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**Electronic Arts: Equity Valuation**

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## **Abstract**

The following master thesis was elaborated by David Cardoso under the orientation of professor Dr. José Carlos Tudela Martins. The master thesis has as its main objective the valuation of Electronic Arts, a US based gaming/entertainment company. The Company was founded back in 1982 and since then has been operating in the mentioned sector namely by making game software for platforms such as personal computers, consoles and more recently smartphones. The Company has been enjoying success through its game franchises mainly in the sports category.

The valuation process was made through two methods: Discounted Cash flows and Multiple relative valuation. In the DCF method, the Company's future cash flows are estimated and discounted to present day. All those cash flows are then summed and yield the Enterprise value. The next procedure would be to add the cash in the balance sheet and subtract the Company's debt to yield the Equity value. If the Equity value is divided by the number of shares outstanding which will result in the estimated value per share. In the Multiples relative valuation process, the financials of similar companies are used to make a comparison between what those companies are valued and what the Company should be valued.

Finally, after doing both processes a final recommendation of buying and/or holding the Company.

## **Abstract (em português)**

A seguinte tese de mestrado foi elaborada por David Cardoso sob a orientação do professor Dr. José Carlos Tudela Martins. O objetivo da tese é a avaliação do valor da empresa – Electronic Arts, uma empresa dos EUA que opera na indústria de jogos. A Empresa foi fundada em 1982 e desde aí tem operado no sector mencionado, fazendo *software* de jogos para computadores pessoais, consolas e mais recentemente *smartphones*. A EA tem tido bastante sucesso no seu negócio, nomeadamente na produção de jogos desportivos.

O processo de avaliação foi feito através de dois métodos: *Discounted Cash Flows* e *Multiple relative valuation*. No primeiro método, os potenciais ganhos futuros da Empresa são estimados e subsequentemente descontados para o seu valor no presente com o objetivo de os somar e obter o valor total da Empresa. De seguida adiciona-se o dinheiro em caixa e subtrai-se a dívida da Empresa, obtendo assim o valor dos Capitais Próprios da Empresa. Se dividirmos este último valor pelo número total de ações disponíveis chegaremos ao valor por ação. No Segundo método descrito, usam-se os valores de empresas parecidas à Electronic Arts com o objetivo de deprender qual será o valor da Empresa tendo em conta o valor de mercado das empresas que são parecidas.

Finalmente, após fazer ambos os processos, a recomendação final é a de comprar e/ou manter ações da Empresa.

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## **Preface**

The following master thesis was made due to the fact that I have a deep personal interest in understanding how the stock market works. In addition, before doing this master thesis and during finance classes I found deeply interesting that it was possible to obtain an estimation of a company's future value through its past financial information.

Ever since I discovered/learned that this was possible it became a goal for me to understand how valuation of companies works for both personal investing use and to pursue a career in valuing investments.

## **What is valuation?**

There is a fundamental problem in our everyday life. Sometimes we do not even realise it however it is ever present in our lives. That issue is that we have to constantly engage in transactions with other people. And with the transaction comes a price and subsequently, a valuation. We do it so many times and so naturally, that we start to even knowing we a product feels too expensive or whether it is cheap.

Whether it is to buy groceries or other stuff we implicitly accept other person's valuation of a given product and we pay for it. That is essentially what valuation is all about. When we think of groceries, it seems natural to us that we should pay the price that comes on the price tag and that's essentially it, it is easier because someone else has already figured out the value of the given product. The only choice we have is either we accept the price or we do not and we go buy it elsewhere or we buy a substitute with a price that we accept.

However, if the thing we want to buy is a company, we face a whole different issue. It does not feel like a natural "thing" to buy and for that reason maybe we do not know, intrinsically how much we should pay for it. Whether a person wants to invest and buy a company or a different company wants to buy another company, the problem will be essentially the same.

How much should we pay for it?

That is where, this valuation thing comes in handy. It helps us understand what would be a reasonable price for the thing we want to acquire. Valuation is a helpful tool that helps us make rational acquisitions, if done just right and consistently.

Furthermore, Valuation can be done either by estimating the intrinsic value of the company by projecting the company's future cash flows and discounting them at a discount rate or it can be done by market multiples – we find a comparable company and compare it to our target company, that is, if the comparable company is being valued by the market at a given value, we can divide that value by the company's financials, say it's EBITDA, and then we can apply that multiple to our target company's EBITDA and obtain its value.

**The process** consists of picking a given company, analyse it's industry, in order to better understand it's business and cycle, dive into the company's annual report and analyse the information it provides, extracting the company's financials and applying each chosen method which in the end will yield a value.

In this dissertation, a company named Electronic Arts will be valued using the Discounted Cash Flow method with FCFE and FCFE, the Adjusted Present Value method and EV/EBITDA trailing and present multiple, so that the difference between both multiples and the derived value can be analysed. There will also be a valuation of the parts of the company.

**The limitations** to these methods are that, these are always subject to assumptions that can always turn out be wrong. As Aswath Damodaran (2011:7) put it, saying that most of the times valuations will be biased due to the fact that most of the valuations do not start on a “blank slate” and hence the person doing the valuation already has an opinion on the company to be valued. So, to try to mitigate this issue, I will value the company in several methods and also will apply three different scenarios, a base-case, an upside and a downside case.

### **Pricing vs Valuation**

There are two fundamental ways to set the price of a potential transaction when it comes to the value of a company. On one hand, we have **Pricing** which would be the market value of a given company, this will be obtained through comparison with the market values of similar companies. On the other hand, there is **Valuation** which would be the intrinsic value of a given company, this would be obtained by computing the present value of the future cash flows of the company. As said by Aswath Damodaran, calling Pricing as Relative valuation and Valuation as Intrinsic valuation (2011:4-5).

“Valuation of a firm or project hinges on measurement of two basic parameters; assessment of future cash flows and finding out a discount rate that reflects risk involved in the cash flow estimate.” (S.K. Mitra, 2010:1).

### **Literature review**

#### **Intrinsic valuation**

The basic idea for the intrinsic valuation is that the present values of the cash flows that will be generated by the company in the future will yield the intrinsic value of the company. The intrinsic valuation of the company consists in analysing the company’s past-present historical performance and after normalizing the relevant cash flows, projecting them under different assumptions and applying the different methodologies.

If the intrinsic value yielded by the model used is larger than the actual market value of the company, then the model would imply that the stock is undervalued. If the model yields a lower value it implies that the company is overvalued.

### **Dividend discount model**

Under this model we assume that the value of the company's equity is equal to the dividends that the company will distribute in the future, discounted to present value. This would be obtainable by using a perpetuity formula.

The main issue with this method is that some companies do not distribute dividends and also that the growth rate of the dividends is not easily predictable.

### **Discounted Cash Flows Model**

The DCF model is the most commonly used methodology of intrinsic value. Although not being perfect it is the most simple, versatile model and also the mostly used. The basic idea behind it is, to project the cash flows of the company and then discounting them to the present value to reach a value for the company.

It can be done through FCFF ( $FCFF = EBIT (1-T) - CAPEX - \text{changes in WC} + DEPRECIATION$ ) or FCFE ( $FCFE = \text{Net income} + DEPRECIATION - CAPEX - \text{changes in WC} + \text{NET BORROWING}$ ) or  $FCFE = FCFF + \text{NET BORROWING} - \text{Interest} * (1-T)$

If using FCFF, after reaching the value for each year, the cash flows should be discounted by a WACC rate and when all summed would yield the company's value. The EV would then be added cash and subtracted the financial debt. This way we would get the equity value of the company.

If using FCFE, after having done the computations for the FCFE for each year, the cash flows should be discounted by the cost of equity and then summed to yield the Equity value of the stock, then it would only be necessary to add the cash.

The DCF, although not being perfect, remains the most used and most accepted methodology to use in valuations of companies.

### **Economic added value**

EVA is the estimation of the company's economic profit. It is the value that is created that exceeds the shareholder's required minimum return (ROIC).

$EVA = \text{NOPAT} - \text{WACC} * (\text{Total Assets} - \text{Current Liabilities})$

It ends up having the same issues as DCF as it is a derivation of the DCF method.

### **Adjusted present value**

The adjusted present value approach values the company in two separate procedures. The company as an all equity funded project plus the tax shield the company can obtain. It has a

similar approach as the DCF, it is necessary that the future cash flows are projected and discounted and finally, all summed. However these would be discounted by the KE instead of the WACC. Then, the tax shield benefits are also calculated separately.

The difference between APV and DCF is that DCF values the value of the equity and debt as a whole through the WACC rate and the APV values equity and debt separately.

The tax shield can be obtained by  $\text{Tax shield} = \text{KD} * \text{Tax rate}$

### **Adjusted Net Asset**

The mentioned method changes the book values of a company's assets and liabilities so that their estimated current fair market is better accounted for.

The method includes tangible and intangible assets as well as off-balance sheet assets or liabilities such as leases.

According to Sean Saari, the method is mostly appropriated when valuing a holding or capital-intensive company, the business is continually generating losses and valuation methodologies indicate a lower value than its adjusted net asset value.

### **Relative methods**

The relative methods are essentially comparing the company's value to the market value of similar companies. Either by comparing with multiples used in previous transactions or by comparing with current implied trading multiples of quoted companies. There can be two types of multiples.

Equity based multiples, for example, the P/E multiple, that is obtained by dividing the market value of the equity of a company divided by the company's earnings.

Enterprise value based multiples, for example, the EV/EBITDA multiple, that is obtained by dividing the value of the company as a whole divided by the company's EBITDA.

Also, the multiples can be forward looking or historical based. The forward looking multiple will be based on projected cash flows of the company (usually one or two year projections). The historic based multiples are based of the historical cash flows of the company.

The process of pricing would be the multiplication of the company cash flow, such as its EBITDA, by the multiple to be used.

### **Comparable sector multiples**

As previously said, these multiples are averages of the comparable company's multiples. For example, we would compare the financials of the companies that are similar to EA, let's say the EV/EBITDA multiple of EA's sector is x. If EA's EBITDA is y, the enterprise value of EA would be  $x * y$ .

### **Precedent transaction multiples**

In this case the multiple would be the multiple last used in a transaction of a comparable company or a company that operates on the sector of EA. The process would be the same as in the previous case.

### **Which methods and why**

#### **Discounted Cash Flow**

The DCF method is the most widely accepted method because it is one of the most flawless and easy to use methods. It is not affected by short-term market conditions nor by its expectations and it is based on the company's financials. However, it is sensible to the assumptions made.

#### **Enterprise Value forward multiples**

The multiples used should be forward looking multiples rather than historical based multiples, due to the fact that the forward-looking multiples have proven to be more accurate than the historical based multiples.

“Both the principles of valuation and the empirical evidence lead us to recommend that multiples be based on forecast rather than historical profits. If no reliable forecasts are available and you must rely of historical data, make sure to use the latest date possible” (M. Goedhart, T. Koller and D. Wessels, 2005:9)

The multiples should also be EV multiples as these are not influenced by capital structure and these multiples are not influenced by non-operational flows, so these multiples would be the most indicative of the company's value.

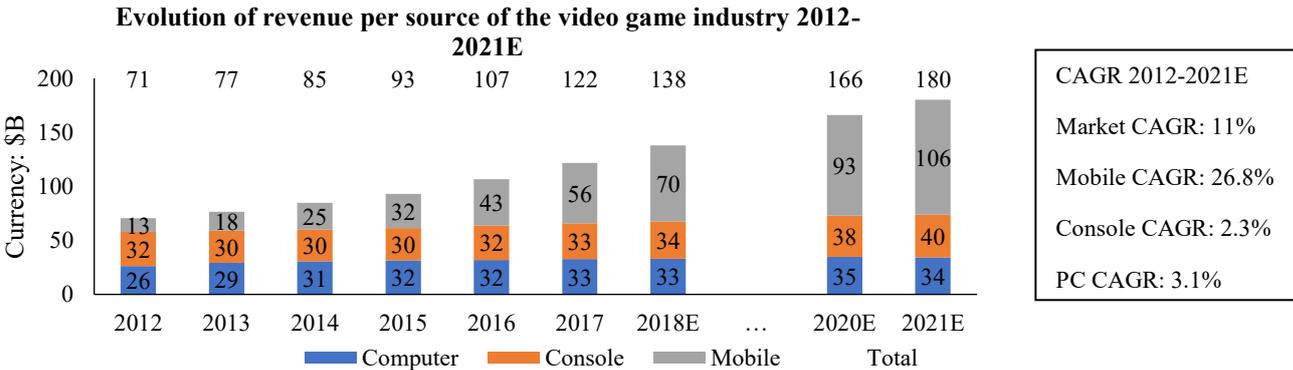
“In general, this ratio is less susceptible to manipulation by changes in capital structure. Since enterprise value includes both debt and equity, and EBITA is the profit available to investors, a change in capital structure will have no systematic effect. Only when such a change lowers the cost of capital will changes lead to a higher multiple. Even so, don't forget that enterprise-value-to-EBITA multiples still depend on ROIC and growth” The right role for multiples in valuation” (M. Goedhart, T. Koller and D. Wessels, 2005:10).

The multiples are only useful if they compare similar companies that function in a similar way, are in a similar cycle. Or else the multiple comparison will not only be inconclusive but potentially will lead to a potentially inadequate valuation.

“Finding the right companies for the comparable set is challenging indeed. [...] Not until you have that expertise will a company’s multiple appear in the appropriate context with other companies. In the end you will have a more appropriate peer group, which may be as small as one” (M. Goedhart, T. Koller and D. Wessels, 2005:8-9).

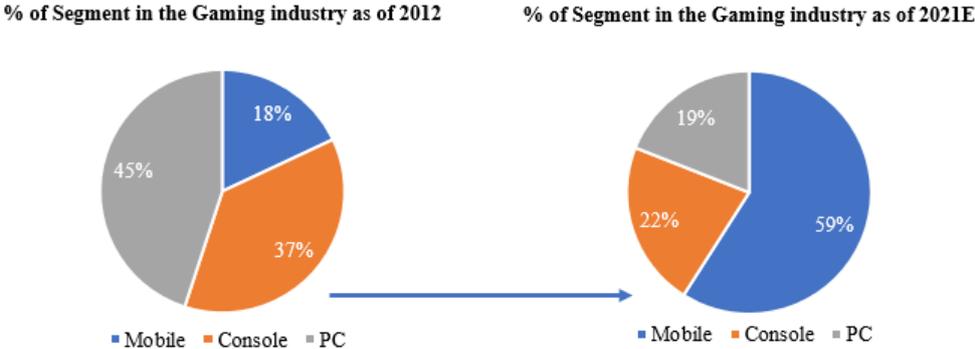
**Industry Overview**

Below is presented a graph that explores the evolution of the Gaming market since 2012 till 2021E. The below graph is the result of a Newzoo (a gaming market research specialist) as a study of the market and its overall.



Source: Newzoo annual games market updates, 2012-2021

According to Newzoo, a company specialized in the study of the global video games market, Mobile games revenues were 18% of the total market in 2012 whereas in 2021E, these are expected to amount to 59% of the total market. As opposite to the Computer games, which accounted for 45% of the market in 2012 and are expected to be 19% in 2020.

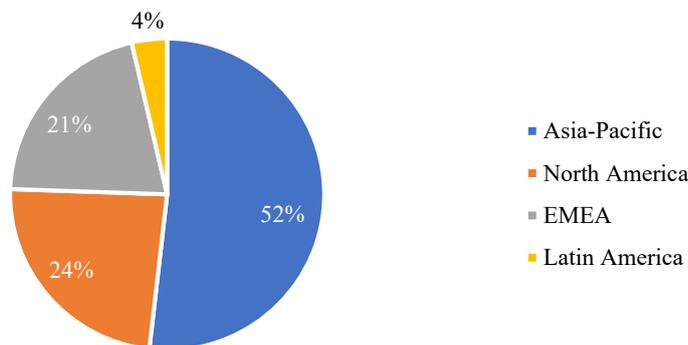


Source: Newzoo annual games market updates, 2012-2021

The CAGR of the Mobile for the mentioned period is 26.8%, PC is 3.1% and Console is 2.3%. The Video games market CAGR is of 11% for the mentioned timeframe.

When we look at the Video game market from a global perspective of the expected revenue in 2018, 52% of the money spent on this industry is coming from Asia, a 16.8% increase from 2017, where China and Japan, are the 1<sup>st</sup> and 3<sup>rd</sup> largest markets respectively. China alone accounts for \$37.9B of the total market, a whopping 28% overall. North America accounts for 24% of the market, which grew 10% from 2017 and the 2<sup>nd</sup> largest market is the US, a \$30.4B market. The EMEA accounts for 21% of the market and grew 8.8% since 2017 and Latin America accounts for 4% and grew 13.5%.

**Video game market size per geography as of 2018E**



Source: Newzoo, April 2018 Quarterly Global games market report

## Industry Characteristics

### Trends

The distribution in the Video game industry has been undergoing a dramatic change, whereas in the past, games were bought at a store and were disks that would be introduced in the PC or the console and then played, now, the digital download is available, that is, the player can download the game in his PC, Console or mobile and start playing, reducing cost of sales and distribution costs of the game companies, hence, increasing their operating margin. **Higher margins.**

eSports have been gaining notoriety for the last few years. Companies have been creating leagues and tournaments that can be watched live and on streams and its popularity has been increasing vertiginously. It is expected to be a \$906M market in 2018 with 335M fans and its audience is projected to grow to 557M by 2021, and the market is expected to grow to \$1.4B

in 2020, according with Newzoo. On average only 30% of gamers have admitted that they follow eSports monthly, so there is a lot of room to grow as per UBS survey.

Gaming subscription services are also becoming a trend in the video game industry, as companies push their own services to gamers, these services include previews at new games and other perks. **More revenue and less seasonality.**

In addition to this trend, the Video game market profile has also been changing, that is, from a one-hit \$50-80 disk sale, to a \$50-80 download/disk plus in-game microtransactions and game packs that may include specific features that will help the gamer progress along the game, increasing the total revenue of the gaming companies. These new microtransactions also occur throughout the year, thus reducing that tendency of the Video game industry of higher sales in Q4, around Christmas time. **More revenue and less seasonality.**

### **Gamer Profile**

This last trend has been increasing the players' engagement with the games, both prolonging the time per day spent and the time per game per year spent.

The average gaming years have risen from 10 years per gamer in 2013 to 12.6 in 2017, the "gamer lifetime" has increased 2.6 years.

The number of gamers has been growing steadily, from 1.6B in 2013 to 2.8B in 2017E, being the implied gross profit per gamer \$29 throughout the years. That means that the average gross profit per gamer has increased from  $10 * \$29 = \$290$  in 2013 to  $12.6 * \$29 = \$365$  in 2017, having risen 26% in the mentioned period. **Increased gamer lifetime.**

UBS has conducted a survey across the 5 key gaming markets (US, UK, Germany, Japan and China). The purpose is to obtain key information on the industry. And the below paragraph are based on that survey.

Gaming is regarded as a weekly habit and players on Console/PC on average play 3-4 times per week (3x in Europe and the US and 4x in Asia). The vast majority of these gamers also play Mobile games and reportedly play 4-5 times per week. Female and older gamers reportedly play on average 1 less time per week than other gamers.

Console gamers usually play 3.5 times per week and spend on average 3.4 hours per session, spending close to 12 hours per week gaming. PC gamers usually play 3.5 hours per week and spend on average 3.7 hours per session, spending a little over 12 hours gaming per week. On

average, eastern gamers play less lengthy sessions but more often than western players, as per UBS US Internet & Interactive Entertainment Survey.

On average only 16% of Console gamers prefer digital download and so there is more room to margin improvement. And downloadable content, available through microtransactions has hit 30-40% penetration on Console gamers.

Gaming subscription services have not been adopted by at least 60% of the gamers and at least 30% were not even aware of the existence of this type of service so there is a lot of space to capitalize on these services.

The Video game market has been **resistant to recessions** as it is viewed as a way to escape from reality.

Also, the industry is hit-driven, that is, that there are a lot of new games developed each year, however only a few are hits and only those hits are further developed into sequels.

## **Porter's 5 Forces**

### **Threat of new entrants**

**Barriers to entry** are high as the costs of developing and market a game are already huge and are still rising. Hence, it is very difficult for new entrants to enter the industry and compete with the established game publishing powerhouses.

**The Threat of New Entrants is Low.**

### **Threat of Substitutes**

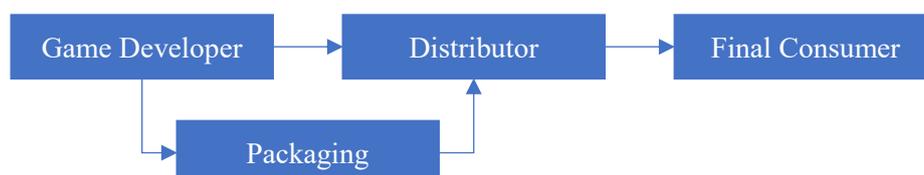
Games can be substitutes to each other as normally a gamer plays several games on several platforms. As the mobile platform is growing it can be also capitalizing on “cannibalisation” from other platforms.

Gaming is a hobby, hence, any hobby or activity that takes the gamers' attention and money from a game is a substitute.

**The Threat of Substitutes is Medium.**

### **Bargaining power of Suppliers and Buyers**

The PC and Console games industry has historically been composed by the below chart.



Game Developers would be the companies that research and develop the game itself, the Distributors would be the companies that distributed the games at physical stores to the Final consumer. There could be an alternate supply chain, that included Packaging, that is, if the company resorted to external Suppliers to manufacture CDs and the CD cases, etc. As the Game Developers create the games from scratch and what is mainly needed is Staff there are no Suppliers. The only type of Suppliers that exist are not related directly to this industry, but to all industries, such as utilities, etc.

The Game developers used to depend on the Distributors to sell their games to the Final consumer. However, that has since changed, as most of the Game publishers were able to introduce the digital download and hence, cut the middleman and increasing their margins.

Nonetheless, there's not only "good news" to the industry, and although the Companies can now reach the Final consumer more effectively, there have been complaints on the "microtransactions" trend and consumers can start buying less games and finding elsewhere to spend their time and money.

The most worrisome fact of the Console gaming market is that Game Developers are dependent on Console manufacturing companies such as Sony (11% market share in FY17) and Microsoft (8% market share in FY17), which gives these companies a large bargaining power.

The Mobile games industry is composed by the following players:



The Game developers are the companies that develop the games, the Distributors are the companies that own the application stores, Apple (9% market share in FY17) and Google (6% market share in FY17), which take a % of the revenue for themselves and the Final Consumer is the individual person that plays the game.

However, as the buyers are really fragmented the **Bargaining power of Buyers is Low in PC and High in Mobile and Console. The Bargaining power of Suppliers is non-existent.**

**Industry Rivalry**

The industry is dominated by big game publishing companies such as Activision, Electronic Arts, Take-Two, Tencent, etc. The majority of video game advertising revenue has been captured by Twitch (owned by Amazon) and YouTube (owned by Google).

Furthermore, the industry of video games is viewed as entertainment and as time is limited, the competition will be not only from other companies that publish games but also from any other entertainment company.

Company	Market cap in \$B as of 20/08/2018	Revenue of games FY17 in \$B
Microsoft	821	7
Tencent	425	18
Sony	69	11
Activision Blizzard	53	7
Nintendo	40	4
Electronic Arts	39	5

Source: Ycharts and Newzoo

**Microsoft** is an American multinational technology company and was founded in 1975. Under its **Microsoft Studios** wing they have published a variety of games such as Minecraft, Halo and Age of Empires. They are mainly focused on PC games and Console hardware (Xbox).

**Tencent** is a Chinese multinational conglomerate founded in 1998. It is mostly invested in Internet-related services and products, entertainment, AI and technology. It has published a variety of games such as League of Legends, Fortnite, Arena of Valor, CrossFire or Dungeon Fighter Online. It is mostly invested in PC games.

**Sony** is a Japanese multinational conglomerate that includes consumer electronics, gaming, entertainment and financial services. It was founded in 1946. Under its **Sony Interactive Entertainment** wing they have launched PlayStation and PSP Vita, popular Console hardware.

**Activision Blizzard** is an American video game publisher and was founded in 2008. It is the result of the merge between Activision and Vivendi. It has 5 major business lines: Activision (consoles), Blizzard Entertainment (PC), Major League Gaming (eSports) and King Digital Entertainment (Mobile). It has published a variety of games such as Call of Duty, World of Warcraft, Overwatch, Diablo, Candy Crush and Farm Heroes Saga. It is mostly invested in PC, consoles and mobile games.

**Nintendo** is a Japanese multinational consumer electronics and video game company. It was founded in 1889. It has published games such as Mario, Super Mario, The Legend of Zelda and Pokémon. They are mostly invested in Consoles and Mobile. They are the inventors of the Nintendo Wii and of the Gameboy.

**Electronic Arts** is an American video game publisher and was founded in 1982. It has published a variety of games such as FIFA, Battlefield, Madden NFL, The Sims, Need for Speed and Crysis. It is mostly invested in Console, PC and Mobile games.

**Other players:** Take-two (Console and PC), Ubisoft (Console and PC), Sony (Console hardware), Amazon (eSports), Google (Mobile and eSports), Apple (Mobile), Bandai (Console and PC), NetEase (Mobile), Zynga (Mobile), Nexon (PC and Mobile), Frontier Developments (PC, Console and Mobile), etc.

Below is a list of the 18 most successful franchises by number of copies sold.

Franchise name	Publisher	# of copies sold (in millions)
Super Mario	Nintendo	218.7
Call of Duty	Activision	226.8
Pokémon	Nintendo	119.9
FIFA	Electronic Arts	82.4
Grand Theft Auto	Rockstar Games	124.4
Wii	Nintendo	167.2
Tetris	Nintendo	35.8
Minecraft	Microsoft Game Studios	29.1
Duck Hunt	Nintendo	28.3
Nintendogs	Nintendo	24.7
Kinect Adventures!	Microsoft Game Studios	22.1
Brain Age	Nintendo	35.5
The Elder Scrolls V: Skyrim	Bethesda Softworks	19.6
Battlefield 3	Electronic Arts	17.3
The Sims 3	Electronic Arts	15.1
Gran Turismo 3	Sony Computer Entertainment	15.0
Guitar Hero III	RedOctane	16.4
LEGO Star Wars	LucasArts	15.3

Source: 24/7 Wall ST as of 2018

The list of Game franchises above is dated from early 2018 and depicts the 50 aggregated franchises (That is, for example, “Super Mario” includes 8 different games) that had most copies sold. And, as we can see in the table below, the company with most sales (more than the second doubled) is Nintendo, with 7 franchise names in the list. Electronic Arts comes in 4<sup>th</sup>, with three franchise names in its bout.

Publisher	# of copies sold (in millions)
Nintendo	630.1
Activision	226.8
Rockstar Games	124.4
Electronic Arts	114.9
Microsoft Game Studios	29.1
Microsoft	22.1
Bethesda Softworks	19.6
RedOctane	16.4
LucasArts	15.3
Sony Computer Entertainment	15.0

Source: 24/7 Wall ST as of 2018

In the below table we can see that the largest player in the market, Tencent, has 19% of market share and that the top 10 companies have 77% market share. We also note that Sony (Playstation) and Microsoft (Xbox) and Apple and Google are among the top 10 companies profiting from the gaming industry.

Market share	%
Tencent	19%
Sony	11%
Apple	9%
Microsoft	8%
Activision Blizzard	7%
NetEase	6%
Google	6%
Electronic Arts	5%
Nintendo	4%
Bandai Namco	3%
Other	23%

Source: Newzoo – Market share as of FY17

### **The Industry Rivalry is High.**

#### **Company Overview**

Electronic Arts was originally founded in 1982, close to San Francisco, in Redwood city. As of 1991, the Company was reincorporated under the state laws of tax haven state Delaware.

The Company defines itself as a global leader in digital interactive entertainment as It develops, markets, publishes and distribute video games content and services are accessible to gamers on a variety of platforms on the three main segments of the video game industry – that is PC, Console and Mobile.

Electronic Arts develops its own games (such as Battlefield, Mass Effect, Need for Speed, The Sims and Plants vs. Zombies – most these games are available in more than one of the market segments), licenses content and develops games and markets (such as FIFA, Madden NFL and Star Wars), publishes and distributes games developed by others (such as Titanfall).

## **Strategy**

The Company has adopted a strategy that can be divided into three main points:

- **Players First:** EA recognizes that a good relationship with players is the most important “asset” the Company can have and with that in mind, EA tries to prioritize the players’ in-game experience. To do this the Company intends to continue to develop its established games, develop new ones and produce/provide additional complementary services that can add value to the players’ experience. The ultimate goal is to have a diverse, broad and deep portfolio of games that are loved by the players. According to EA, It was the number one publisher of games for PS4 and Xbox One consoles in FY17 in the Western world and they estimate that in FY16, FIFA was the most sold game in the world.
- **Commitment to Digital:** Nowadays, there is a clear trend of purchases becoming evermore digital and engagement with the Company as well. So, EA has increased its line of products and adapted it to this trend through microtransactions, downloadable content, subscriptions and esports. These ultimately increase the engagement of the players with the game for longer periods of time. Also, with the increasing popularization of Mobile as a platform for gaming, the Company had the opportunity to produce new game models that can be monetized through the mentioned trends that primarily increases the Company’s revenues but also decreases its seasonality. And, as these are more profitable than the traditional disk sale (packaged goods), EA gets even more profitable.

The digital revenue of EA grew from \$2,2B in FY15, to \$2.4B in FY16 and to \$2.9B in FY17, a 29% from FY15 to FY17. And the Company feels that the trend of selling more digitally and less packaged goods will continue in the next years.

- One EA: The Company has been making an effort to become more flexible and hence more responsive to market trends. That is, in the past EA has been working on several different game engines and is now pushing towards only using one game engine and also It is pushing for its creative teams to code in the same language, so that the Company can be more flexible and ever faster to respond to new challenges. This also allows the Company to use existing ideas on specific franchises to be applicable/adaptable to other existing/new franchises.

EA is also investing a closer relationship with its clients and also in a closer relationship between its player base, in doing so It is hoping that the engagement of the players and the Company's games is prolonged. By increase the quality of Its games and by increase the relationships between the Company and its players and between themselves, EA is hoping that its value proposition is maximized and that these relationships are the more prolonged possible. With that effect, Electronic Arts has launched new player-centric subscription platforms such as EA Access and Origin Access (that enable the players to play new games and have some perks for a lower price), so that players can discover and try new experiences in the EA world.

EA identifies as trends for its business, the following:

- The industry is evermore getting digital, with sales migrating from physical sales to digital downloads.
- The Company's international presence is increasing and this influence on the Company's sales is larger as the years have passed. This means that the Company is exposed to foreign currency exchange and these are macroeconomic factors, that even with the use of financial derivatives, can dent EA's profits.
- The industry is also switching to a free-downloadable game, particularly on Mobile, but also on PCs and the player will then purchase the game's extra content.
- EA also feels that it is becoming more and more dependent on its key franchises, such as FIFA. As new complements to these popular franchises are being developed, such as extra content, subscriptions, advertising, live services among other.
- For EA it is easier to predict the profitability of existing franchises sequels than for newly created games and concepts.

## Significant Relationships

In the annual report EA mentions some significant relationships it has with other companies that are worth mentioning:

- Sony & Microsoft: EA is authorized to develop disk based and digitally-delivered games for PlayStation (Sony) and Xbox (Microsoft). At the time of the annual report of FY17, EA has not yet signed a licensed publisher agreement with Sony for PS4 and currently the relationship is being based on previously agreed terms. This relationship can be subject to a new pricing structure.

With these partnerships, EA has the non-exclusive right to use, for a fixed-term and in a designated territory, technology that belongs to the mentioned companies and that enables EA to publish games on their respective platforms.

There are three types of possible transactions between EA and these platform owners. Firstly, for disk-based products, these are made on a case-by-case basis, that will be examined individually by Sony, Microsoft or their designated replicators.

Secondly, for packaged goods, EA pays Sony or Microsoft a per-unit royalty for each unit manufactured.

Thirdly, with respect to digitally-delivered games and services, as the transaction is paid to Sony or Microsoft, these companies will pay either the wholesale price or a royalty depending on the agreement EA has with these companies.

It is important to mention that Sony and Microsoft have the power to control the manufacturing terms, delivery times, platform policies and approval conditions by themselves. For example, if one of these companies decides to launch a new console, EA is obliged to start producing content for the new console.

EA is obliged to disclose to Sony and Microsoft any problem, complaint or claim against the consoles and if the case applies, EA would have to indemnify the console manufacturers for any loss, liability and expense that results from any issue caused by EA. Furthermore, they have the right to terminate existing contracts if the issues are not solved or if EA becomes insolvent.

- Apple, Google and Other App Stores: EA's mobile contents are downloadable through one of the existing app stores and these distributors either charge a one-time fee at the moment of download or a fee for purchases in-game. The distributor's percentage is determined by signed conditions. The distributors are typically not obligated to

market/distribute any of EA's content and the agreements are, most times, terminable on short notice.

- Publishing Partners in Asia: EA has partnered with, for example, Tencent and Nexon. These companies publish EA's games and content on mobile and PC free-to-download platforms in some Asian territories such as Korea or China. The players will access EA's games through the platforms of EA's partners. And will have to pay additionally any extra in-game purchase. The agreement includes the revenue attributable to EA and its partners.

## **Market Risks**

The Company, however doing everything in its power to mitigate risks, still is affected by them. So, EA has identified some risks that may harm the company's market advantage:

- As the industry is hit driven (there are a lot of games being launched each year for every platform, however, only a few games – what the industry calls hits – dominate the industry and account for most of the sales of the main companies), and there are a lot of capable competing firms, the Company feels It might not be able to deliver consistently hit games and hence that will drive it to lose its market share. Also, if the consumers ultimately start preferring the competitor's products, the Company's market position may be at peril. To try and counter this risk, the Company tries to maintain and invest in a low range of games, to develop them into high-quality products and increase the probability of turning them into hits. However, this process is not a certainty, and some high-quality products do not become hits. Furthermore, many companies have built a loyal fan base and some genres of games are associated with past games which were hits and thus competing in these genres is a tough challenge to overcome. As the Company concentrates is less games, each game's risk of underperformance is more menacing to the Company as it cannot properly diversify the risk.
- The industry is highly dependent on other companies' gaming/downloading platforms such as Sony's PlayStation, Microsoft's Xbox, and on Apple's App Store and Google's Google Play. With that being said, the Company is highly dependent on these companies' policies and also on the Company's ability to continue to produce successful games for these platforms. Therefore, the Company's success relies on Its ability to predict which platforms will be most successful and also on its ability to handle the transition of the platforms themselves (new age platforms, such as a new

PlayStation or a new Xbox, new Nintendo consoles, etc). The Company's decisions are therefore impacted by new platform launches as It would have to invest in new software for its games and all previous games become obsolete, licensing decisions are also impacted by new platforms, games that were successful on previous platforms may not have the same level of success in new ones, if the demand for new platforms is low, the Company's investment decisions will also be impacted, there is also opportunity cost of platforms being more successful than the Company previously thought and that might damage the Company's profits, etc. The Company may also fail to implement a new business model that disrupts the industry and hence, can incur in huge losses.

- The gaming industry is a fast-paced changing industry. This brings danger to the Company's adaptability capabilities. To survive and thrive the Company must have the ability to predict in advance which change may disrupt the industry and prepare in advance its response for it. Another critical factor is the way competitors can adapt to new trends. Also, if the EA invests the wrong way to face new challenges both EA's reputation and its market position will be negatively impacted. This may provoke delays in the launching of new games and ultimately impact the revenue of EA and increase R&D expenses.
- Another risk identified is the security breaches and cyber threats. Also, the Company deals with data from its customers that if breached will cause reputational damage to EA.
- The Company relies on online infrastructure for some of its products functionalities. If these infrastructures are not functioning properly it will cause damage to EA's reputation.
- As the industry is subject to regulation, both national and international, there can be non-predictable changes (some countries restrict some type of content that EA eventually may display in its games) that impact the way the Company does business. Also, the Company is exposed to change in legislation that ultimately can impact the tax rate in the US and other foreign jurisdictions. There are also other form of taxes the Company pays such as payroll, sales, etc.
- The marketing campaigns may fail to cause a positive effect on the players and thus be uneventful.
- The gaming industry is also affected by risks that affect the entertainment industry (popularity, price and timing of the games, economic conditions, changes in consumer

demographics, other sources of entertainment and their ability to attract customers/viewers and critical reviews and gamer preferences).

- As EA licenses other parties' intellectual property rights, it may fall subject of claims of infringement of these rights. Some patent holding companies may try to monetize their patents by setting claims against EA. The Company does everything in its power to not knowingly infringe any of other companies' rights. These court process, won or lost, may require extensive sums of money that would be otherwise invested in the Company's projects. There may also exist the issue that many patents are being bought and in the future EA may need to license those patents to produce the games as it wishes, however, may not be able to buy the patents as a reasonable price.
- EA's M&A and other strategic transactions may not have a positive impact on EA's business. The Company may end up buying into difficulties, liabilities, non-compatible mentalities, etc, which will obviously damage EA's ability to monetize its investments.

### **Financial Performance**

The Company's fiscal year is from the 1<sup>st</sup> of April till the 31<sup>st</sup> of March of the following year.

It has not paid any cash dividends ever and is not planning on doing it any time soon.

The revenue is presented in two ways: by product revenue and other revenue and by method of distribution, that is digital and other revenue (mainly composed of packaged-goods).

In May of 2017, EA's Board approved a share repurchase program of up to \$1.2B of common stock, it will expire on May of 2019.

In April of 2015, the Company had announced a similar share repurchase program that ended in April of 2017, with the approximate number of shares bought in FY17 being of 6.5M for about \$508M.

Meaning that the Company frequently repurchases its shares which ultimately end up affecting their share's price. EA owns 1230 EA shares.

The Company never uses derivatives to hedge the risks that it incurs in.

Income Statement in \$M	FY14	FY15	FY16	FY17	Δ FY14/ FY15	Δ FY15/ FY16	Δ FY16/ FY17	% FY14/ FY15	% FY15/ FY16	% FY16/ FY17
Product	2 568	2 497	2 640	2 586	(71)	143	(54)	-3%	6%	-2%
Service and Other	1 947	1 899	2 205	2 564	(48)	306	359	-2%	16%	16%
<b>Total revenue</b>	<b>4 515</b>	<b>4 396</b>	<b>4 845</b>	<b>5 150</b>	<b>(119)</b>	<b>449</b>	<b>305</b>	<b>-3%</b>	<b>10%</b>	<b>6%</b>
Product	(1 028)	(938)	(893)	(822)	90	45	71	-9%	-5%	-8%
Service and Other	(401)	(416)	(405)	(455)	(15)	11	(50)	4%	-3%	12%
<b>Cost of revenue</b>	<b>(1 429)</b>	<b>(1 354)</b>	<b>(1 298)</b>	<b>(1 277)</b>	<b>75</b>	<b>56</b>	<b>21</b>	<b>-5%</b>	<b>-4%</b>	<b>-2%</b>
<b>Gross Profit</b>	<b>3 086</b>	<b>3 042</b>	<b>3 547</b>	<b>3 873</b>	<b>(44)</b>	<b>505</b>	<b>326</b>	<b>-1%</b>	<b>17%</b>	<b>9%</b>
%	68%	69%	73%	75%	0	0	0	1%	6%	3%
Research and development	(1 094)	(1 109)	(1 205)	(1 320)	(15)	(96)	(115)	1%	9%	10%
Marketing and sales	(647)	(622)	(673)	(641)	25	(51)	32	-4%	8%	-5%
General and administrative	(386)	(406)	(439)	(469)	(20)	(33)	(30)	5%	8%	7%
Acquisition-related contingent consideration	3	-	-	-	(3)	-	-	-100%	0%	0%
Amortization of intangibles	(14)	(7)	(6)	(9)	7	1	(3)	-50%	-14%	50%
<b>Operating expenses</b>	<b>(2 138)</b>	<b>(2 144)</b>	<b>(2 323)</b>	<b>(2 439)</b>	<b>(6)</b>	<b>(179)</b>	<b>(116)</b>	<b>0%</b>	<b>8%</b>	<b>5%</b>
<b>EBIT</b>	<b>948</b>	<b>898</b>	<b>1 224</b>	<b>1 434</b>	<b>(50)</b>	<b>326</b>	<b>210</b>	<b>-5%</b>	<b>36%</b>	<b>17%</b>
%	21%	20%	25%	28%	(0)	0	0	-3%	24%	10%
Net interest	(23)	(21)	(14)	15	2	7	29	-9%	-33%	-207%
<b>Income before provision for taxes</b>	<b>925</b>	<b>877</b>	<b>1 210</b>	<b>1 449</b>	<b>(48)</b>	<b>333</b>	<b>239</b>	<b>-5%</b>	<b>38%</b>	<b>20%</b>
Provision for taxes	(50)	279	(243)	(406)	329	(522)	(163)	-658%	-187%	67%
<b>Net income</b>	<b>875</b>	<b>1 156</b>	<b>967</b>	<b>1 043</b>	<b>281</b>	<b>(189)</b>	<b>76</b>	<b>32%</b>	<b>-16%</b>	<b>8%</b>

#### EPS

Basic	2,81	3,73	3,19	3,39
Diluted	2,69	3,50	3,08	3,34

#### # Shares

Basic	311	310	303	308
Diluted	325	330	314	312

Source: Annual report

EA Financials	2012	2013	2014	2015	2016	1Q17	2Q17	3Q17	4Q17	2017	1Q18	2Q18	3Q18	YTD18
PC	928	1 020	878	814	773	240	196	181	210	827	197	149	217	773
Console	2 325	2 005	3 011	2 942	3 390	1 034	595	810	1 196	3 635	705	917	885	3 703
Mobile	339	400	504	548	627	171	162	166	173	672	233	220	181	807
Other	205	150	122	92	55	4	6	3	3	16	2	-	6	11
Revenue	3 797	3 575	4 515	4 396	4 845	1 449	959	1 160	1 582	5 150	1 137	1 286	1 289	5 294
COGS	(1 388)	(1 347)	(1 429)	(1 354)	(1 298)	(154)	(389)	(501)	(233)	(1 277)	(215)	(418)	(413)	(1 279)
Op. Expenses	(2 288)	(2 195)	(2 138)	(2 144)	(2 323)	(552)	(611)	(680)	(596)	(2 439)	(622)	(610)	(634)	(2 462)
Depreciation	264	227	220	197	172	31	32	34	39	136	38	36	34	147
EBITDA	385	260	1 168	1 095	1 396	774	(9)	13	792	1 570	338	294	276	2 478
EBITDA (1-T)	270	183	820	769	980	544	(6)	9	556	1 103	237	206	194	1 740
CAPEX	32	(301)	(470)	(484)	(759)	(103)	(120)	(370)	1 215	622	(288)	(601)	558	884
WC	(108)	360	(169)	(318)	48	(547)	(282)	1 200	(100)	271	(281)	(483)	583	(281)
FCFF	194	242	181	(33)	269	(106)	(408)	839	1 671	1 996	(332)	(878)	1 335	2 343

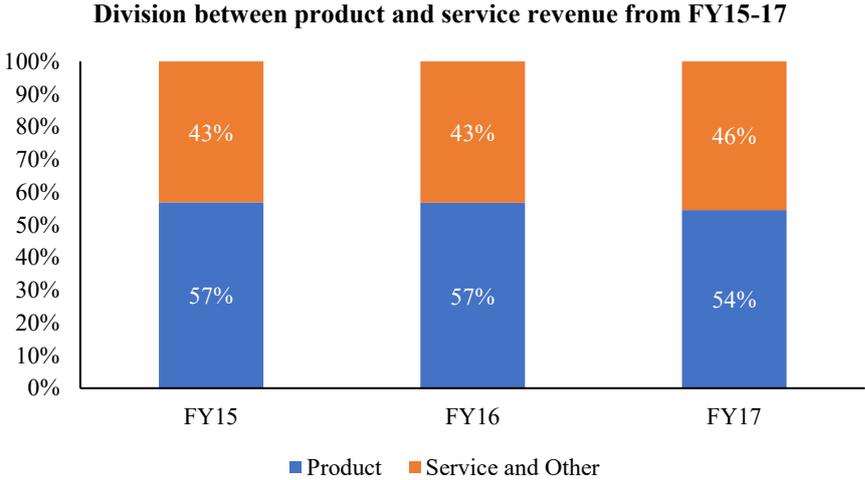
Source: Annual report

Net revenue stands for net amount of products sold digitally or physically sold that are attributable to the designed fiscal year (for example it excludes costs with royalties, etc).

The total revenue is composed by: video games that are sold through digital downloads or as packaged goods and that are to be played on PC or Consoles; video games to be downloadable on Mobile or tablets; extra downloadable content, other products and online game services that are associated with these products or other EA products; licensing of EA's content and software to other companies; other companies manufacturing and selling EA's products; advertisements on EA's platforms or websites.

EA’s total revenue went from \$4 515M in FY15, decreased 3% to \$4 396M in FY16 and increased 10% to \$4 845M. In FY17, the revenue was primarily driven by the increase of \$809M of sales in Star Wars, Battlefield and FIFA franchises, despite being offset by a \$360M decrease in sales from The Sims, NHL franchises and other.

The second table present was the table used to calculate the Year-to-date of 2018 used to attain the most recent available financial figure on the discounted cash flow models.



Source: Annual report

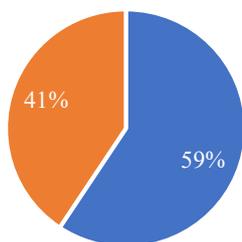
For the past 3 years, revenue has been somewhat consistent in that, a slight majority of it comes from Product sales, around 55%, and the rest from Service and other sales.

In FY17, product sales were driven up, by the increase (of \$526M) in Star Wars and Battlefield 1 that was slightly offset by decreasing sales (of \$383M) in Dragon Age, FIFA, The Sims and Need for Speed franchises.

In FY17, services and other sales were driven by the increase of \$404M in FIFA ultimate team, Star Wars and Need for Speed 2015. However, this increase was offset by decreases of \$98M in The Simpsons Tapped Out, Titanfall, The Sims FreePlay and Battlefield 4 Premium.

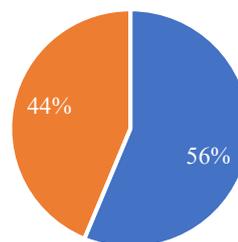
Digital revenue was \$2 874M, up 19% (from FY16 to FY17). Digital revenue was 59% of revenues in FY17. International revenue was \$2 726M, up 1% (from FY16 to FY17). The Digital revenue includes full game downloads, extra content, subscriptions, advertising and other and mobile revenue. It includes game software that is distributed through EA’s digital platform named Origin.

**Division between digital and other revenue in FY17**



■ Digital revenue ■ Other revenue

**Division between international and national revenue in FY17**



■ International revenue ■ National revenue

Source: Annual report

In FY17, the main drivers for the increase of \$465M of digital revenue growth were:

- Full-game download: \$194M increase in game downloads that were mainly driven by Battlefield 1 and FIFA 17 and partially offset by Battlefield Hardline (this represents a 42% increase from FY16).
- Extra content: \$142M increase driven by FIFA Ultimate team and Star Wars Battlefront (this represents a 13% increase from FY16).
- Mobile revenue: \$82M increase driven by Star Wars: Galaxy of Heroes (this represents a 15% increase from FY16).
- Subscriptions, advertising and other net revenue: \$47M increase, a 14% increase from FY16.

Packaged goods and Other net revenues (comprised in Other revenues in the chart) include revenue from software distributed physically, for example, through CD-ROMs, by partner brick and mortar retailers and also software licensing revenue from third parties (for example console companies that bundle their consoles with EA games). There revenues were a total of \$1 971M in FY17 and were mainly driven by FIFA 17, FIFA 16, Star Wars Battlefront and Battlefield 1 sales. The sales of Packaged goods in FY17 decreased \$16M (1%), revealing the trend of switching to digital sales as opposed to packaged goods.

Research and development costs are directly related with the production of the games and can include staff, overhead, depreciation and impairments of pre-paid royalties.

Marketing and Sales costs are costs that are directly attributed to the promotion and advertising of the games.

General and administrative costs are related with personnel that execute administrative and corporate functions (HR, IT, etc.).

### **Cash refunds and Royalties**

As per EA policy, the Company does not give cash refunds to its channel partners (distributors or retailers). Generically, the Company reduces revenue expectation for future returns and applies price protection (credit allowance to lower the wholesale price of specific products to be sold). In certain countries, EA accepts product refunds.

The Company must pay royalties. These royalties consist of payments to content licensors (celebrities, sports organizations, movie studios, etc), independent software developers (for content related with EA's games not produced internally) and co-publishing and distribution affiliates (these relate with the delivery of the products). The royalties are calculated on the expected and projected revenue to be received by the sales on the given product (if by EA's understanding, it is too difficult to estimate how many products will be sold, EA recognized royalty expense at the greater of contract rate or on a straight-line basis over the term of the contract).

The Company is also prone to risk that affects smaller gaming companies that produce content for EA, as these companies require down-payments. Thus, EA gets exposed to the risk of these companies of going bankrupt. Also, some contracts the EA has have a minimum royalty payment, even if no sales are recorded.

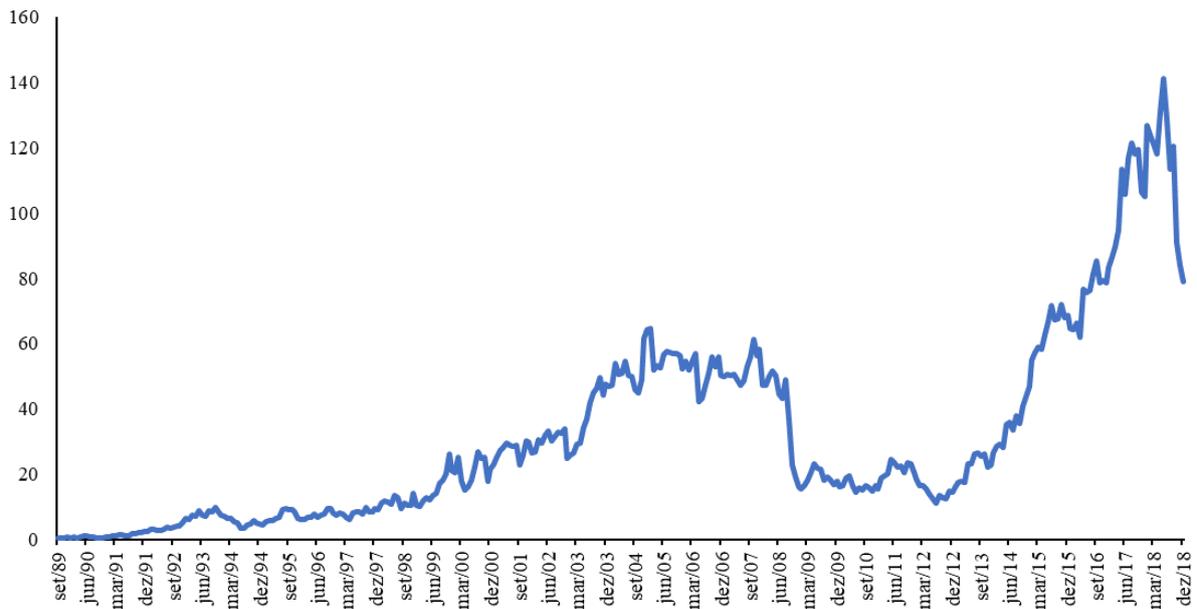
Impairments and losses pre-launch are charged as R&D expenses whereas post-launch are recorded as cost of revenue.

The Company is obliged to consider forecasts of future taxable income and the treatment of deferred tax assets and liabilities is, either, the difference between financial statement amount and the tax basis of assets and liabilities or the expected future tax benefit to be derived from tax losses and tax credit carry forwards.

### **Stock Performance**

The Company started being publicly traded in September of 1989 with a share price of 45 cents and as of October of 2018 the price per share was 90.98. The Company's price has been decreasing from a high of 141 in June of 2018, due to the systemic market risks in 2018 associated the trade wars that have deeply affected the Tech sector in general.

Historical stock price evolution 09/89 till 12/18



Source: Yahoo finance

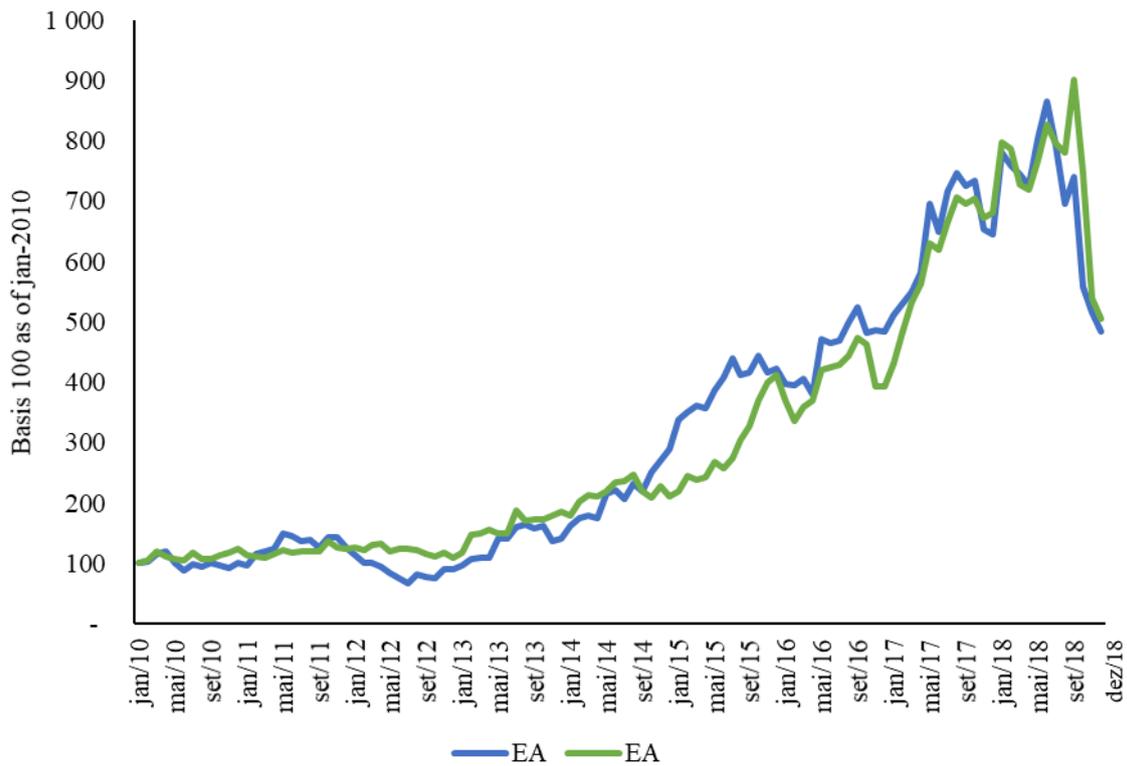
When comparing with EA's stock price most comparable competitor (with a 100 basis as of jan-10), that is Activision Blizzard, we can conclude that since January of 2010, Activision's stock has performed better than EA. However, there were long periods where EA's stock was performing better than Activision's, like from September 2014 till October 2017.

In the chart depicted below we can observe the comparison between the evolution between Electronic Art's stock and Activision Blizzard Stock.

It is clear that both companies were impacted by last year's volatility. In 2018, due to several issues, such as for example the US-China trade war, the stock market was deeply impacted and specially technology stocks were impacted by 2018's geopolitical issues.

We can also observe that EA was more impacted as the Company added the delay of the Battlefield game to the issues already mentioned. For these reasons the stock market punished the Company's stock. It has however increased since the beginning of 2019, as the volatility eases and the stock market corrects its wild swings.

**Stock performance chart, EA vs. ATVI**



Source: Yahoo finance

### **M&A History**

The Company has been using M&A over the years to fuel its growth (through the acquisition of proven franchises or the acquisition of companies with recognized creativity and game development) and to diversify its portfolio of games over the years. According to Pitchbook, the top 10 deals the Company made range from \$750M to \$40M, and from July 1997 to November 2017.

Company	Deal Size	Deal Date
PopCap	\$750M	aug-11
VG Holding	\$705M	jan-08
JAMDAT Mobile	\$671M	feb-06
Respawn Entertainment	\$455M	nov-17
Playfish	\$300M	nov-09
Maxis	\$125M	jun-97
Westwood Studios	\$123M	sep-98
Mythic Entertainment	\$76M	jul-06
DICE	\$75M	oct-06
Pogo	\$40M	feb-01

Source: Pitchbook and Venturebeat

It is difficult to assess the success of each acquisition, however, of 10 deals, 6 were unsuccessful or broke-even (in 2 cases the acquired studios were closed, Westwood and Mythic) and 4 were successful.

The most successful acquisitions, though, were Maxis (the creator of The Sims franchise) and DICE (the creator of the Battlefield franchise).

### **Company Valuation**

The Company's investment case is mainly based on the following strengths:

- Sustained revenue through the Company's proven hit games such as FIFA, Battlefield, The Sims, NBA, etc.
- Revenue growth fuelled by extra downloadable game content and new hit-games (developed in doors or acquired through M&A).
- Diminished OPEX costs due to new digital downloading trends.

### **Discounted Cash Flow**

Three DCF scenarios were prepared considering these value drivers. We opted to only perform a DCF analysis as the Company is expected to keep its leverage stable for the coming years.

The financials used were annualized to the 3Q18 figures the Company released as of 31/12/2018. That is, the numbers used for the 2018 value in the DCF model are obtained through the following calculation:  $FY17 + 3Q18 - 3Q17$ .

### Base-case Scenario

**Mature growth:** 2.69% 10 Y US treasury bill.

### WACC calculation:

Aswath Damodaran's Unlevered Beta for the entertainment industry is of 0.92

The Levered beta will be  $Be = Bu * (1 + (1 - tax) * (D/E)) = 1,58$

The implied ERP according to Aswath Damodaran is of 5.08%

$Ke = \text{Mature growth (2.69\%)} + B1 * \text{ERP} = 10.32\%$

$Kd = \text{10 Y US treasury bill (2.69\%)} (\text{market risk}) + \text{company risk (1.25\%)} = 3.94\%$

Company risk: According to Aswath Damodaran, the company risk can be measured through the interest coverage ratio plus the 10Y US treasury bill. As EA is a large capitalization company and has an interest coverage ratio of 87.4, its rating is of AAA and the inherent spread to its debt is of 1.25%.

<i>Interest Coverage Ratio: Small market cap (&lt;\$5 billion)</i>	<i>Interest Coverage Ratio: Large market cap (&gt;US \$ 5 billion)</i>	<i>Rating</i>	<i>Typical Default</i>
> 12.5	>8.5	AAA	1.25%
9.50–12.50	6.5-8.5	AA	1.75%
7.50–9.50	5.5-6.5	A+	2.25%
6.00–7.50	4.25- 5.5	A	2.50%
4.50–6.00	3- 4.25	A–	3.00%
4.00-4.50	2.5-3.0	BBB	3.50%
3.50–4.00	2.25-2.5	BB+	4.25%
3.00–3.50	2.0-2.25	BB	5.00%
2.50–3.00	1.75-2.0	B+	6.00%
2.00–2.50	1.5-1.75	B	7.25%
1.50–2.00	1.25-1.5	B–	8.50%
1.25–1.50	0.8-1.25	CCC	10.00%
0.80–1.25	0.65-0.8	CC	12.00%
0.50–0.80	0.2-0.65	C	15.00%
<0.65	<0.2	D	20.00%

Source: Aswath Damodaran

The WACC therefore is of:

$$\begin{aligned} \text{WACC} &= (E/A * Ke) + (D/A * Kd * (1-t)) = (53\% * 10.32\%) + (47\% * 3.94\% * (1-29.77\%)) \\ &= 6.74\% \end{aligned}$$

The Terminal Value 2027 =  $CF_{2028} / (WACC - g)$ .

### Revenue Growth till 2027:

The revenue is divided between the three segments in which the Company operates in.

The PC segment will enjoy a growth of 3% until 2021, as predicted by NewZoo. From 2022 onwards, we assumed that the segment's growth will start declining linearly 0.5% per year. This decelerated growth is due to the end of the market maturity phase of the segment and due to the cannibalization of users and revenues that Mobile and AR games will provoke.

The Console segment will enjoy a growth of 2.3% up until 2021 as predicted by NewZoo. From 2022 onwards, the segment will experience a decline of 0.5% per year for the same reasons as the PC segment.

For the Mobile segment, we assumed a more conservative view than NewZoo, which states that the segment will increase 26.8% per year up until 2021. We assumed a starting growth of 25% and then it linearly declines 3.5% per year.

The revenue growth per year in the Base-Case will be 6% up until 2022 and then declines as stated in the below table. The research reports we had access to stated that the Company's revenue would increase 5% per year in the case of Morgan Stanley and 6% in the case of UBS.

#### **% GM till 2027:**

Regarding the Gross margin, we think that as stated in the research reports we had access to, that the COGS will decrease a total of 1%, due to the digital download trend that is taking place in the market. We think it will be phased out in 4 years.

Afterwards the COGS will continue to decrease (0.1% yearly) as the Company continues to follow the digital trend and gradually stop spending funds on packaging.

#### **OPEX till 2027:**

Regarding the OPEX, We think it is going to increase (5% yearly) due to the increasing necessity of external services such as clouds for the games to operate and the necessity of hiring new game software developers and raising the salary of the existing ones.

Morgan Stanley's OPEX growth is of 5%.

**Effective tax:** 29.77%, as per Aswath Damodaran's calculations for the global tax rate in the entertainment industry.

#### **CAPEX and WC:**

We assume that the Company's policy will not change and that they will continue to manage it as they have been doing the past years. So, We have assumed that both will follow the past

trends and calculated an average of the past 6 years for both and this will be a 6-year moving average as we think that the value creation/destruction for this Company will not come from neither CAPEX nor WC.

DCF - Base-Case	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
PC	928	1 020	878	814	773	773	796	820	845	866	883	896	905	910	910	905
% PC Growth		10%	-14%	-7%	-5%	0%	3%			3%	2%	2%	1%	1%	0%	-1%
Console	2 325	2 005	3 011	2 942	3 390	3 703	3 788	3 875	3 964	4 044	4 104	4 145	4 166	4 166	4 145	4 104
% Console Growth		-14%	50%	-2%	15%	9%	2%			2%	2%	1%	1%	0%	-1%	-1%
Mobile	339	400	504	548	627	807	1 009	1 261	1 576	1 915	2 260	2 587	2 872	3 087	3 211	3 227
% Mobile Growth		18%	26%	9%	14%	29%	25%			22%	18%	15%	11%	8%	4%	0%
Other	205	150	122	92	55	11	-	-	-	-	-	-	-	-	-	-
% Other Growth		-27%	-19%	-25%	-40%	-80%										
Revenue	3 797	3 575	4 515	4 396	4 845	5 294	5 593	5 956	6 385	6 825	7 247	7 629	7 944	8 163	8 266	8 236
Growth		(0)	0	(0)	0	0	0	0	0	0	0	0	0	0	0	(0)
COGS	(1 388)	(1 347)	(1 429)	(1 354)	(1 298)	(1 279)	(1 276)	(1 273)	(1 269)	(1 266)	(1 265)	(1 264)	(1 262)	(1 261)	(1 260)	(1 259)
% GM	63%	62%	68%	69%	73%	76%	77%	79%	80%	81%	83%	83%	84%	85%	85%	85%
COGS Growth		-3%	6%	-5%	-4%	-1%	-0,25%	-0,25%	-0,25%	-0,25%	-0,10%					
Op. Expenses	(2 288)	(2 195)	(2 138)	(2 144)	(2 323)	(2 462)	(2 585)	(2 714)	(2 850)	(2 993)	(3 142)	(3 299)	(3 464)	(3 637)	(3 819)	(4 010)
% EBIT Margin	40%	39%	53%	51%	52%	53%	54%	54%	55%	56%	57%	57%	56%	55%	54%	51%
Exp. Growth		-4%	-3%	0%	8%	6%	5%									
Depreciation	264	227	220	197	172	147	205	195	189	184	182	184	190	187	186	185
EBITDA	385	260	1 168	1 095	1 396	1 700	1 937	2 164	2 455	2 750	3 022	3 250	3 406	3 452	3 373	3 152
EBITDA (1-T)	270	183	820	769	980	1 194	1 360	1 520	1 724	1 931	2 122	2 282	2 392	2 424	2 368	2 214
CAPEX	32	(301)	(470)	(484)	(759)	884	(183)	(219)	(205)	(161)	(107)	1	(146)	(139)	(126)	(113)
WC	(108)	360	(169)	(318)	48	(281)	(78)	(73)	(145)	(141)	(112)	(138)	(115)	(121)	(129)	(126)
FCFF	194	242	181	(33)	269	1 797	1 099	1 228	1 374	1 629	1 903	2 145	2 132	2 164	2 114	1 975

TV 48 753

DCF 1 683 965 1 010 1 058 1 176 1 287 1 359 1 265 1 203 26 502

Source: EA annual report and analysis

<b>EV - Base-Case</b>	<b>37 509</b>
Debt	994
Cash	3 887
<b>Equity</b>	<b>40 402</b>
# Shares	314
<b>Price p/ Share</b>	<b>128,67</b>

Source: EA annual report and analysis

The total Enterprise Value is of \$37.5M, the current total debt is of close to \$1M and the current cash position in the Balance Sheet is of circa \$4M.

**The Equity is therefore \$40m and as there are 314m shares the price per share would be of \$128.67.**

### Bull Case Scenario

The only difference between the Base-Case and the Bull Case is the Mobile segment case, as in this case, We assume that NewZoo's prediction will occur, and it will increase 26.8% yearly up until 2021 and then onwards the growth rate will decrease linearly 3.5% per year.

DCF - Bull Case	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
PC	928	1 020	878	814	773	773	796	820	845	866	883	896	905	910	910	905
% PC Growth		10%	-14%	-7%	-5%	0%	3%			3%	2%	2%	1%	1%	0%	-1%
Console	2 325	2 005	3 011	2 942	3 390	3 703	3 788	3 875	3 964	4 044	4 104	4 145	4 166	4 166	4 145	4 104
% Console Growth		-14%	50%	-2%	15%	9%	2%			2%	2%	1%	1%	0%	-1%	-1%
Mobile	339	400	504	548	627	807	1 023	1 298	1 645	2 029	2 430	2 826	3 188	3 485	3 687	3 772
% Mobile Growth		18%	26%	9%	14%	29%	27%			23%	20%	16%	13%	9%	6%	2%
Other	205	150	122	92	55	11	-	-	-	-	-	-	-	-	-	-
% Other Growth		-27%	-19%	-25%	-40%	-80%										
Revenue	3 797	3 575	4 515	4 396	4 845	5 294	5 608	5 993	6 454	6 938	7 418	7 868	8 260	8 561	8 742	8 781
Growth		(0)	0	(0)	0	0	0	0	0	0	0	0	0	0	0	0
COGS	(1 388)	(1 347)	(1 429)	(1 354)	(1 298)	(1 279)	(1 276)	(1 273)	(1 269)	(1 266)	(1 265)	(1 264)	(1 262)	(1 261)	(1 260)	(1 259)
% GM	63%	62%	68%	69%	73%	76%	77%	79%	80%	82%	83%	84%	85%	85%	86%	86%
COGS Growth		-3%	6%	-5%	-4%	-1%	-0,25%	-0,25%	-0,25%	-0,25%	-0,10%					
Op. Expenses	(2 288)	(2 195)	(2 138)	(2 144)	(2 323)	(2 462)	(2 585)	(2 714)	(2 850)	(2 993)	(3 142)	(3 299)	(3 464)	(3 637)	(3 819)	(4 010)
% EBIT Margin	40%	39%	53%	51%	52%	53%	54%	55%	56%	57%	58%	58%	58%	58%	56%	54%
Exp. Growth		-4%	-3%	0%	8%	6%	5%									
Depreciation	264	227	220	197	172	147	205	195	189	184	182	184	190	187	186	185
EBITDA	385	260	1 168	1 095	1 396	1 700	1 951	2 201	2 524	2 863	3 192	3 489	3 723	3 849	3 849	3 697
EBITDA (1-T)	270	183	820	769	980	1 194	1 370	1 545	1 772	2 011	2 242	2 450	2 614	2 703	2 703	2 596
CAPEX	32	(301)	(470)	(484)	(759)	884	(183)	(219)	(205)	(161)	(107)	1	(146)	(139)	(126)	(113)
WC	(108)	360	(169)	(318)	48	(281)	(78)	(73)	(145)	(141)	(112)	(138)	(115)	(121)	(129)	(126)
FCFF	194	242	181	(33)	269	1 797	1 109	1 253	1 422	1 709	2 023	2 313	2 354	2 443	2 448	2 357

TV 58 193

DCF 1 683 974 1 031 1 096 1 233 1 368 1 465 1 397 1 359 31 595

Source: EA annual report and analysis

<b>EV - Bull Case</b>	<b>43 201</b>
Debt	994
Cash	3 887
<b>Equity</b>	<b>46 094</b>
# Shares	314
<b>Price p/ Share</b>	<b>146,80</b>

Source: EA annual report and analysis

**This will yield a price per share of \$146.80.**

### Bear Case Scenario

The only difference between the Base-Case and the Bear Case is the Mobile segment case, as in this case, We assume that NewZoo's prediction will not occur, and it will instead increase at 20% in 2019 and then the growth rate will decrease linearly 2% yearly.



In the table below we can see the upside and downside deviation from the Base-case in each estimate.

Researcher	Downside	Upside
Morgan Staley	-18%	15%
UBS	-39%	28%
Our research	-27%	14%

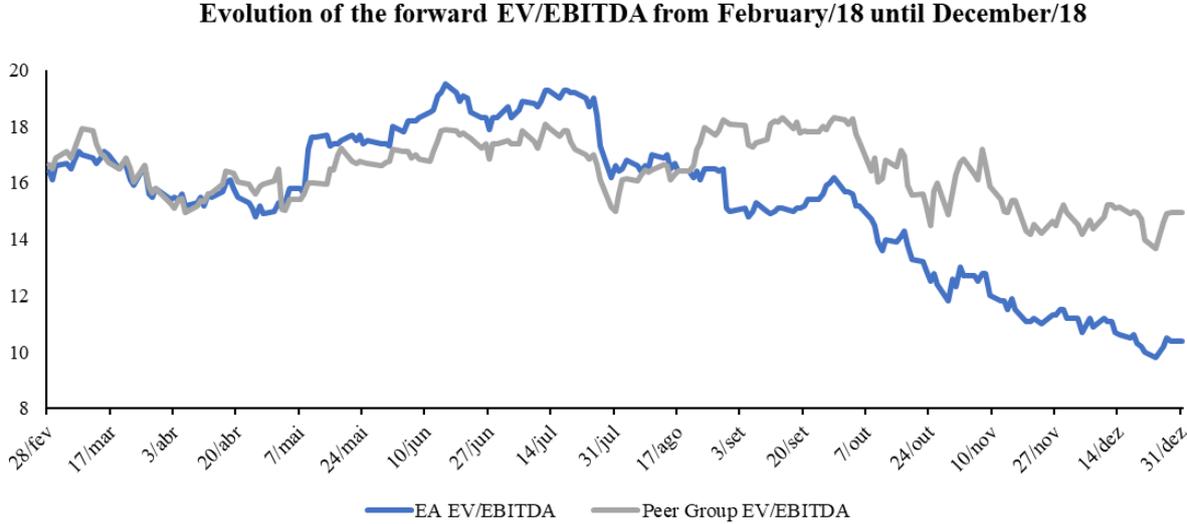
Source: EA annual report and analysis

We conclude therefore that at the current market price EA is trading at a discount and that it is an excellent investment opportunity.

**Multiples**

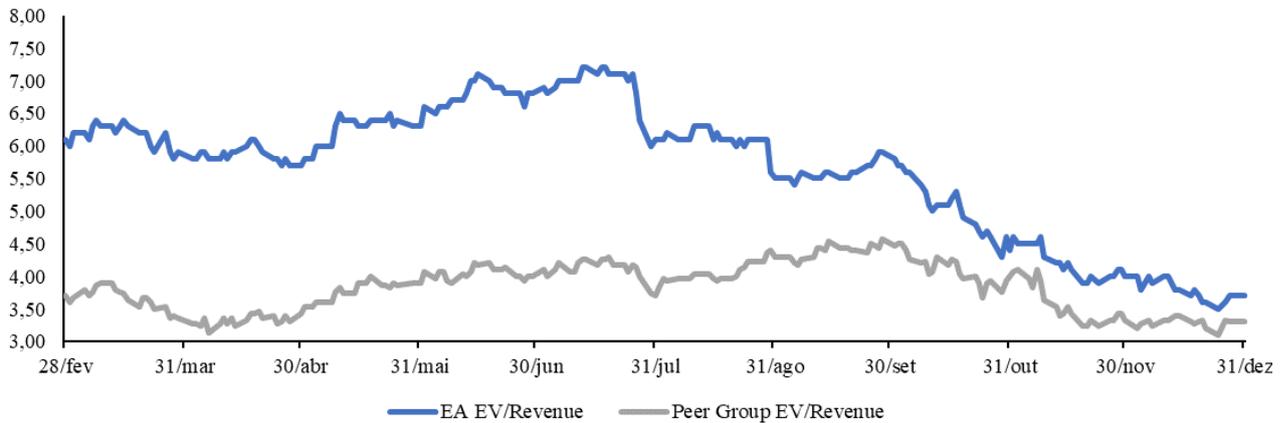
The past year of 2018 has seen significant volatility and the tech industry sectors have been one of the most affected by this. The gaming sector was specially hit by the volatility of last year and Electronic Arts allied to this fact, the postponing of the Battlefield franchise in September. This non-recurrent fact has deeply affected EA’s market multiples.

To obtain the peer group, we have consulted Bloomberg, which promptly yield the peer group, which is constituted by Activision, Take-Two and Zynga.



Source: Bloomberg

### Evolution of the forward EV/Revenue from February/18 until December/18



Source: Bloomberg

The charts above represent the evolution of the forward EV/EBITDA and forward EV/Revenue between Feb/2018 and Feb/2019.

EA's EV/EBITDA went from as high as 19.5x to as low as 9.8x whereas the peer group's multiple went from as high as 18.3x to as low as 13.7x.

Regarding EA's forward EV/Revenue, it went from as high as 7.2x to as low as 3.5x and regarding the peer group average multiple it went from as high as 4.6x to as low as 3.1x.

Hence proving the volatility that the sector and EA experienced in 2018. With that being said, in the table that follows we have the implied price per share of EA derived from the average multiple of the peer group times the expected EBITDA for 2019 and 2020 and the expected Revenue for 2019 and 2020.

Valuation as of 31/Dec	EV/ EBITDA FY19E	EV/ EBITDA FY20E	EV/ Revenue FY19E	EV/ Revenue FY20E
Peer Group average	13.2x	13.2x	3.7x	3.7x
Expected EBITDA and Revenue	1.535	1.694	4.783	5.077
Enterprise Value	20.257	22.364	17.539	18.617
Price per share	73,73	80,43	46,64	50,08

Source: Bloomberg

The EV/EBITDA 2019E multiple yields a \$73.73 per share value as of 31/12/2018 and the EV/Revenue 2019E multiples yields a \$46.64 as of 31/12/2018.

We use the one-year forward multiple due to the fact that as stated in the Literature Review, it is statistically the most accurate.

However, these multiples are highly influence by a year of great volatility. For example, if we check the value of the Company as of 25 of July of 2018 as in the table that follows, the values will be much more in line with our Bear scenario in the Discounted Cash Flow computations, which can reflect a bearish sentiment of the market regarding tech stocks.

Valuation as of 25/Jul	EV/ EBITDA FY19E	EV/ EBITDA FY20E	EV/ Revenue FY19E	EV/ Revenue FY20E
Peer Group average	17.4x	17.4x	5.1x	5.1x
Expected EBITDA and Revenue *	1.535	1.694	4.783	5.077
Enterprise Value	26.651	29.423	24.554	26.064
Price per share	94,09	102,92	87,41	92,22

Source: Bloomberg

\*We were not able to extract the expected EBITDA and Revenue as of 25/Jul of Bloomberg. However, it would certainly be higher than these figures, which were derived from December’s expectations. This further proves that the implied price per share would be even higher.

We will use the price per share implied by the multiple as of December. However, we note that it is suffering from downward market. We also note that the price per share as of 25/July would be higher, further proving that without the non-recurrent company specific event, the Company would be trading at a higher multiple and hence at a higher price per share.

**Final Recommendation**

After performing the Discounted Cash Flows analysis and the Relative Valuation analysis, the conclusion reached is, considering that EA’s share price as of 31/12/2018 was of 78.91, that the investor should **buy and hold** EA’s shares.

The recommendation is **buy and hold** although, the multiple valuation yields a lower share price that the current. These multiples are being influenced by the recent events occurring in the market, namely the stock market correction and the US-China trade war that deeply affects all of the technology stocks. Furthermore, this year EA had a non-recurrent issue, its Battlefield franchise’s release date was delayed and hence has affected the stock’s trading price. If we look at EA’s trading multiples and share price before September we can see that it was trading at a much higher price even reaching \$146.5 per share as of 25 of July. The author of this thesis feels these are current trends that will ultimately stop being relevant and for that reason the forward EBITDA/Revenue predictions will increase when the situation is stabilized. EA’s investment case is strong. It is a company that has been delivering new hits consistently and

that already owns many well-known franchises that not only are playable in every segment (PC, Console and Mobile) but also are some of the market leading games in its genres, such as FIFA in sports for example, meaning that players buy these games year after year. EA is also able to increase its revenue on these established games through new game models that enable micro transactions for perks in-game. Furthermore, the Company has a solid capital structure, low leverage ratio and a strong cash position. Furthermore, as the digital trend is in full swing the Company will be able to cut its costs significantly, as more players download the game instead of physically buying it.

For all the cited reasons, we believe EA is a valuable company and that the investor should **buy and hold** it as there is an **upside of 63%**, when compared to our Base-case.

Valuation	DCF	EV/Forward EBITDA	EV/Forward Sales
Electronic Arts	128,67	73,73	46,64

Source: S&P Capital IQ, annual report and analysis

## Annex

### Peer Group financials

Peer Group and Company Financials	EA			
	FY18	Current LTM	FY19E	FY20E
<b>Market Capitalization</b>	37 099	28 737	0	0
- Cash & Equivalents	5 331	5 161	0	0
+ Preferred & Other	0	0	0	0
+ Total Debt	992	994	0	0
<b>Enterprise Value</b>	32 760	24 570	0	0
<b>Revenue, Adj</b>	5 150	5 294	4 783	5 077
<i>Growth %</i>		3%	-10%	6%
<b>Gross Profit, Adj</b>	3 875	4 019	3 648	3 900
<i>Margin %</i>	75%	76%	76%	77%
<b>EBITDA, Adj</b>	1 581	1 730	1 535	1 694
<i>Margin %</i>	31%	33%	32%	33%
<i>Growth %</i>		9%	-11%	10%
<b>Net Income, Adj</b>	1 051	1 441	1 195	1 307
<i>Margin %</i>	20%	27%	25%	26%
<b>EPS, Adj</b>	3,4	4,7	3,9	4,3
<b>Cash from Operations</b>	1 692	1 563	0	0
<b>Capital Expenditures</b>	-107	-104	-118	-122
<b>Free Cash Flow</b>	1 585	1 459	1 252	1 404

Source: S&P Capital IQ, annual report and analysis

Peer Group and Company Financials	Activision			
	FY18	Current LTM	FY19E	FY20E
<b>Market Capitalization</b>	35 535	31 667	0	0
- Cash & Equivalents	4 225	4 225	0	0
+ Preferred & Other	0	0	0	0
+ Total Debt	2 671	2 671	0	0
<b>Enterprise Value</b>	33 981	30 113	0	0
<b>Revenue, Adj</b>	7 500	7 499	6 442	7 126
<i>Growth %</i>		0%	-14%	11%
<b>Gross Profit, Adj</b>	4 983	4 982	4 682	5 209
<i>Margin %</i>	66%	66%	73%	73%
<b>EBITDA, Adj</b>	2 996	2 996	2 457	2 808
<i>Margin %</i>	40%	40%	38%	39%
<i>Growth %</i>		0%	-18%	14%
<b>Net Income, Adj</b>	1 674	1 747	1 707	2 006
<i>Margin %</i>	22%	23%	27%	28%
<b>EPS, Adj</b>	2,2	2,3	2,2	2,6
<b>Cash from Operations</b>	1 790	1 790	0	0
<b>Capital Expenditures</b>	-131	-131	-133	-144
<b>Free Cash Flow</b>	1 659	1 659	1 833	2 074

Source: S&P Capital IQ, annual report and analysis

Peer Group and Company Financials	Take Two			
	FY18	Current LTM	FY19E	FY20E
<b>Market Capitalization</b>	11 151	9 853	0	0
- Cash & Equivalents	1 424	1 601	0	0
+ Preferred & Other	0	0	0	0
+ Total Debt	8	0	0	0
<b>Enterprise Value</b>	9 734	8 252	0	0
<b>Revenue, Adj</b>	1 793	2 580	2 935	2 782
<i>Growth %</i>		44%	14%	-5%
<b>Gross Profit, Adj</b>	895	1 126	1 490	1 550
<i>Margin %</i>	50%	44%	51%	56%
<b>EBITDA, Adj</b>	287	479	691	748
<i>Margin %</i>	16%	19%	24%	27%
<i>Growth %</i>		67%	44%	8%
<b>Net Income, Adj</b>	186	370	556	576
<i>Margin %</i>	10%	14%	19%	21%
<b>EPS, Adj</b>	1,7	3,2	4,7	4,9
<b>Cash from Operations</b>	394	580	0	0
<b>Capital Expenditures</b>	-62	-58	-57	-57
<b>Free Cash Flow</b>	332	522	563	588

Source: S&P Capital IQ, annual report and analysis

Peer Group and Company Financials	Zynga			
	FY18	Current LTM	FY19E	FY20E
<b>Market Capitalization</b>	3 387	4 656	0	0
- Cash & Equivalents	581	581	0	0
+ Preferred & Other	0	0	0	0
+ Total Debt	100	100	0	0
<b>Enterprise Value</b>	2 906	4 175	0	0
<b>Revenue, Adj</b>	907	907	1 218	1 483
<i>Growth %</i>		0%	34%	22%
<b>Gross Profit, Adj</b>	603	603	856	1 046
<i>Margin %</i>	66%	66%	70%	71%
<b>EBITDA, Adj</b>	60	60	240	322
<i>Margin %</i>	7%	7%	20%	22%
<i>Growth %</i>		0%	299%	34%
<b>Net Income, Adj</b>	24	24	196	238
<i>Margin %</i>	3%	3%	16%	16%
<b>EPS, Adj</b>	0,0	0,0	0,2	0,3
<b>Cash from Operations</b>	168	168	0	0
<b>Capital Expenditures</b>	-11	-11	-15	-15
<b>Free Cash Flow</b>	157	157	187	293

Source: S&P Capital IQ, annual report and analysis

## References

- Group of Goldman Sachs analysts, (1999), “All roads lead to Rome”;
- Foort, K., (1995), “Cross border valuation”, Harvard Business School;
- Luehrman, T., (1995), “What’s it worth?”, Harvard Business Review;
- Luehrman, T., (1997), “Using APV: a better tool for valuing operations”, Harvard Business Review;
- Rosenberg, B. and Rudd A., (w/d), “The corporate uses of beta”, University of California, Berkley;
- Goedhart, M., Koller, T. and Wessels, D., (2005), “The right role for multiples in valuation”, The Mckinsey Quartely;
- Goedhart, M., Haden, P., (2003), “Emerging markets aren’t as risky as you think”, The Mckinsey Quartely;
- James, M., Koller, T., (2000), “Valuation in emerging markets”, The Mckinsey Quartely;
- Fernandez, P., (2004), “80 common errors in company valuation”;
- Schill, M., (2017), “Business Valuation: Standard Approaches and Applications”, Darden Business Publishing;
- Mitra, S. K., (2010), “Note on cash flow valuation methods”, University of Western Ontario;
- Zenner, M., Hill, S., Clark, J. and Mago, N., (2008), “The most important number in Finance”, JPMorgan;
- Goedhart, M., Koller, T. and Wessels, D., (2015), “Valuing High Tech Companies”, The Mckinsey Quartely.
- Katsenelson, V. (2011), “The Little Book of Sideways Markets”, John Wiley & Sons, Inc
- Damodaran, A. (2011), “The Little Book of Valuation”, John Wiley & Sons, Inc