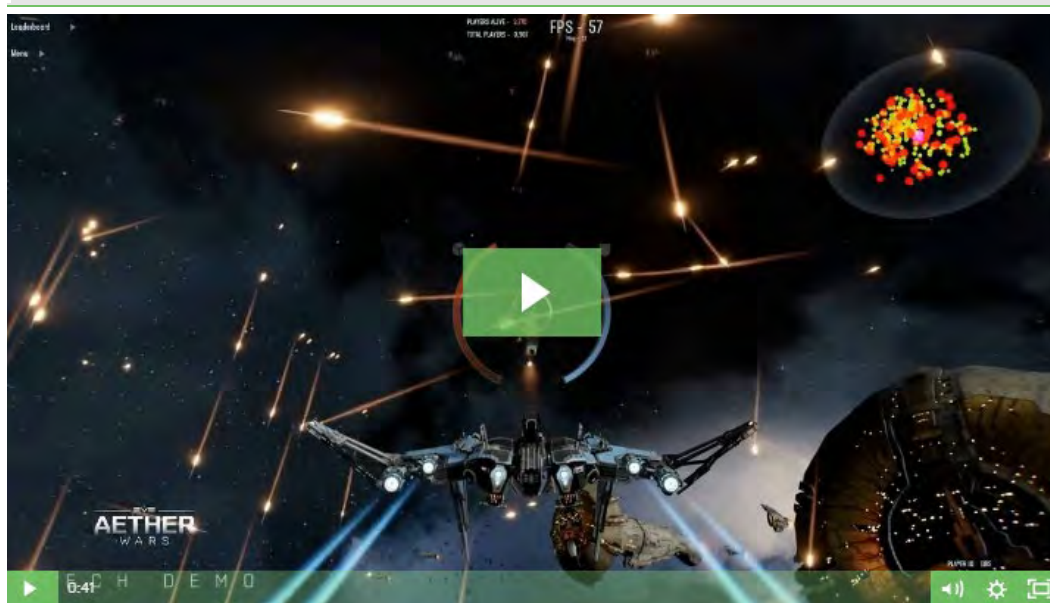
Finally, there are a number of challenged businesses in the sector: Starbreeze, a traditional developer, was over-exposed to a failed project (OVERKILL's The Walking Dead); MAG Interactive, a mobile puzzle games developer with a narrow portfolio of titles, has struggled to replicate the success of WordBrain; CI Games, a Polish publisher, has cancelled its major project, Lords of The Fallen 2; while Game Digital has been transitioning from a games retailer to reinvent itself as an experiential and high street eSports venue, and is currently subject to a takeover offer from Sports Direct.

Alternative sources of exposure

As well as the quoted games companies discussed in this note, it is possible to gain exposure to the games sector through certain quoted investors, although this exposure is more diluted.

Investors with games investments include:

- Draper Esprit (GROW.LN, £601m, 512p)
 - Hadean is developing a cloud-first operating system, with the goal of redefining the technology stack for modern computing. Hadean's operating system enables programmers to scale their code, treating an entire cloud data centre as a single processor. This technology has already been used by CCP Games, the creator of MMO Eve Online, to stage '10,000-player deathmatch', the largest online battle ever fought. The number of concurrent human players peaked at 2,379; including AI, the deathmatch peaked at 10,412 participants.
 - Founded in 2010, Peak Games launched casual puzzle game titles Toy Blast in 2015 and Toon Blast in 2017. Over 275 million users globally have installed one of Peak's products, making it one of the top-10 mobile games companies in the US. Based in Turkey, but with the majority of its sales in the US, Peak Games had revenues in the hundreds of millions by mid-2018.
- Mercia Asset Management (MERC.LN, £106m, 35p)
 - nDreams is a developer and publisher of virtual reality (VR) content and is the largest holding in Mercia's direct investment portfolio with a fair value of £15m at March 2019, approximately 17% of portfolio fair value. nDreams has produced a range of titles, the latest title announced being Phantom: Covert Ops, developed in partnership with Oculus Studios.
- IP Group (IPO.LN, £663m, 61.7p)
 - Ultrahaptics is a world leader in mid-air touch technology, using ultrasound to create rich, three-dimensional shapes and textures that can be felt, but not seen, enriching virtual objects with the sense of touch and adding presence. Among other use cases, for innovative companies in gaming and entertainment this provides an opportunity to deliver unique and differentiating experiences. As at FY18, Ultrahaptics was IP Group's sixth largest portfolio holding, valued at £27.5m.

Exhibit 19: CCP/Hadean tech demo for EVE: Aether Wars video


Source: CCP, Hadean, YouTube

Conclusions

Looking across the major European games territories, there is a range of different companies in and around the games sector, often market leaders in their own specific segment or niche. The companies range in size from tens of millions of euros to five or more with a market capitalisation of €1bn+. Although Europe does not have a platform holder or other companies of the scale or financial muscle of the leading US and Asian companies, it does offer innovation and creativity, together with a range of market leaders in different niches, strongly supported by governments across Europe.

Exhibit 20: SWOT analysis of the European games landscape

Strengths	Weaknesses
<ul style="list-style-type: none"> ■ Sustained long-term growth potential (9%+ to 2022 (Newzoo)) ■ Games offers singular exposure to a global youth demographic ■ Europe offers a range of companies targeting specialist niches ■ European creativity is world-leading in multiple genres ■ Supportive tax regimes in most key territories ■ Companies starting to benefit from GaaS/DLC/Community models ■ Further upside as full benefits of digitalisation yet to be realised 	<ul style="list-style-type: none"> ■ No global tech titans in Europe ■ Asia/US still lead the industry ■ Substantial investment and innovation occurring overseas ■ Scale and liquidity lacking ■ Many of the most innovative business models not yet quoted ■ eSports, VR and streaming hard to play themes
Opportunities	Threats
<ul style="list-style-type: none"> ■ Further digitalisation of revenues ■ Investors able to arbitrage cross-border valuation anomalies ■ Growing appreciation of the games industry by the media ■ Potential for games to become a mainstream investment ■ Interactivity and stickiness of games to dominate media consumption 	<ul style="list-style-type: none"> ■ Overseas tech giants attempting to dominate the industry ■ Challenge to screen-time from other media ■ Hit-driven models remain high risk ■ A number of companies still operating legacy business models ■ Lack of access to capital may push companies towards M&A ■ Fragmentation will continue to challenge slower moving businesses ■ Regulatory threat hard to dismiss

Source: Edison Investment Research

Exhibit 20 sets out a summary of our view of the attractions and challenges of the European games landscape. Investors should find reassurance in the fact that the games industry is large (\$150bn+), global, growing strongly (Newzoo: 9% CAGR to 2022) and has already dealt with many of the challenges faced by the transition to a digital model, but has some of the benefits still to be accrued.

By looking at a single territory, investors are unnecessarily limiting their investable universe. We believe that a more rewarding strategy would be to select companies on a pan-European basis

from a broader pool of businesses, identifying the characteristics and business models that the investor believes will succeed over the next decade, before choosing best-of-breed companies.

In particular, given the levels of external investment we have seen over the last 12 months in, eg streaming, subscription models, digital distribution, VR, eSports as the global technology leaders position themselves with a channel to market, we believe IP owners are set to benefit disproportionately. There will be an increasing need to differentiate their product, with IP ownership or exclusivity (potentially by way of M&A) an obvious differentiator. IP ownership should be valued at a premium and IP owners represent the most attractive companies in which to invest in the games industry for the foreseeable future.

The games industry has made demonstrable progress over the last 10 years and valuations for a number of companies are undoubtedly challenging. However, the opening up of the European market and the proliferation of investment opportunities across Europe suggests that this remains a good time to invest to get exposure to sustainable growth and to exciting future/developing themes.

Company profiles

Exhibit 21: Company snapshots

11bit Studios

Company	Description	Key financials	Investment case
11B.WA PLN402	Corporate overview 11bit Studios develops and sells cross-platform video games worldwide. Sales of 'Frostpunk' confirmed that 'This War of Mine' was not a one-off and the company can deliver games that can stand out and reach the number one spot on the Steam Global Bestsellers. 11bit aims to set up three independent development teams, to allow development to run in parallel and release titles every one to two years. The success of 'Moonlighter', a third-party title, and 'Children of Morta' planned for 2019 strengthens the company's position as a publisher. Recurring revenues from 'Frostpunk' will provide substantial revenue visibility.	Dec 2018a Net cash: PLN24.3m Revenue: PLN82.1m EBITDA: PLN51.4m Net profit: PLN37.5m	Bull <ul style="list-style-type: none">Digitally focused business modelFrostpunk revenues underpin the businessExtensive community-testing pre-launchPipeline of new IP scheduled for 2019 Bear <ul style="list-style-type: none">New studio with limited track recordInvesting heavily in new IPLimited back catalogue/recurring revenues

Catalysts: Interims 29 August 2019, Q3 results 16 November 2019

Bigben Interactive

Company	Description	Key financials	Investment case
BGBN.PA €11.88	Corporate overview A leader in the digital entertainment industry, the Bigben Group applies its know-how through the synergy of strategic activities: gaming, mobile phones and audio. With its successful and long-lasting European base, Bigben has extended its distribution network to five continents. Recognised for its innovation and creativity, the group now aims to become one of the worldwide leaders in each of its markets. Headcount: more than 600 employees. International: 12 subsidiaries and a distribution network in 100 countries. Bigben has completed three acquisitions in the past two years: Cyanide (cycling, stealth); Eko Software (Action RPG, Sports Sim) and most recently Spiders (Action RPG), as well as taking control of of Kylotonn (Racing).	Mar 2019a Net debt: €36.2m Revenue: €245.5m EBITDA: €44.9m Net profit: €17.3m	Bull <ul style="list-style-type: none">Offers exposure to the entire games value chain (developer, publisher and distributor)Leading European games accessories business – French market leaderProvides packages of games and accessoriesBIGBEN 2022: investing in a portfolio of AA IP Bear <ul style="list-style-type: none">Domestic and regional footprintGeneralist not specialist business model (c 50/50 revenue split games/accessories)Exposed to retail distribution

Catalysts: Interim results 21 October 2019

CD Projekt

Company	Description	Key financials	Investment case
CDR.WA PLN225.5	Corporate overview The company focuses on two key areas: the development and distribution of world-class videogames (eg The Witcher video game series and other ongoing projects, including the upcoming AAA release, Cyberpunk 2077); and the digital sales of video games directly to customers around the world via the GOG.com and GOG Galaxy platforms. Altogether, games from The Witcher series, the company's flagship franchise, have sold over 25m copies. Currently, the company is working on the development of a collectible card game, Gwent, which was initially a mini-game in The Witcher 3. Gwent is now a standalone product.	Dec 2018a Net cash: PLN659m Net rev: PLN363m EBITDA: PLN149m Net profit: PLN109m Free float: 61%	Bull <ul style="list-style-type: none">Cyberpunk one of most anticipated titles of 2020Developer and digital publisher of AAA titlesReputation for strong, high-quality IPFocused on role-playing games (RPGs)Digital-led modelOnline distribution platform – GOG Bear <ul style="list-style-type: none">Narrow portfolio (betting the farm on Cyberpunk)Titles released 'when they are ready'Significant year-on-year revenue peaks and troughsStill offers a 'hit-or-miss' development model

Catalysts: Interim results August 2019, Q3 November 2019

Codemasters			
Company	Description	Key financials	Investment case
CDM.LN 222p Mkt cap: US\$377m	<p>Corporate overview</p> <p>Codemasters is a video game developer and publisher, specialising in high-quality racing games. The company is one of the most recognised British game developers and publishers, with a 30-year track record of producing successful games.</p> <p>The group has approximately 500 full-time employees and operates in three UK locations: Southam (Warwickshire), Birmingham and Runcom (Cheshire). It also has one overseas location in Kuala Lumpur, which is an art production facility.</p> <p>Codemasters has a proven track record of video games technology, development and innovation spanning three decades of rapid technological change. It has exploited its technology to develop innovative video games across a wide variety of different platforms, and has established relationships with globally renowned partners including Apple, Microsoft and Sony.</p> <p>The group currently manages three established franchises in the racing games category, being DiRT, GRID and F1, and launched ONRUSH 2, its fourth franchise, in June 2018 with a view to extending its penetration of the racing games category.</p>	<p>Mar 2019a</p> <p>Net cash: £18.2m</p> <p>Revenue: £71.2m</p> <p>EBITDA: £18.7m</p> <p>Net profit: £3.7m</p>	<p>Bull</p> <ul style="list-style-type: none"> ■ Global leader in racing game niche ■ Predominantly digital distribution model ■ IP owner and licensor – strong relationship with F1 ■ Partnered with NetEase for Chinese mobile market ■ Partnership agreement with Motorsport Network to target eSports opportunity <p>Bear</p> <ul style="list-style-type: none"> ■ Relatively narrow portfolio of titles ■ Overhang from residual Reliance stake ■ F1 licence renewal on the horizon (2021) ■ Does racing IP still resonate with younger audiences? ■ How does Codemasters expand beyond racing?

Catalysts: Interim results November 2019

Digital Bros			
Company	Description	Key financials	Investment case
DIB.IM €7.40 Mkt cap: US\$117m	<p>Corporate overview</p> <p>Digital Bros develops, publishes and distributes multichannel video games worldwide. Digital Bros operates worldwide under the brand 505 Games. It has offices in the US, China, UK, France, Spain and Germany. Digital Bros covers the entire value chain, from concept to distribution of the final product. The majority of revenues are derived from international sales (c 80%) and digital (50–60%).</p> <p>Development: Digital Bros owns: DR Studios, a UK company focused on FTP games on PC, console and mobile platforms; Kunos Simulazioni, the developer of Assetto Corsa; and a 49% share in Ovosonico, an Italian studio known for its award-winning Murasaki Baby, published by Sony.</p> <p>Publishing: both premium and FTP games, in-house and third-party, on all platforms – mobile, social, digital and retail.</p> <p>Distribution: content is available through all channels: retail (main chains and stores); digital download (through the direct distribution to customers via Steam, Sony PlayStation Network and Microsoft Xbox Live); download of game apps for mobile and tablet (through the AppStore and Google Play iOS and android devices); and new online social platforms (through development of game apps for the main social networks as Facebook).</p>	<p>Dec 2018a</p> <p>Net debt: €1.1m</p> <p>Revenue: €76m</p> <p>EBITDA: €4.3m</p> <p>Net loss: €2.9m</p>	<p>Bull</p> <ul style="list-style-type: none"> ■ Broad-based business model with international footprint ■ Increasingly digital distribution ■ Attempting to move up the value chain by investing in IP ownership in 2019/20 <p>Bear</p> <ul style="list-style-type: none"> ■ Narrow portfolio of owned and third-party IP ■ Mid-market publisher focused on both premium and FTP games ■ Retains presence in Italian distribution ■ Concerns over exposure to Starbreeze

Catalysts: FY results October 2019

Focus Home Interactive			
Company	Description	Key financials	Investment case
ALFOC.PA €23.60 Mkt cap: US\$137m	<p>Corporate overview</p> <p>Focus Home Interactive is a French publisher based in Paris. Known for the quality, diversity and originality of its catalogue, Focus has published and distributed original titles (Vampyr, Farming Simulator, Call of Cthulhu, Insurgency: Sandstorm) that are played worldwide, available both in store and by way of download. Focus publishes games on all major platforms, consoles and PC. The publisher's catalogue will broaden in the coming months with games such as A Plague Tale: Innocence, World War Z, The Surge 2, MudRunner 2, GreedFall and others.</p>	<p>March 2019a</p> <p>Net cash: €18.8m</p> <p>Revenue: €126m</p> <p>Op income: €14.1m</p> <p>Net profit: €8.0m</p>	<p>Bull</p> <ul style="list-style-type: none"> ■ Well advanced transition to digital distribution ■ Recurring revenues from strong back catalogue (25% of sales from back catalogue, 66% digital) ■ 90% of sales are international ■ Investing in improving game quality <p>Bear</p> <ul style="list-style-type: none"> ■ Narrow portfolio of key titles ■ High exposure to Farming Simulator ■ Does not own (all) IP ■ Mid-market publisher ■ Attempting to move up the value chain

Catalysts: AGM 24 September 2019, interim results January 2020

Frontier Developments			
Company	Description	Key financials	Investment case
FDEV.LN 928p Mkt cap: US\$437m	<p>Corporate overview</p> <p>Frontier is a world-class video game developer and publisher, with multiple revenue-generating franchises. It is focused on video game development across a wide variety of genres and platforms, with a proven track record of progressive development and innovation spanning several decades of rapid technological change. The business has more than 400 full-time employees and is headquartered in Cambridge, UK. Frontier has established relationships with globally renowned partners, producing work for international brands as well as its own IP. Frontier develops games across multiple platforms using its proprietary cross-platform technology, Cobra. It self-publishes, and has achieved commercial and critical success with BAFTA-nominated titles, Elite Dangerous and Planet Coaster, as well as its licensed title, Jurassic World Evolution and upcoming Planet Zoo.</p> <p>Catalysts: FY results September 2019, Planet Zoo release 5 November 2019</p>	<p>May 2018a</p> <p>Net cash: £24m</p> <p>Revenue: £34m</p> <p>EBITDA: £9m</p> <p>Net profit: £3.6m</p>	<p>Bull</p> <ul style="list-style-type: none"> ■ Digital business model ■ Self-publisher expanding to third-party publisher ■ Focused on 'sticky' community-centric Sim games ■ Strong management team with a proven public market track record ■ Tencent partnership has potential to deliver material incremental sales in China <p>Bear</p> <ul style="list-style-type: none"> ■ Relatively narrow games portfolio ■ Ambitious release pipeline (one game per year) ■ Point of maximum risk in the strategy ■ Cost of licenced IP unclear ■ Likely to step outside core expertise as it expands
G5 Entertainment			
Company	Description	Key financials	Investment case
G5EN.ST SEK88.10 Mkt cap: US\$82m	<p>Corporate overview</p> <p>G5 Entertainment Group develops and publishes high-quality FTP games for both smartphones and tablets that are family-friendly, easy to learn, and targeted at the widest audience of both experienced and novice players. The group distributes its games through the Apple, Google, Amazon, and Windows application stores. Its portfolio includes popular games like Hidden City, Mahjong Journey, Homicide Squad, Survivors: The Quest, The Secret Society and Pirates & Pearls. G5 primarily offers proprietary games, but also publishes games licensed from other developers – paying a royalty based on sales performance. The most important markets for the company are the US and Asia, which combined account for c 80% of revenues. G5 is focused on games for a female audience age 35+.</p> <p>Catalysts: Q3 results November 2019</p>	<p>Dec 2018a</p> <p>Net cash: SEK203m</p> <p>Revenue: SEK1.45bn</p> <p>EBITDA: SEK232m</p> <p>Net profit: SEK129m</p>	<p>Bull</p> <ul style="list-style-type: none"> ■ Focused on FTP mobile titles ■ Market-leader in hidden object games ■ Also develops Match-3 games ■ Sufficient scale to cross-sell new titles to existing user base <p>Bear</p> <ul style="list-style-type: none"> ■ FTP mobile is a crowded market ■ Cost-effective UA/user discovery problematic ■ UA costs (and therefore) margins critically dependent on cross-selling to existing users
GAME Digital*			
Company	Description	Key financials	Investment case
GMD.LN 29.6p Mkt cap: US\$63m	<p>Corporate overview</p> <p>GAME Digital is the leading multichannel specialist retailer of video games in the UK and Spain, with 274 stores in the UK, 265 stores in Spain and over 30% market share. GAME's retail businesses are the market leaders in these geographies, with a fully integrated multichannel offer including the multi-award winning GAME App, and over 4.5m active customers across its Reward programmes. Game Digital delivers an authoritative range of specialist gaming products and services to gaming communities in the UK, Spain and beyond, providing more ways for gamers to enjoy more games and unique gaming experiences, more often. Game is developing its proposition with the continued expansion of BELONG, the group's leisure experience, which brings video-gaming to high streets, shopping centres and communities nationwide. Through its eSports and events activities, the group aims to deliver unparalleled consumer gaming experiences directly, and on behalf of third parties, including its flagship event, Insomnia, the UK's largest gaming festival. The group's visual recognition and augmented reality business, Ads Reality, is pioneering the use of new technologies to reach gamers and business partners outside its main markets.</p> <p>Catalysts: GAME Digital is currently subject to a takeover offer.</p>	<p>July 2018a</p> <p>Net cash: £56.8m</p> <p>Revenue: £782m</p> <p>EBITDA: £10.1m</p> <p>Net loss: £10.2m</p>	<p>Bull</p> <ul style="list-style-type: none"> ■ Leading UK and Spanish games retailer ■ Building on its significant digital presence ■ Innovating to transition to the more experiential BELONG eSports and events model ■ Backed by Mike Ashley and Sports Direct <p>Bear</p> <ul style="list-style-type: none"> ■ Its core business is high street retail in developed markets (UK and Spain) ■ Game is being disintermediated by the digitalisation of the games industry <p>GAME Digital is currently subject to a takeover offer from Sports Direct.</p> <p>*GAME Digital is an Edison client</p>

Games Workshop*			
Company	Description	Key financials	Investment case
GAW.LN 4,666p Mkt cap: US\$1.84bn	<p>Corporate overview</p> <p>Games Workshop is a leading international specialist designer, manufacturer and seller of miniatures, scenery, fiction and artwork for tabletop miniature games set in fantasy and science fiction worlds. The company's key brands are Warhammer Age of Sigmar (Age of Sigmar) and Warhammer 40,000 (Warhammer 40K), alongside Horus Heresy, an offshoot of Warhammer 40K. It also holds the licence for The Lord of the Rings and The Hobbit tabletop battle game. Its IP has been licensed to produce multiple video games.</p> <p>Games Workshop's Warhammer hobby concept (the Hobby) is centred on customers collecting, building and painting miniatures that can ultimately be used in games played against fellow enthusiasts, either privately or at organised events. The company has delivered outstanding growth in revenue and profit over the past two years through better product ranges and extensive use of online and social media marketing to engage with its customers and make the Warhammer Hobby more accessible to a wider audience through its multichannel distribution network of stores, websites and third-party sellers.</p> <p>All products are designed in-house and manufactured at the company's manufacturing, distribution and head office facilities in Lenton, Nottingham. This supplies two distribution hubs in Memphis, US, and Sydney, Australia.</p>	<p>June 2019a</p> <p>Net cash: £29.4m</p> <p>Revenue: £256.6m</p> <p>EBITDA: £97.12m</p> <p>Net profit: £65.8m</p>	<p>Bull</p> <ul style="list-style-type: none"> ■ Niche market leader ■ Best-in-class vertically integrated manufacturer ■ Community-centric model ■ Owner of multiple global IPs ■ Broad geographical diversification ■ Highly cash generative <p>Bear</p> <ul style="list-style-type: none"> ■ Legacy business model ■ Physical manufacturing business ■ Narrow portfolio of IPs

*Games Workshop is an Edison client

Catalysts: Interims January 2020

Gfinity			
Company	Description	Key financials	Investment case
GFIN.LN 4.6p Mkt cap: US\$27m	<p>Corporate overview</p> <p>Gfinity is a world-leading, end-to-end eSports solutions provider, creating managed services solutions for publishers, rights holders and brands, as well as owned and operated proprietary solutions. Its goal is to create compelling, engaging and bankable solutions and content, which can be sold to distribution platforms (eg Twitch, Facebook) or directly to sponsors, advertisers or consumers. For Gfinity, content is the exciting part of the value chain where it is in a unique position due to its strong partnerships, solid execution track record, state-of-the-art studio and technical platform. Through its Elite Series, Gfinity has become an eSports solutions and content provider for leading publishers, rights holders and brands. It is now focusing on managed services, allowing it to leverage the brand and distribution of its major brand partners eg the Premier League, Formula 1.</p> <p>It has yet to be determined what share of that value creation Gfinity will capture. However, it expects to be a mission-critical piece of the puzzle for its long-term partners – EA, Microsoft, Formula 1 – with the revenue model evolving towards a revenue and profit share eSports rights management model.</p>	<p>June 2018a</p> <p>Net cash: £3.7m</p> <p>Revenue: £4.3m</p> <p>EBITDA: (£13.5m)</p> <p>Net loss: £13.6m</p>	<p>Bull</p> <ul style="list-style-type: none"> ■ One of two quoted pureplay eSports solutions ■ eSports forecast to grow at 20% in 2018–22 ■ Building momentum with a series of major partnership announcements ■ Partnered with major global games publishers (ATVI, EA, Codemasters) ■ Announced £5.25m fund-raise in July, new shares to trade from 1 August <p>Bear</p> <ul style="list-style-type: none"> ■ Early-stage business ■ Revenue model is still crystallising ■ Significant cash burn ■ Remains a number of years from profitability – targeting break-even by 2021

Catalysts: FY results 14–18 October 2019

Immotion Group			
Company	Description	Key financials	Investment case
IMMO.LN 7.2p Mkt cap: US\$21m	<p>Corporate overview</p> <p>Immotion Group is a UK-based immersive virtual reality (VR) out of home entertainment group. Immotion aims to become a market leader in the western market sector of the Out of Home virtual reality market, through its create, publish and distribute model, with the objective of creating recurring revenues from a large installed base of VR Motion Platforms.</p> <p>The group combines its VR content and Motion Platform hardware to offer consumers in leisure destinations, such as shopping malls and family entertainment centres, state-of-the-art VR experiences, for a wide range of ages. The group is headquartered in Manchester, UK, with a subsidiary in Los Angeles, US, and a branch in Dubai, UAE.</p>	<p>December 2018a</p> <p>Net cash: £3.4m*</p> <p>Revenue: £1.9m</p> <p>EBITDA: (£2.2m)</p> <p>Net loss: £2.9m</p> <p>*Includes £3.1m from post year-end placing</p>	<p>Bull</p> <ul style="list-style-type: none"> ■ One of a small number of pure-play VR solutions ■ Enterprise and location-based VR commercialising ■ Consumer VR expected to be a major driver of games growth in the future ■ Announced up to £2.5m fund-raise in July 2019 <p>Bear</p> <ul style="list-style-type: none"> ■ Early-stage business ■ Significant cash burn ■ Remains a number of years from profitability ■ Hard to call the tipping point for consumer VR

Catalysts: Interim results September 2019

Keywords Studios*

Company	Description	Key financials	Investment case
KWS.LN 1615p Mkt cap: US\$1.27bn	<p>Corporate overview</p> <p>Keywords is the leading international creative and technical services provider to the global video games industry. Established in Dublin in 1998, it has more than 50 facilities in 20 countries strategically located in Asia, the Americas and Europe. Keywords provides integrated art creation, software engineering, testing, localisation, audio and customer care services across more than 50 languages and 16 games platforms to a blue-chip client base of approximately 650 clients across the globe.</p> <p>Keywords continues to build world-leading capabilities in services that video game and similar interactive content creators need. Keywords has a strong market position, providing services to 23 of the top 25 most prominent games companies, including Activision Blizzard, Bandai Namco, Bethesda, Electronic Arts, Konami, Riot Games, Sony, Square Enix, Supercell, TakeTwo, Epic Games and Ubisoft. Recent titles worked on include Uncharted 4: A Thief's End, Call of Duty: WWII, Mortal Combat X, Assassin's Creed Origins, Battlefield 1, League of Legends, Fortnite, Clash Royale and Rainbow Six Siege.</p>	<p>Dec 2018a</p> <p>Net cash: €0.4m</p> <p>Revenue: €251m</p> <p>EBITDA: €44.2m</p> <p>Net profit: €30.7m</p>	<p>Bull</p> <ul style="list-style-type: none"> ■ Leading global games services company ■ Works with all the major games publishers ■ Offers diversified exposure to the growth of the global games market ■ Strong management team with a proven track record of growth, both organic and M&A <p>Bear</p> <ul style="list-style-type: none"> ■ Will be affected by any slowdown in global growth ■ Model requires continuing availability of M&A opportunities at attractive prices

*Keywords Studios is an Edison client

Catalysts: Interim results September 2019

MAG Interactive

Company	Description	Key financials	Investment case
MAGI.ST SEK13.8 Mkt cap: US\$37m	<p>Corporate overview</p> <p>MAG Interactive is a leading developer and publisher of casual mobile games for a global audience. MAG Interactive reaches over 10 million active players every month and the game portfolio consists of 10 successful games with over 250m downloads, including successful titles Ruzzle, QuizDuel, Word Domination and WordBrain, all of which have reached number one spots on the App Store and Google Play. With offices located in Stockholm and Brighton, MAG Interactive's games are distributed through virtual app stores allowing for global reach with minimum effort.</p>	<p>Aug 2018a</p> <p>Net cash: SEK228m</p> <p>Revenue: SEK240m</p> <p>EBITDA: (SEK40m)</p> <p>Net loss: SEK58m</p>	<p>Bull</p> <ul style="list-style-type: none"> ■ Data-led approach to game optimisation ■ New strategic focus on multiplayer (75% of revenues) ■ Back catalogue continues to generate revenues – WordBrain, Ruzzle and QuizDuel all five years old <p>Bear</p> <ul style="list-style-type: none"> ■ Business disappointed post-IPO ■ Player base declining as a result of reduced marketing spend ■ KPIs (daily active users (DAUs), monthly active users (MAUs) and monthly unique payers (MUP)) on negative trend

Catalysts: FY results 23 October 2019

MTG (Modern Times Group)

Company	Description	Key financials	Investment case
MTGb.ST SEK90.0 Mkt cap: US\$632m	<p>Corporate overview</p> <p>MTG (Modern Times Group) is a strategic and operational investment holding company in eSports (DreamHack, ESL) and gaming entertainment (InnoGames, Kongregate). InnoGames achieved good growth in mobile sales, with more than half of Forge of Empires revenue coming from mobile for the first time. InnoGames also launched God Kings, a new mobile game that is showing strong initial results.</p> <p>The start of the turnaround in Kongregate drove an improvement in the revenue performance in gaming, compared to the sharp decline in the previous quarter, and the adjusted EBITDA margin also improved, reflecting Kongregate's focus on a smaller number of successful games.</p> <p>The world-leading eSports business returned to growth in the quarter, with both of ESL's Masters properties and DreamHack's e-FIFA leagues delivering record numbers of viewers and attracting a growing range of high-quality sponsors and media partners.</p>	<p>Dec 2018a</p> <p>Net cash: SEK1.8bn*</p> <p>Revenue: SEK4.03bn</p> <p>EBITDA: SEK41m</p> <p>Net loss: SEK346m</p> <p>*Approximate</p>	<p>Bull</p> <ul style="list-style-type: none"> ■ Balanced games (60%) and eSports (40%) offering ■ Market leader in eSports (ESL) ■ Potential takeover target? ■ Anticipates using net cash for M&A ■ Increasing % of owned and operated venues ■ Rough 50/50 split between browser and mobile ■ 94% of gaming revenues from in-app purchases ■ DAUs 2.7m, MAUs 12.3m on negative trend <p>Bear</p> <ul style="list-style-type: none"> ■ Top three gaming titles account for c 70%+ revenues ■ MTG and eSports currently loss-making ■ Kongregate gaming in turnaround ■ Short-term outlook uncertain

Catalysts: Q3 results 29 October 2019

Paradox Interactive			
Company	Description	Key financials	Investment case
PDXI.ST SEK151.1	Corporate overview Paradox Interactive is a medium sized games developer and publisher, focused exclusively on grand strategy, city building and RPG games. Its games portfolio includes more than 100 titles of which Paradox owns the key brands, including Stellaris, Europa Universalis, Hearts of Iron, Crusader Kings, Cities: Skylines, Prison Architect, Magicka, Age of Wonders and the World of Darkness catalogue of brands. Paradox games are developed primarily for PC and console platforms, but the company also releases games on mobile. The largest markets today include the US, UK, China, Germany, France, Russia and Scandinavia. Today, over three million gamers play a Paradox game each month and the number of registered users exceeds 10 million.	Dec 2018a Net cash: SEK327m Revenue: SEK1.1bn EBITDA: SEK592m Net profit: SEK359m	Bull <ul style="list-style-type: none"> Digitally focused business model Market leader in strategy/CitySim/RPG genres Substantial back catalogue 10m player community Sticky games with recurring revenues Balance between mobile, console and PC Recognises its niche Bear <ul style="list-style-type: none"> Margins/valuation challenging Continuing to invest in (risky) new IP Mixed reception for Imperator: Rome
Catalysts: Q2 results 13 August 2019, Q3 results 12 November 2019			
PlayWay			
Company	Description	Key financials	Investment case
PLWP.WA PLN180.2	Corporate overview PlayWay is a games developer and self-publisher offering c 60 premium and FTP new titles in 2019 across a range of platforms. The company tests new ideas with a community, through eg Facebook, to assess potential interest in a specific title. In our opinion, in a few years the company will have several franchises (ie 'Car Mechanic Simulator', '911 Operator', 'Gold Rush', House Flipper') that will be launched every two to three years. Development budgets remain modest and we do not expect significant increases in investment in the near future. Strong pipeline for 2019 with potential for sequels in the following years. The company plans to launch more than 30 PC titles this year. We highlight Uboat Junkyard Simulator, Cooking Simulator, Tank Mechanic Simulator. Moreover, we would watch closely Bum Simulator, Mr. Prepper, Diesel Brothers, Contraband Police, Gold Rush, Alaskan Truck Simulator and Drift 19, planned later in 2019.	Dec 2018a Net cash: PLN69.6m Revenue: PLN72.0m EBITDA: PLN50.1m Net profit: PLN35.4m	Bull <ul style="list-style-type: none"> Digitally focused business model Extensive data analysis and community-testing pre-launch Broad pipeline of new IP scheduled for 2019 Bear <ul style="list-style-type: none"> New studio with limited track record Investing heavily in new IP No back catalogue or recurring revenues
Catalysts: Interim results 30 September 2019, Q3 results 29 November 2019			
Rovio			
Company	Description	Key financials	Investment case
ROVIO:FH €6.70	Corporate overview Rovio Entertainment Corporation is a global, games-first entertainment company that creates, develops and publishes mobile games, which have been downloaded 4.5bn times so far. The company is best known for the global Angry Birds brand, which started as a popular mobile game in 2009, and has since evolved from games to various entertainment and consumer products in brand licensing. Today, the company offers multiple mobile games, animations and has produced The Angry Birds Movie, which opened number one in theatres in 50 countries, and the sequel to which is set for theatrical release in 2019. Rovio's headquarters are in Finland.	Dec 2018a Net cash: €120m Revenue: €281m EBITDA: €47.8m Net profit: €24.6m	Bull <ul style="list-style-type: none"> Market leader in mobile FTP space Global IP exploited across multiple channels Scale platform and community 7m DAU, 0.5m MUP Revenue visibility plus cash generation Actively considering M&A in FTP mobile games Bear <ul style="list-style-type: none"> Single, mature IP plus variants Limited scope for upside surprises A managed annuity proposition
Catalysts: H1 results 8 August 2019, Q3 results 30 October 2019			

Starbreeze			
Company	Description	Key financials	Investment case
STZEB.ST SEK1.6 Mkt cap: US\$55m	Corporate overview Starbreeze is an independent developer, creator, publisher and distributor of games for PC and console with a global market focus and studios in Stockholm, Barcelona, Paris, Bangalore and Dehradun. Centred around the successful PAYDAY brand, Starbreeze develops games based on its own and others' brands, both internally and in collaboration with external game developers. Starbreeze has been in reconstruction since December 2018 and is in a challenging financial situation. The company has decided to focus on its core business, game development and publishing. To be able to operate an efficient and profitable business in the long term, Starbreeze has decided to implement organisational changes. As of June 2019, Starbreeze group has 240 people employed, reducing to approximately 180 by November 2019.	Dec 2018a Net cash: SEK14.5m* Revenue: SEK350m EBITDA: (SEK10.3m) Net loss: SEK1.35bn *Cash is at end Q119	Bull <ul style="list-style-type: none"> Track record as leading developer and publisher Advanced VR capabilities Universal Games and Digital Platforms to publish the mobile game, PAYDAY: Crime War. Bear <ul style="list-style-type: none"> OVERKILL's The Walking Dead (OTWD) late, over-budget and subsequently cancelled Starbreeze in reconstruction since 3 Dec 2018 (period extended to 3 Sept 2019) Skybound terminated its licence for OTWD Publishing rights for System Shock 3 sold to OtherSide Entertainment Publishing rights to 10 Crowns sold to Mohawk Publishing rights to Pyschonauts 2 sold to Microsoft for \$13.2m Indian Art design studio, Dhruva, sold to Rockstar Games for \$7.9m
Catalysts: Q2 results 20 August 2019, Q3 results 5 November 2019			
Stillfront			
Company	Description	Key financials	Investment case
SFRG.ST SEK226 Mkt cap: US\$612m	Corporate overview A global group of gaming studios in the FTP online strategy games genre, which aims to be the leading group of indie game developers and publishers. A diverse and evolving game portfolio with two common themes: loyal users and long lifecycle games. 5.9m MAUs and 1.4m DAUs. Main markets by revenue are the US, Germany, MENA, France and Poland. Its headquarters are in Stockholm, with a group of 12 studios operating in Bulgaria, Germany, Jordan, Malta, Romania, Sweden and the US, with a total of 600 professionals. Acquired Kixeye in June 2019, a Canadian FTP game developer providing 30% growth in revenues and EBITDA. IPs: Battle Pirates, War Commander, Vega Conflict and War Commander: Rogue Assault.	Dec 2018a Net debt: SEK342m Revenue: SEK1.32bn EBITDA: SEK473m Net profit: SEK256m Free float: 73% Q1 pro forma Revenue: SEK547m EBITDA: SEK205m	Bull <ul style="list-style-type: none"> Leading data-centric FTP games developer Two core IPs Empire (38%) and Big (19%) Proven M&A track record Acquired Kixeye in June 2019 for \$90m +\$30m earnout IPs: Battle Pirates, War Commander, Vega Conflict and War Commander: Rogue Assault Bear <ul style="list-style-type: none"> Debt-funded FTP casual games business Broad portfolio, but reliant on two core IPs SEK500m placing expected in next 12 months to refinance SEK500m bonds finance for Kixeye
Catalysts: Interim results 15 August 2019, Q3 results 8 November 2019			
Sumo Group			
Company	Description	Key financials	Investment case
SUMO.LN 157p Mkt cap: US\$287m	Corporate overview Sumo Group is a provider of creative and development services to the video games and entertainment industries. Sumo is one of the UK's largest independent developers of AAA-rated video games, with studios in Sheffield, Newcastle, Nottingham and Pune in India. The business has acquired two studios since IPO, The Chinese Room in Brighton and Red Kite in Huddersfield. Atomhawk, acquired in June 2017, is a multi-award-winning visual design company, with studios in Newcastle and Vancouver (Canada), servicing the games, film and visual effects industries. The group delivers turnkey and co-development services to global blue-chip clients, including full-service visual and development solutions, initial concepts and pre-production, production and development, and post-release support. Latest development projects include Hitman 2 (Warner 2018), Crackdown 3 (Microsoft 2019), Mortal Kombat 11 (Warner 2019) and Team Sonic Racing (Sega 2019). Projects are underway with Apple Arcade (Little Orpheus and Spyder) and Microsoft including new Xbox hardware and game streaming.	Dec 2018a Net cash: £3.7m Revenue: £38.9m EBITDA: £10.4m Net loss: £0.7m	Bull <ul style="list-style-type: none"> Provider of creative and development services Blue-chip client base Safe and steady model with profit 'locked-in' whether releases are 'hits' or not 12-18m visibility over future revenue pipeline IP ownership an increasing focus Organic growth supplemented by M&A Bear <ul style="list-style-type: none"> Cost plus people business employing c 650 staff Challenge to recruit skilled staff, particularly in light of Brexit Last major UK WFH developer - in downturn, may face difficult decision to take on marginal projects or lay off staff Overhang from residual Perwyn stake Significant exposure to VGTR
Catalysts: Interim results mid-late September 2019			

Team17

Company	Description	Key financials	Investment case
TM17.LN 278.5p Mkt cap: US\$444m	<p>Corporate overview</p> <p>Team17 is a leading video games label and creative partner for independent ('indie') developers. The group supports both owned first-party IP and third-party IP – through partnering with indie developers globally – in the development and publishing of games across multiple platforms typically for a fixed revenue share. The group focuses on premium, rather than FTP games, and its portfolio comprises over 90 games, including the iconic and well-established Worms franchise, as well as Overcooked and The Escapists. Established in 1990, Team17 collaborates with fellow developers around the globe sharing its expertise from creation to launch across PC, console and mobile devices. 88% of the group's revenues are generated from digital sales, which facilitates a high level of control over pricing and game lifecycle management, with minimal additional development costs post launch. Due to the group's diverse portfolio of owned and third-party IP, coupled with its approach to lifecycle management, revenue from titles released in previous years accounted for c 50% of 2018 revenue.</p>	<p>Dec 2018a</p> <p>Net cash: £23.5m</p> <p>Revenue: £43.2m</p> <p>EBITDA: £15.3m</p> <p>Net profit: £7.2m</p>	<p>Bull</p> <ul style="list-style-type: none"> ■ Broad-based publisher of owned and 3rd-party IP ■ 12 launches in 2018 – seven new IP, four ports, one sequel ■ Digitally focused business model ■ Recurring revenue model, extensive back catalogue ■ Marginal exposure to VGTR ■ Considering M&A opportunities to acquire IP <p>Bear</p> <ul style="list-style-type: none"> ■ Narrow portfolio of key titles ■ No major AAA IP ■ Minor overhang from residual LDC stake ■ Crowded market segment

Catalysts: Interim results September 2019

Ten Square

Company	Description	Key financials	Investment case
TENP.WA PLN123 Mkt cap: US\$229m	<p>Corporate overview</p> <p>Ten Square Games engages in the mobile games development business worldwide. It offers FTP games through social platforms and a network of partner sites, as well as on Google Play, App Store and Microsoft Store. Ten Square Games specialises in hobby games. It produces and releases FTP games, earning money on micro-payments (in-game payments) and advertising. Games produced by Ten Square Games are offered on iOS and Android, as well as through internet portals. Ten Square Games has created more than 200 games to date. The best-known projects are Let's Fish and Fishing Clash – currently the most popular fishing game in the world. The company was founded in 2011, has 180 employees and is based in Wrocław, Poland.</p>	<p>Dec 2018a</p> <p>Net cash: PLN39.8m</p> <p>Revenue: PLN115.3m</p> <p>EBITDA: PLN45.0m</p> <p>Net profit: PLN36.5m</p>	<p>Bull</p> <ul style="list-style-type: none"> ■ Leading global developer of hobby games ■ Specialist in FTP mobile and casual titles ■ 90% of revenues from outside Poland ■ Focuses on developing games with longevity ■ IP owner: Let's Fish, Fishing Clash, Wild Hunt <p>Bear</p> <ul style="list-style-type: none"> ■ Narrowly based portfolio ■ Fishing Clash 81% of Q418 revenue ■ Investing to expand portfolio – MiniGolf, Hobby game (2019) + 2 new female-focused IPs (2020)

Catalysts: Interim results 28 August 2019, Q3 results 26 November 2019

THQ Nordic

Company	Description	Key financials	Investment case
THQNB.ST SEK224 Mkt cap: US\$2.17bn	<p>Corporate overview</p> <p>THQ Nordic acquires, develops and publishes PC and console games for the global games market. The company has an extensive catalogue of over 100 owned franchises (much of which was acquired from THQ Inc's insolvency in 2013), such as Saints Row, Goat Simulator, Dead Island, Darksiders, Metro (exclusive licence), Titan Quest, MX vs ATV, Kingdoms of Amalur, Time Splitters, Delta Force, Alone in the Dark, Wreckfest, among others. Its core business model consists of acquiring established gaming brands and gradually improving them. THQ Nordic has a global presence, with its group head office located in Karlstad, Sweden, and with three divisions: Deep Silver/Koch Media, THQ Nordic and Coffee Stain. The company acquired Koch Media in 2018, which focuses on game development and expanded THQ's publishing business. The group has 15 internal game development studios based in Germany, Finland, UK, US and Sweden, and employs about 2,000 people.</p>	<p>Mar 2019a</p> <p>Net cash: SEK2.1bn</p> <p>Revenue: SEK5.1bn</p> <p>EBITDA: SEK1.4bn</p> <p>Net profit: SEK0.6bn</p> <p>Free float: 50%</p>	<p>Bull</p> <ul style="list-style-type: none"> ■ Aspiring to become a major global publisher ■ Broad portfolio of owned and third-party IP ■ Substantial IP portfolio (but under-utilised?) ■ M&A a major part of the strategy – looking to turn around under-invested IP ■ High-quality shareholder register <p>Bear</p> <ul style="list-style-type: none"> ■ Relatively narrow portfolio of AAA titles ■ Substantial distribution business (Koch Media) ■ Complex structure/cost duplication ■ Capital-constrained given scale of ambition

Catalysts: Q1 results 14 August 2019, H1 results 14 November 2019

Ubisoft			
Company	Description	Key financials	Investment case
UBIP.PA €73.20 Mkt cap: US\$9.15bn	<p>Corporate overview</p> <p>Ubisoft is a leading creator, publisher and distributor of interactive entertainment and services, with a rich portfolio of world-renowned brands, including Assassin's Creed, Far Cry, For Honor, Just Dance, Watch Dogs, Tom Clancy's video game series including Ghost Recon, Rainbow Six and The Division.</p> <p>Ubisoft stands out from its competitors due to its ability to develop new IP organically. The group benefits from a portfolio of strong franchises geared to player commitment over the long term.</p> <p>Ubisoft owns its brands along with the technologies to develop them, offering long-term visibility on the company's growth. Owning its own brands is an essential advantage when it comes to maximising their potential and reaching an ever-wider audience.</p> <p>Ubisoft has succeeded in transforming its business model to focus on a more profitable and recurring digital business. Player communities have grown significantly as has engagement. This has fed into a rise in back catalogue sales and player recurring investment.</p>	<p>March 2019a</p> <p>Net debt: €548m</p> <p>Revenue: €1.85bn</p> <p>(69% digital – of which 32% recurring)</p> <p>EBITDA: €976m</p> <p>Net profit: €139m</p>	<p>Bull</p> <ul style="list-style-type: none"> ■ Leading global publisher ■ Diversified portfolio of proven AAA IP ■ Embraced the digitalisation of content (streaming/subscription/eSports strategies) ■ Track record of innovation ■ Strong mobile offering ■ Launched streaming solution uPlay at E3 <p>Bear</p> <ul style="list-style-type: none"> ■ Broad footprint – generalist not specialist ■ Relatively small as a global video games publisher ■ Relatively weak Asian presence
Catalysts: Interim results October 2019			

Source: Company websites, Refinitiv data, Edison Investment Research. Note: Prices as at 5 August 2019.

Appendix 1

Exhibit 22: Game genres/categorisation (with example titles and video links)

Action/adventure

Assassin's Creed, Tomb Raider, God of War



eSports (competitive gaming)

League of Legends, Overwatch, Counter-Strike, Starcraft



First person shooters (FPS)

Fortnite, Overwatch, Call of Duty 4, Battlefield V



Indie

(lower budget titles published by independent developers)

Worms, The Escapists 2, Overcooked, Cave Story, Inside, Limbo



Massively multiplayer online (MMO)

World of Warcraft, The Elder Scrolls Online, Final Fantasy XIV, RuneScape



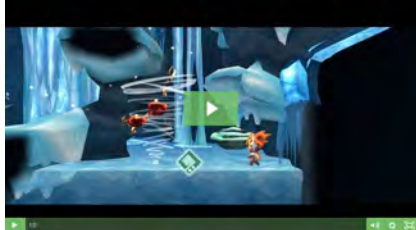
Open World/Sandbox (freedom to roam, and interact with, the virtual world)

Elite Dangerous, Red Dead Redemption 2, Hitman 2, EVE Online, Minecraft, Grand Theft Auto



Platform

LostWinds, Donkey Kong, Super Meat Boy, Planet Alpha



Puzzle

Candy Crush, Tetris, Pac-Man, Snake Pass, Angry Birds



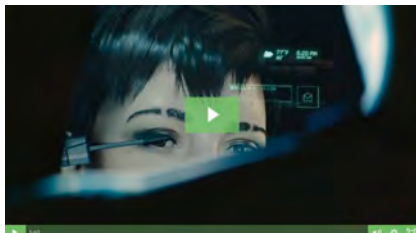
Racing

F1 2018; Super Mario-Kart, Onrush, Forza Motorsport, Team Sonic Racing



Role-playing games (RPG)

The Witcher, Pillars of Eternity 2, Tyranny



Real time strategy (RTS)

Total War, Starcraft, Age of Empires, Stronghold, Hearts of Iron IV



Simulation (Sim)

Planet Coaster, Jurassic World Evolution, The Sims, Flight Sim



Sports

FIFA 19, Madden 19, Football Manager 2019



Virtual/augmented reality (VR/AR)

Fruity Shooty, Pokemon GO, Beat Saber, Transference, Phantom: Covert Ops



Casual/mobile

Big Farm, Top Drives, Swords and Souls, Angry Birds



Source: Edison Investment Research, corporate websites

Appendix 2

Exhibit 23: Major games events over the next 12 months

20–24 August 2019 Cologne, Germany	Gamescom 2019 The biggest B2B video games show in the world, and also the biggest consumer games show on the planet. Featuring big games and hundreds of companies of all different sizes. gamescom.global/
17–20 October 2019 ExCel Centre, London	EGX EGX returns to London after four years in Birmingham. The leading consumer show will feature all the biggest games coming to market, plus a series of industry events. www.egx.net/egx
24–26 October 2019 Abu Dhabi National Exhibition Center, Abu Dhabi, UAE	Middle East Games Con Middle East Games Con will return for its third edition, after doubling in size in just two years, with 18,000 visitors and 30 speakers. 2019 will bring the consumer, B2B and conferences all under one roof for three days in the capital of the United Arab Emirates. https://me-gamescon.com/en/homepage.html
March 2020 San Francisco, US	Game Developers Conference (GDC) The world's largest professional games industry event. GDC brings together 28,000 attendees to exchange ideas and shape the future of the industry with five days of education, inspiration, and networking at the Moscone Convention Center in SF. Attendees include programmers, artists, producers, game designers, audio professionals, business decision-makers and others involved in the development of interactive games and immersive experiences. https://gdconf.com
April 2020 London, United Kingdom	London Games Festival A city-wide celebration of video games, encompassing a myriad of events such as the LGF Hub, Now Play This and Ensemble exhibitions, Games Finance Markets and a games character cosplay parade games.london
May 2020 Queen Elizabeth II Centre, London	Casual Connect Europe Learn from over 100 leaders in established and emerging markets of the games industry – covering game design, eSports, social casino, funding, next-generation technology and best practices. europe.casualconnect.org/
June 2020 Los Angeles, California	E3 Expo The world's biggest video games event returns to LA. Expect big announcements from the likes of EA, Nintendo and Xbox, plus the chance to play the next generation of major titles. https://e3expo.com/
July 2020 Brighton, UK	Develop: Brighton Develop: Brighton has been bringing together the European Game Dev community from global superstars to micro indies since 2006. Hear from the industry's leading lights, get up-to-date with the latest tools, techniques and industry trends, plus network with over 2,000 game dev professionals. https://developconference.com/

Source: Edison Investment Research, corporate websites

General disclaimer and copyright

This report has been prepared and issued by Edison. Edison Investment Research standard fees are £49,500 pa for the production and broad dissemination of a detailed note (Outlook) following by regular (typically quarterly) update notes. Fees are paid upfront in cash without recourse. Edison may seek additional fees for the provision of roadshows and related IR services for the client but does not get remunerated for any investment banking services. We never take payment in stock, options or warrants for any of our services.

Accuracy of content: All information used in the publication of this report has been compiled from publicly available sources that are believed to be reliable, however we do not guarantee the accuracy or completeness of this report and have not sought for this information to be independently verified. Opinions contained in this report represent those of the research department of Edison at the time of publication. Forward-looking information or statements in this report contain information that is based on assumptions, forecasts of future results, estimates of amounts not yet determinable, and therefore involve known and unknown risks, uncertainties and other factors which may cause the actual results, performance or achievements of their subject matter to be materially different from current expectations.

Exclusion of Liability: To the fullest extent allowed by law, Edison shall not be liable for any direct, indirect or consequential losses, loss of profits, damages, costs or expenses incurred or suffered by you arising out of or in connection with the access to, use of or reliance on any information contained on this note.

No personalised advice: The information that we provide should not be construed in any manner whatsoever as, personalised advice. Also, the information provided by us should not be construed by any subscriber or prospective subscriber as Edison's solicitation to effect, or attempt to effect, any transaction in a security. The securities described in the report may not be eligible for sale in all jurisdictions or to certain categories of investors.

Investment in securities mentioned: Edison has a restrictive policy relating to personal dealing and conflicts of interest. Edison Group does not conduct any investment business and, accordingly, does not itself hold any positions in the securities mentioned in this report. However, the respective directors, officers, employees and contractors of Edison may have a position in any or related securities mentioned in this report, subject to Edison's policies on personal dealing and conflicts of interest.

Copyright: Copyright 2019 Edison Investment Research Limited (Edison). All rights reserved FTSE International Limited ("FTSE") © FTSE 2019. "FTSE®" is a trade mark of the London Stock Exchange Group companies and is used by FTSE International Limited under license. All rights in the FTSE indices and/or FTSE ratings vest in FTSE and/or its licensors. Neither FTSE nor its licensors accept any liability for any errors or omissions in the FTSE indices and/or FTSE ratings or underlying data. No further distribution of FTSE Data is permitted without FTSE's express written consent.

Australia

Edison Investment Research Pty Ltd (Edison AU) is the Australian subsidiary of Edison. Edison AU is a Corporate Authorised Representative (1252501) of Crown Wealth Group Pty Ltd who holds an Australian Financial Services Licence (Number: 494274). This research is issued in Australia by Edison AU and any access to it, is intended only for "wholesale clients" within the meaning of the Corporations Act 2001 of Australia. Any advice given by Edison AU is general advice only and does not take into account your personal circumstances, needs or objectives. You should, before acting on this advice, consider the appropriateness of the advice, having regard to your objectives, financial situation and needs. If our advice relates to the acquisition, or possible acquisition, of a particular financial product you should read any relevant Product Disclosure Statement or like instrument.

New Zealand

The research in this document is intended for New Zealand resident professional financial advisers or brokers (for use in their roles as financial advisers or brokers) and habitual investors who are "wholesale clients" for the purpose of the Financial Advisers Act 2008 (FAA) (as described in sections 5(c) (1)(a), (b) and (c) of the FAA). This is not a solicitation or inducement to buy, sell, subscribe, or underwrite any securities mentioned or in the topic of this document. For the purpose of the FAA, the content of this report is of a general nature, is intended as a source of general information only and is not intended to constitute a recommendation or opinion in relation to acquiring or disposing (including refraining from acquiring or disposing) of securities. The distribution of this document is not a "personalised service" and, to the extent that it contains any financial advice, is intended only as a "class service" provided by Edison within the meaning of the FAA (i.e. without taking into account the particular financial situation or goals of any person). As such, it should not be relied upon in making an investment decision.

United Kingdom

This document is prepared and provided by Edison for information purposes only and should not be construed as an offer or solicitation for investment in any securities mentioned or in the topic of this document. A marketing communication under FCA Rules, this document has not been prepared in accordance with the legal requirements designed to promote the independence of investment research and is not subject to any prohibition on dealing ahead of the dissemination of investment research.

This Communication is being distributed in the United Kingdom and is directed only at (i) persons having professional experience in matters relating to investments, i.e. investment professionals within the meaning of Article 19(5) of the Financial Services and Markets Act 2000 (Financial Promotion) Order 2005, as amended (the "FPO") (ii) high net-worth companies, unincorporated associations or other bodies within the meaning of Article 49 of the FPO and (iii) persons to whom it is otherwise lawful to distribute it. The investment or investment activity to which this document relates is available only to such persons. It is not intended that this document be distributed or passed on, directly or indirectly, to any other class of persons and in any event and under no circumstances should persons of any other description rely on or act upon the contents of this document.

This Communication is being supplied to you solely for your information and may not be reproduced by, further distributed to or published in whole or in part by, any other person.

United States

The Investment Research is a publication distributed in the United States by Edison Investment Research, Inc. Edison Investment Research, Inc. is registered as an investment adviser with the Securities and Exchange Commission. Edison relies upon the "publishers' exclusion" from the definition of investment adviser under Section 202(a)(11) of the Investment Advisers Act of 1940 and corresponding state securities laws. This report is a bona fide publication of general and regular circulation offering impersonal investment-related advice, not tailored to a specific investment portfolio or the needs of current and/or prospective subscribers. As such, Edison does not offer or provide personal advice and the research provided is for informational purposes only. No mention of a particular security in this report constitutes a recommendation to buy, sell or hold that or any security, or that any particular security, portfolio of securities, transaction or investment strategy is suitable for any specific person.

Frankfurt +49 (0)69 78 8076 960
Schumannstrasse 34b
60325 Frankfurt
Germany

London +44 (0)20 3077 5700
280 High Holborn
London, WC1V 7EE
United Kingdom

New York +1 646 653 7026
1,185 Avenue of the Americas
3rd Floor, New York, NY 10036
United States of America

Sydney +61 (0)2 8249 8342
Level 4, Office 1205
95 Pitt Street, Sydney
NSW 2000, Australia

Frankfurt +49 (0)69 78 8076960
Schumannstrasse 34b
60325 Frankfurt
Germany

London +44 (0)20 3077 5700
280 High Holborn
London, WC1V 7EE
United Kingdom

New York +1 646 653 7026
1,185 Avenue of the Americas,
3rd Floor, New York, NY 10036
United States of America

Sydney +61 (0)2 8249 8342
Level 4, Office 1205, 95 Pitt St,
Sydney NSW 2000
Australia

Edison Investment Research Limited is registered in England. Registered office: 280 High Holborn, London, WC1V 7EE. Company number 4794244. www.edisongroup.com