

GOOD GAME WELL PLAYED



I want to play a game

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INTRODUCTION & OBJECTIVE



The video game industry, being the tertiary* and quaternary** sectors of the entertainment industry, specialises in the development, marketing, distribution, monetisation and consumer feedback of video games. The many functions within the industry's value chain, as a result, create dozens of job disciplines and thousands of jobs worldwide.

The industry has grown from niche to mainstream and as of July 2018, generated US\$134.9b annually in global sales. Research has shown that the sector has consistently grown since at least 2015 to a record US\$191b; while it is not recession-proof and forecasted to shrink 1.2% annually, the forecasted global sales is still at a staggering US\$188b.

The industry has also influenced the technological advancement of personal computers through hardware (such as sound cards, graphic cards and 3D graphic accelerators, CPU) and co-processors. For example, sound cards were originally developed for games and subsequently improved for adoption by the music industry.

The industry shows no sign of slowing down given the constant technological advancements which give rise to many new platforms and opportunities for new game developments. Thus, in this project, we will be using exploratory analysis from the selected dataset (obtained from Kaggle) where the objective is to identify any possible trend(s) and generate insight for future decision-making.



*generally known as the service sector

**based upon economic activity associated with either the intellectual or knowledge-based economy, consisting of information technology; media, research and development; information-based services such as information-generation and information-sharing; and knowledge-based services such as consultation, education, financial planning, blogging and designing

(Above excerpt source: https://en.wikipedia.org/wiki/Video_game_industry)

DATASET DESCRIPTION

This dataset contains a list of video games with sales greater than 100,000 copies. It was generated by a scrape of vgchartz.com.

Fields include

- Rank – Ranking of overall sales
- Name – The game's name
- Platform – Platform of the game's release (i.e. PC, PS4, etc.)
- Year – Year of the game's release
- Genre – Genre of the game
- Publisher – Publisher of the game
- NA_Sales – Sales in North America (in millions)
- EU_Sales – Sales in Europe (in millions)
- JP_Sales – Sales in Japan (in millions)
- Other_Sales – Sales in the rest of the world (in millions)
- Global_Sales – Total worldwide sales

The script to scrape the data is available at <https://github.com/GregorUT/vgchartzScrape>.

It is based on BeautifulSoup using Python.

There are 16,598 records. 2 records were dropped due to incomplete information.

Dataset and description source: <https://www.kaggle.com/datasets/gregorut/videogamesales>

LIBRARIES USED & ACTIONS TAKEN

VISUALISATIONS

Plotly Express
Matplotlib
Seaborn

DATA MANIPULATION

Pandas
NumPy

DASHBOARD

Plotly Dash

ACTIONS TAKEN

Updated ‘NaN’ and ‘Unknown’ values (mainly ‘Year’ and ‘Publisher’) to best of ability based on info available online; dropped rows for remaining ‘NaN’ values and games whose release was cancelled

Created ‘Main Publisher’ column to consolidate rows which may fall under a subsidiary under one name instead (e.g. ‘Activision Blizzard’ to fall under ‘Activision’ as main publisher)

	BEFORE CLEANING	AFTER CLEANING
No. of Games	11,493	11,491
No. of Platforms	31	31
No. of Genres	12	12
No. of Publishers	578	582
Earliest Year Recorded	1980	1977
Latest Year Recorded	2020	2020

PLATFORM DISTRIBUTION

Platform Distribution based on Number of Games Released

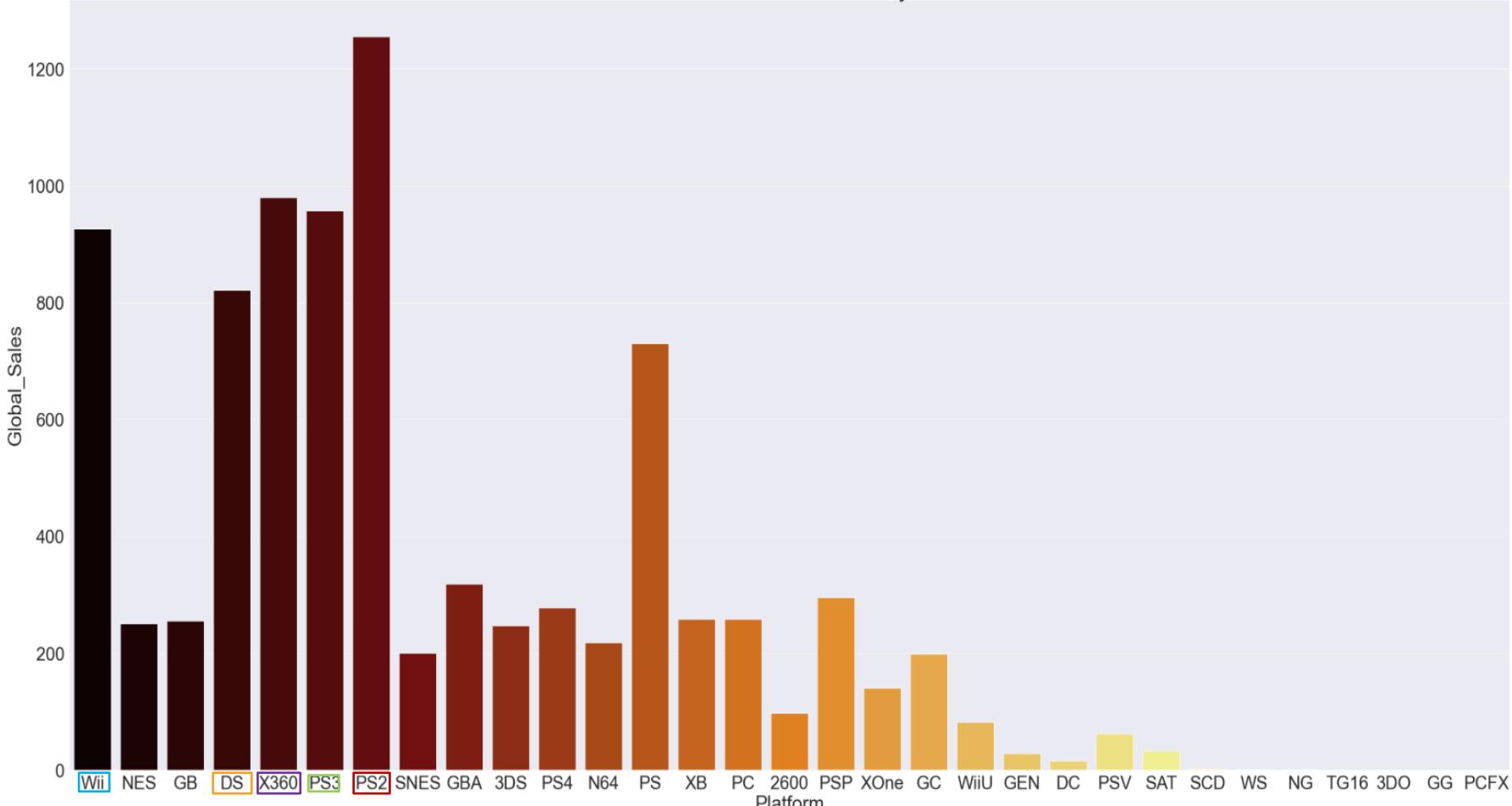


- Total of 31 platforms where the games had been released from 1977 to 2020
- Most number of games released on DS and PS2, followed by PS3 and Wii, which were both released in November 2006 – differences between the four mentioned platforms range between 1 to 4

(Treemap is interactive on Jupyter notebook)

PLATFORM SALES

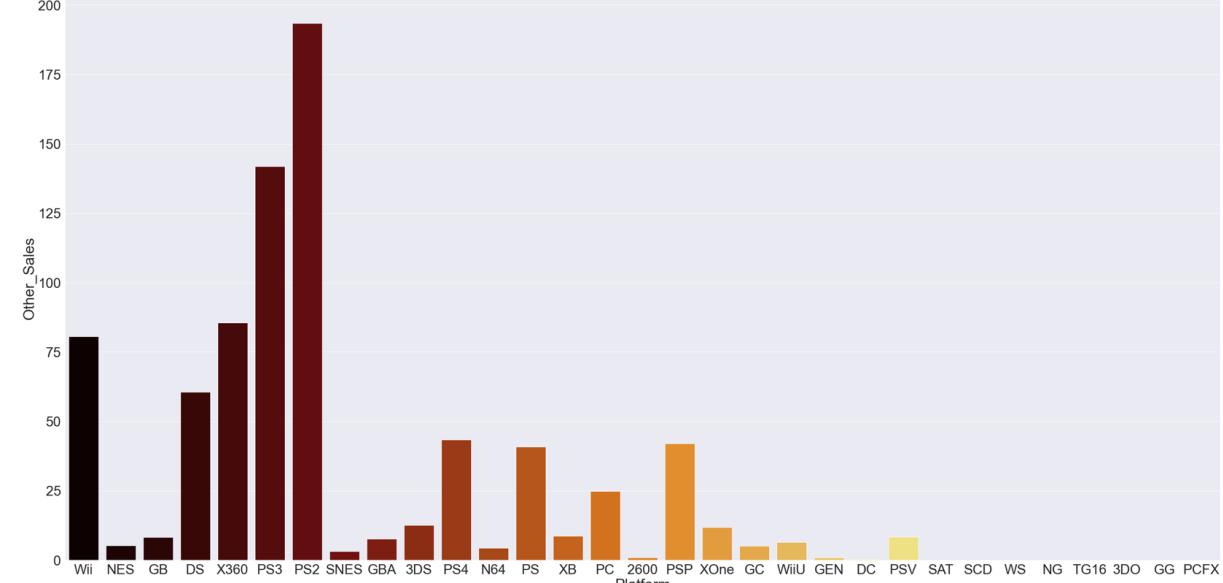
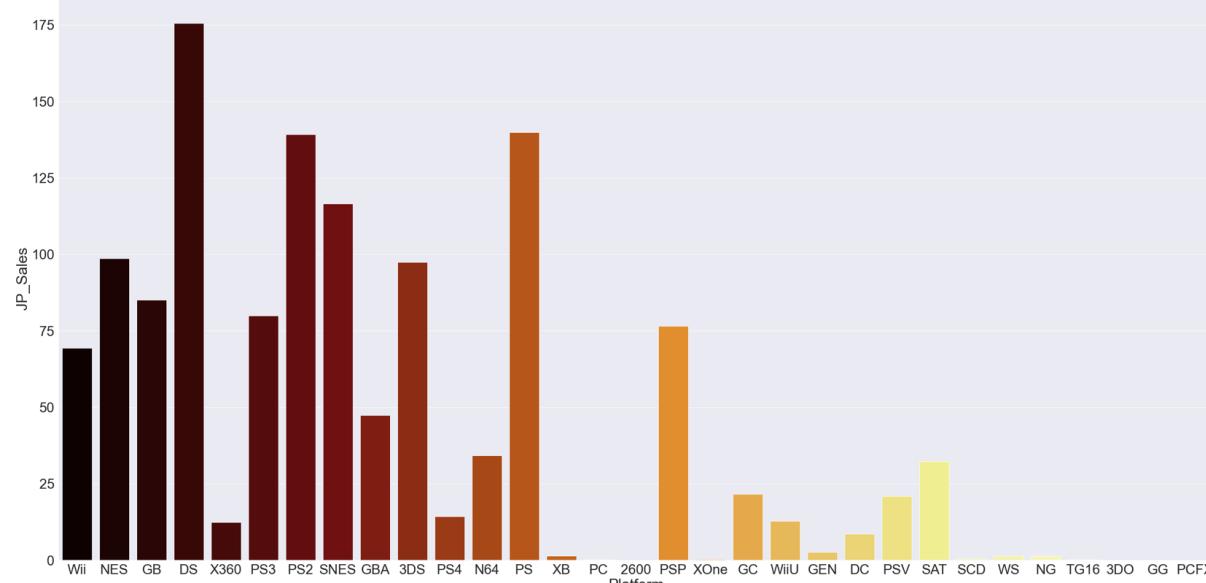
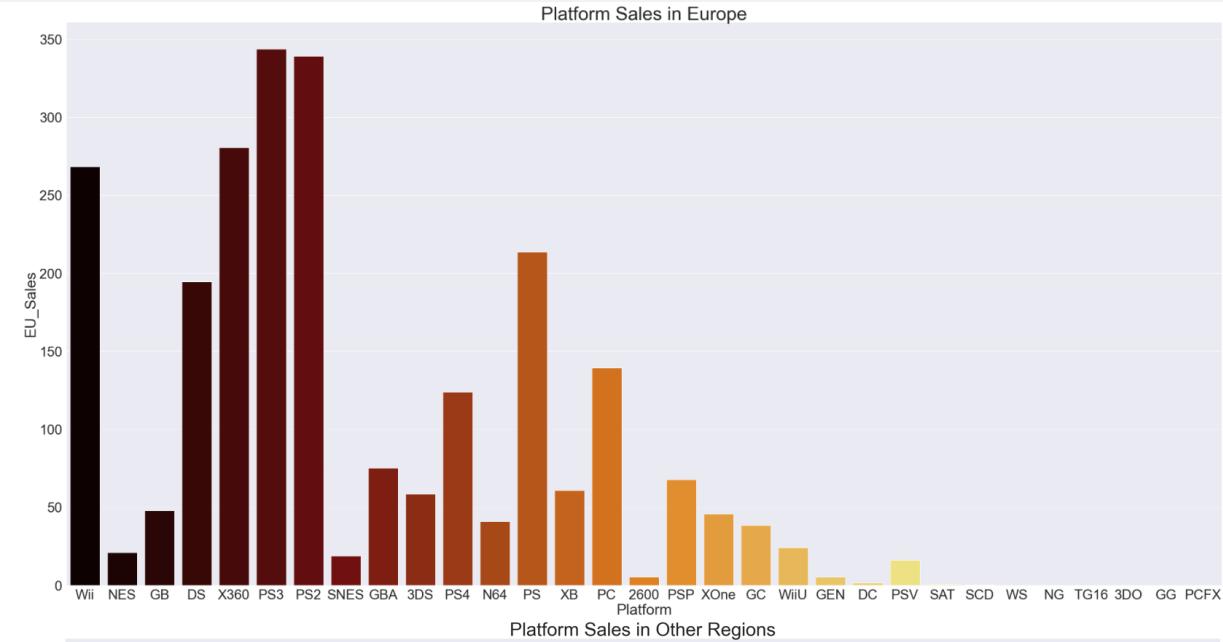
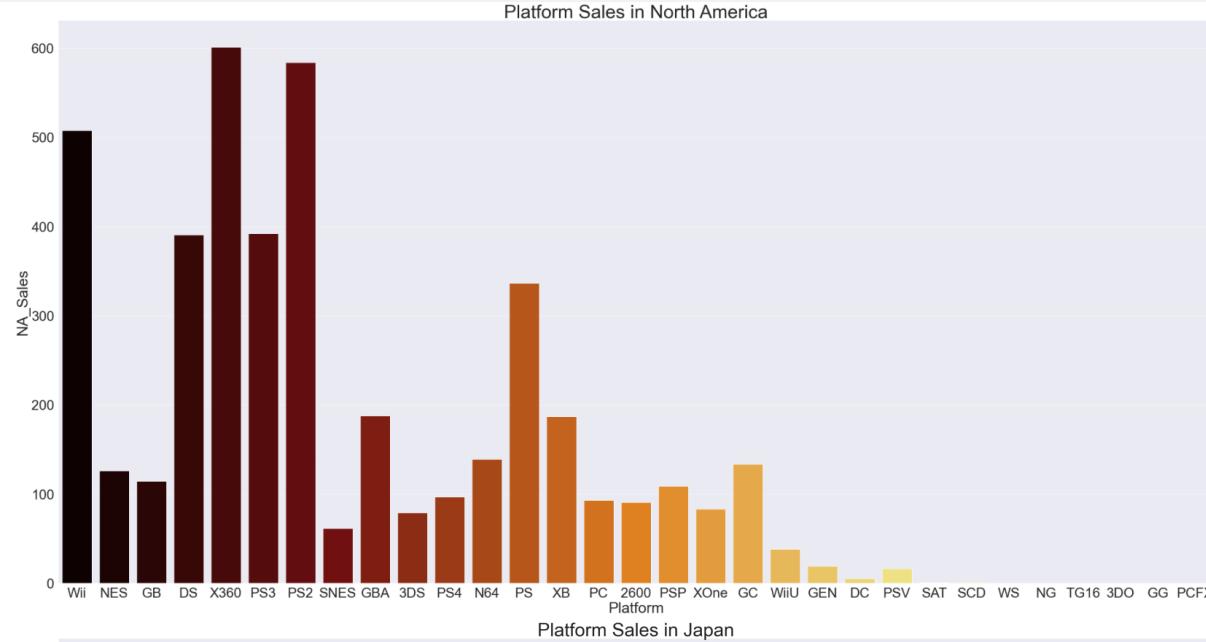
Platform Sales Globally



Despite DS and PS2 having similar number of games released, the latter's sales figures far surpasses that of the former's – this could be due to the types of games released on PS2 being more popular or that having been released four years earlier than the DS has allowed more consumers to own the console, resulting in a bigger target audience.

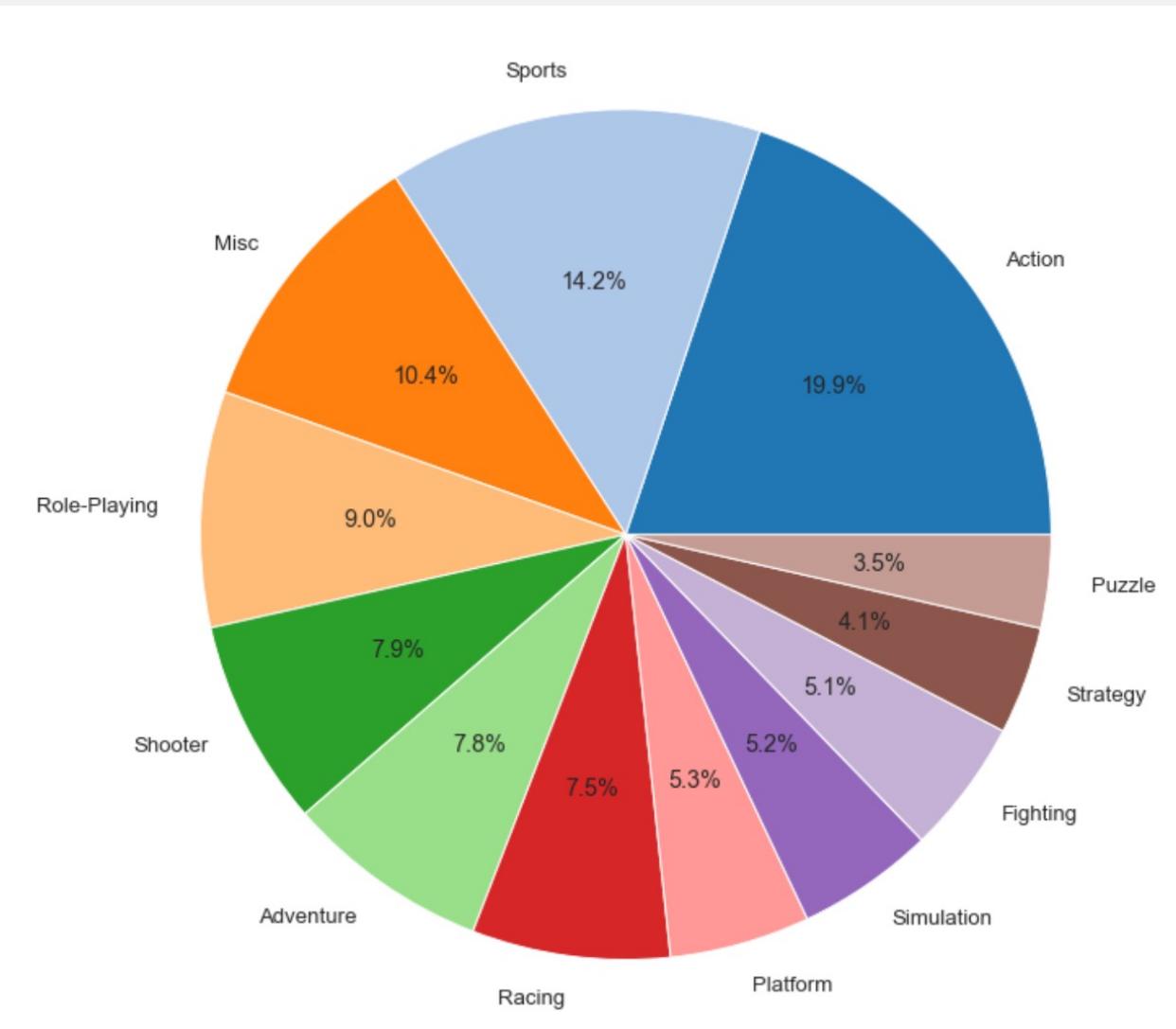
PS3 and Wii, like the number of games released on each respective platform, are similar in terms of global game sales as well.

Interesting to note that while X360 came in fifth in terms of game release, it is second in global sales. We can attribute this to the popularity of the types of games released on the platform as publishers would most likely have released the same games on both PS2 and X360 (and PS3 later) given the similarity of the design and function of both consoles.



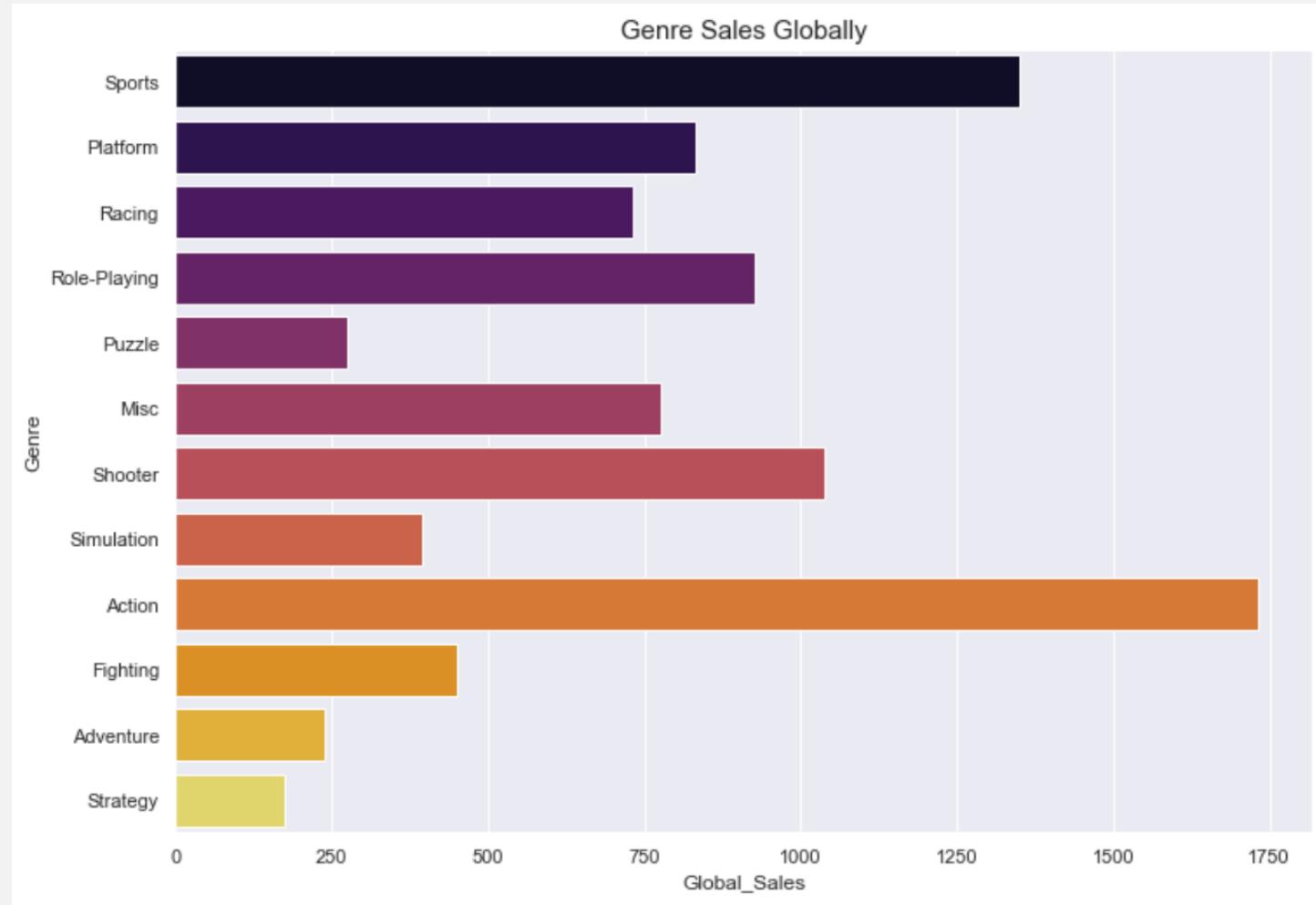
All of the platforms that fall under the top five in terms of games release – except for Wii – are the top-selling platforms in the various regions, albeit different for each one which reflects the platform preference of each region.

GENRE DISTRIBUTION



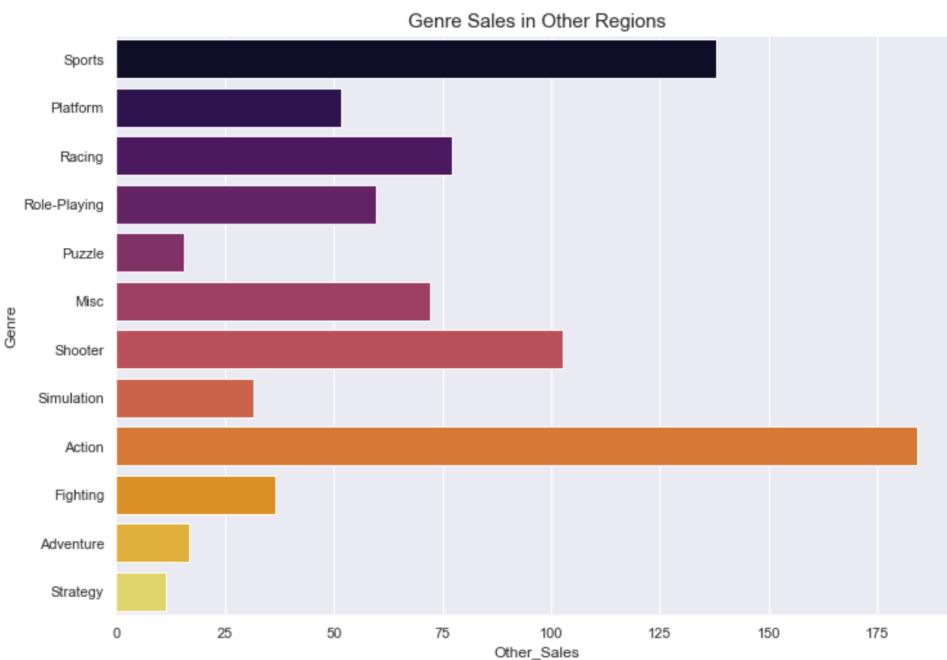
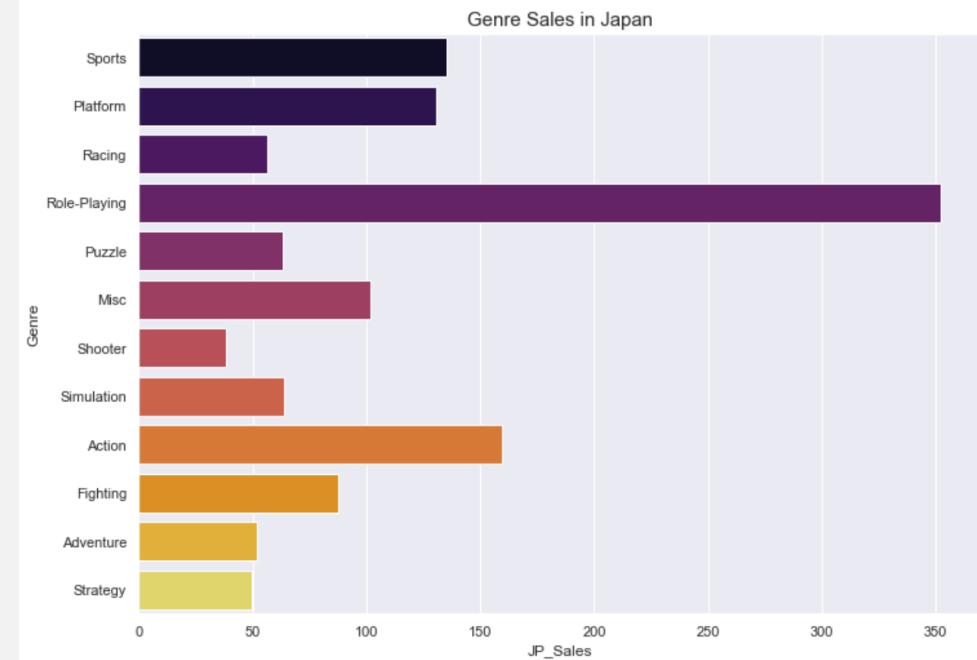
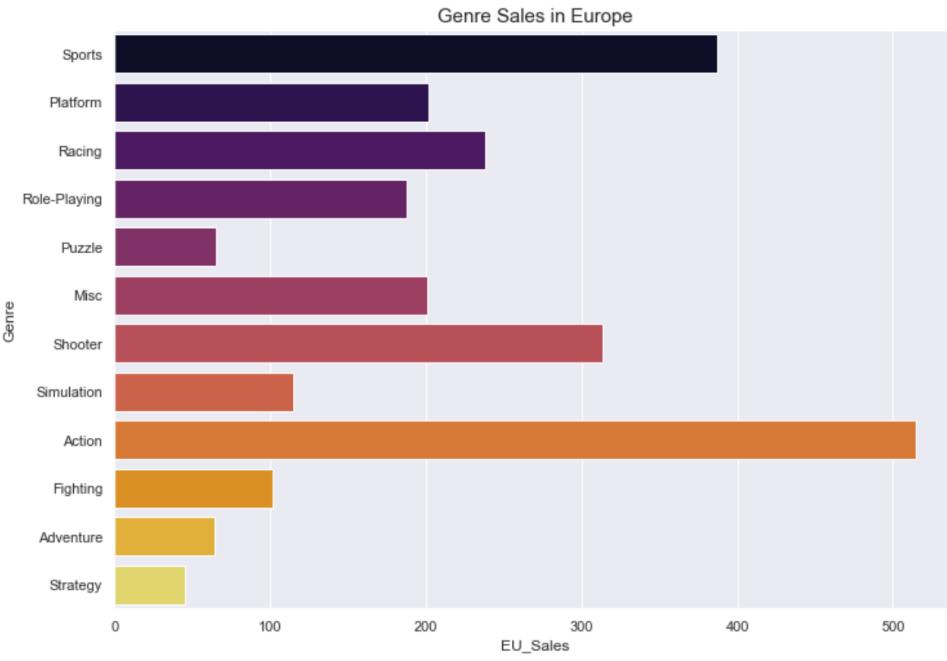
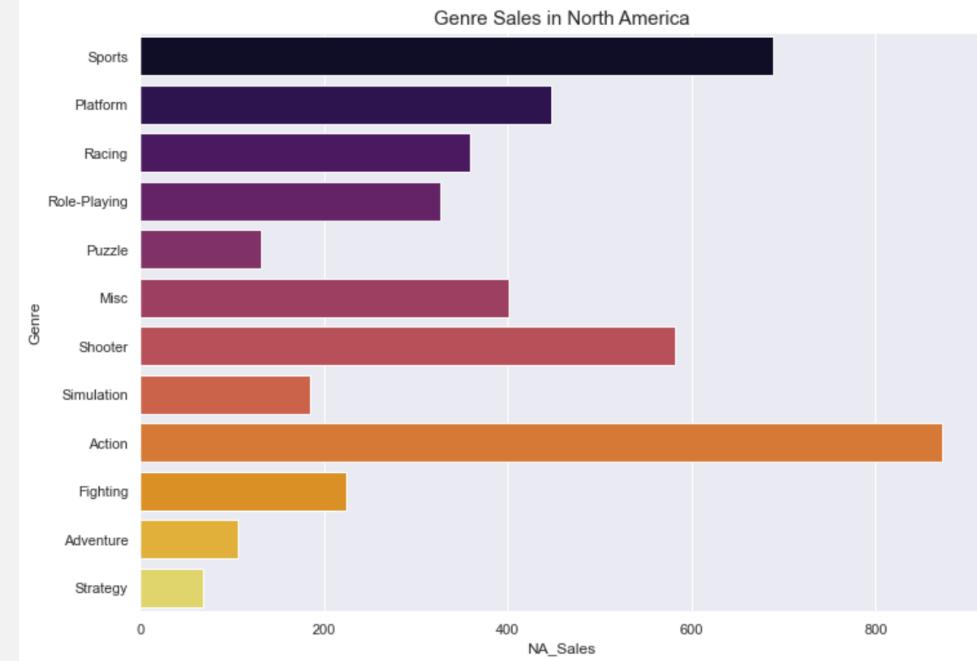
- Total of 12 genres where the games released have been relatively distributed in:
 1. Action (Grand Theft Auto, The Legend of Zelda)
 2. Sports (FIFA, Wii Sports)
 3. Miscellaneous (Wii Play, Guitar Hero)
 4. Role-Playing (Pokémon, Final Fantasy)
 5. Shooter (Call of Duty, Halo)
 6. Adventure
 7. Racing (Mario Kart, Gran Turismo)
 8. Platform (Super Mario Bros., Donkey Kong)
 9. Simulation (Animal Crossing, The Sims)
 10. Fighting (Tekken, Street Fighter)
 11. Strategy (StarCraft)
 12. Puzzle (Tetris)

GENRE SALES



The 'Action' genre, where the most number of games were released under, generated the highest sales globally, followed by the 'Sports' genre which was also the genre with the second highest number of games released under.

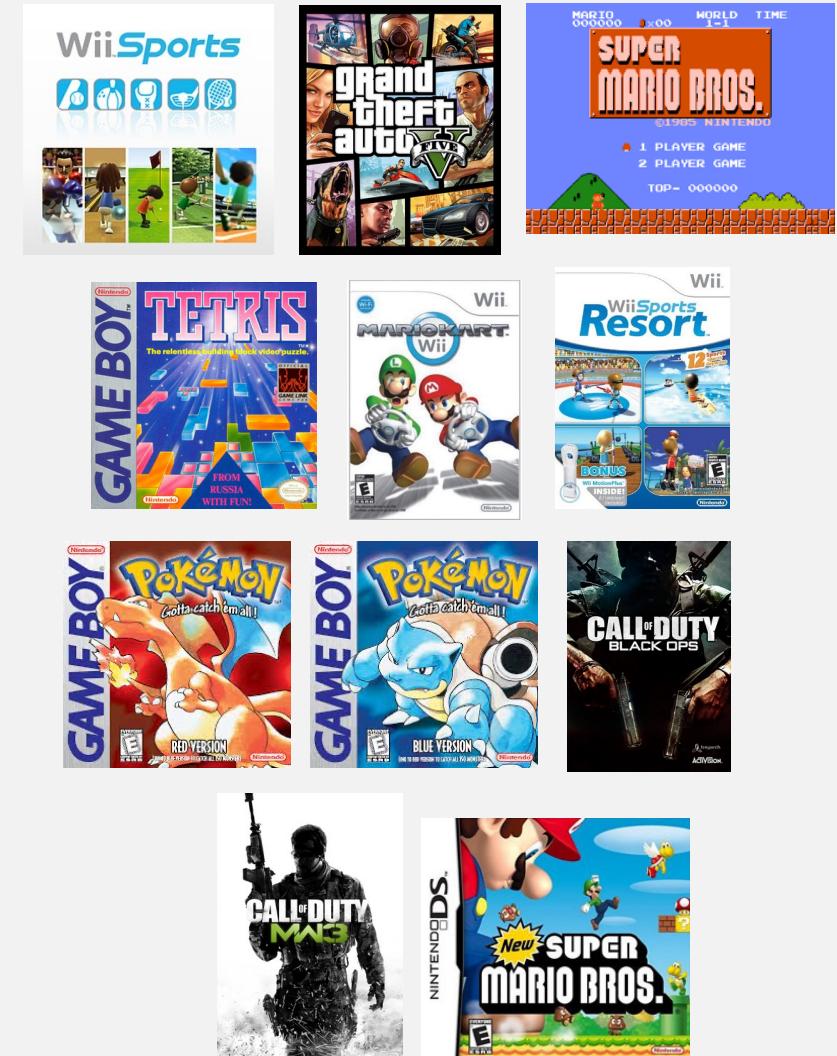
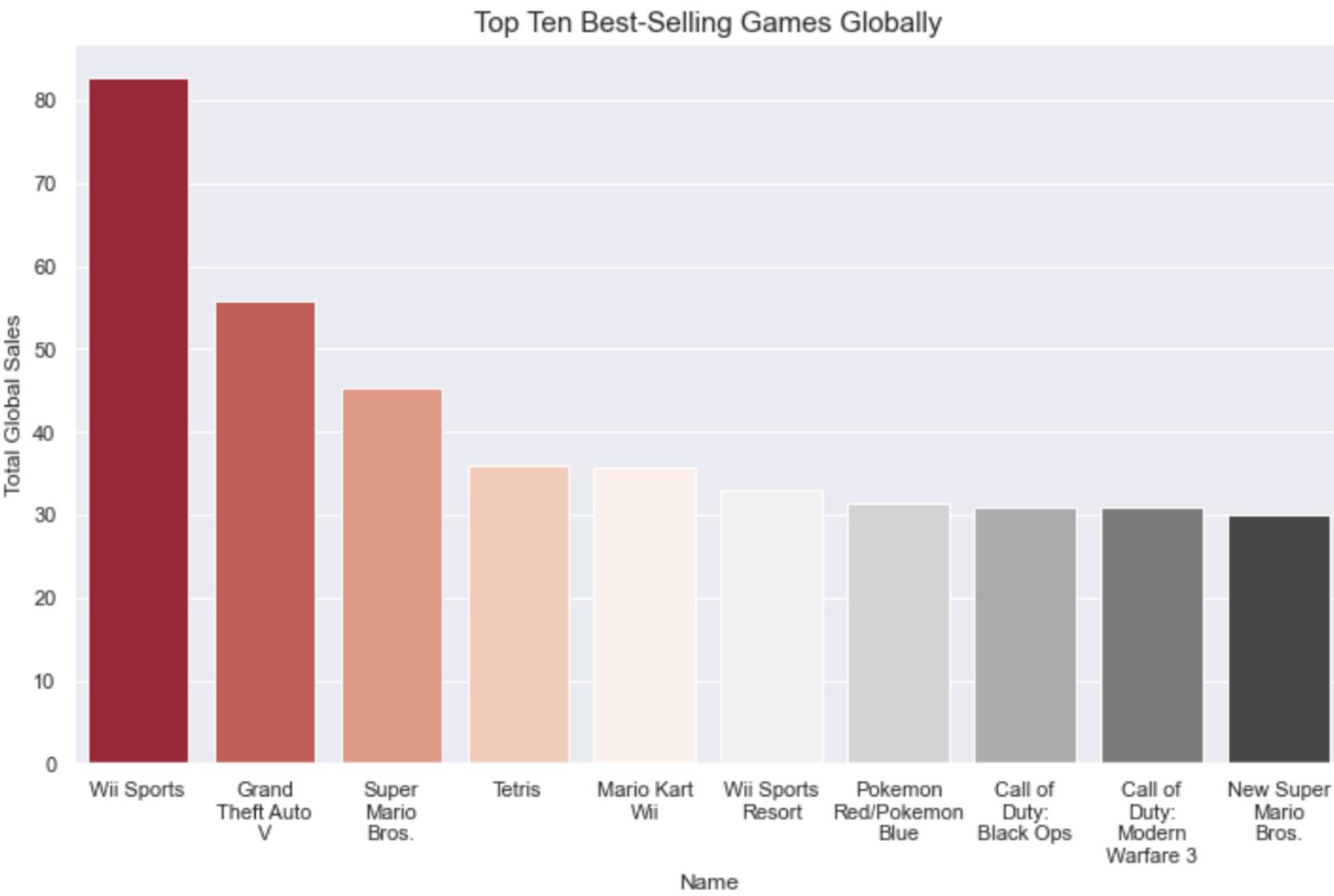
Unlike the first and second top-selling genres, the least selling genre was 'Puzzle' which was not the one the least number of games were released in (i.e. 'Strategy').



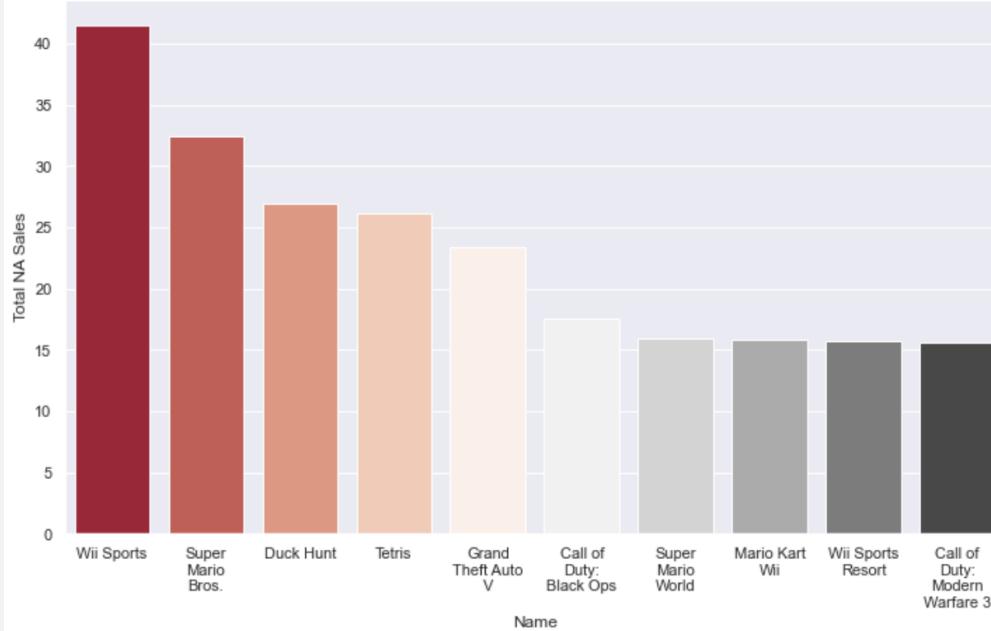
The trend is generally uniform in all the regions (i.e. 'Action' genre being the best-selling, followed by 'Sports', with 'Strategy' having the least sales) except in Japan where the 'Role-Playing' genre is the best-selling genre and far surpasses the second best-selling genre ('Action') with a huge lead.

Interestingly, the 'Strategy' genre is not the one with the least sales as well; the genre with the least sales in Japan actually goes to 'Shooter'. This is an interesting phenomenon which we can delve further into to see the possible drivers for the high sales in the 'Role-Playing' genre which seems to only occur in Japan.

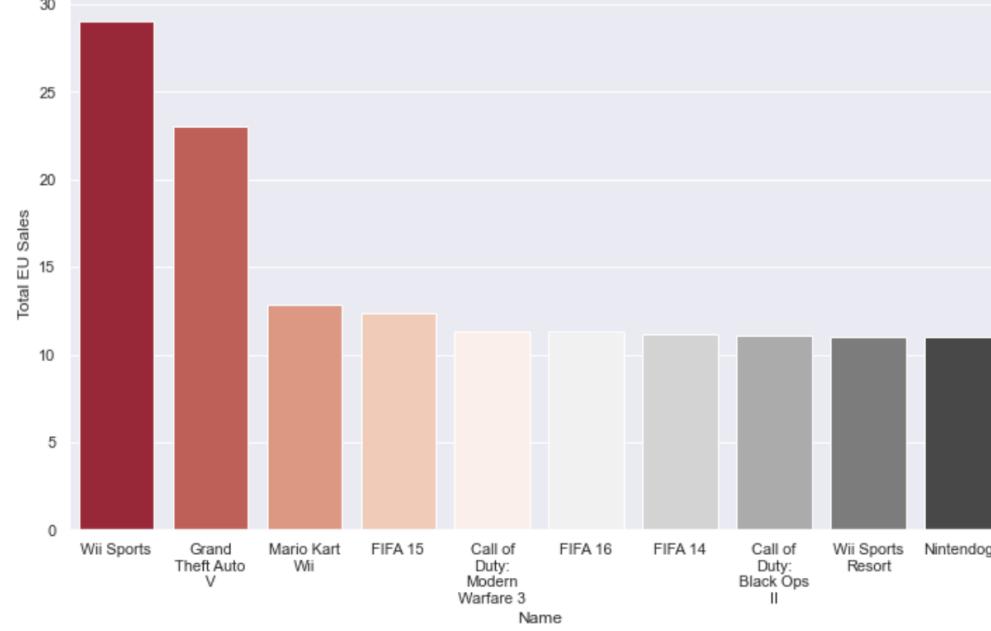
TOP TEN BEST-SELLING GAMES



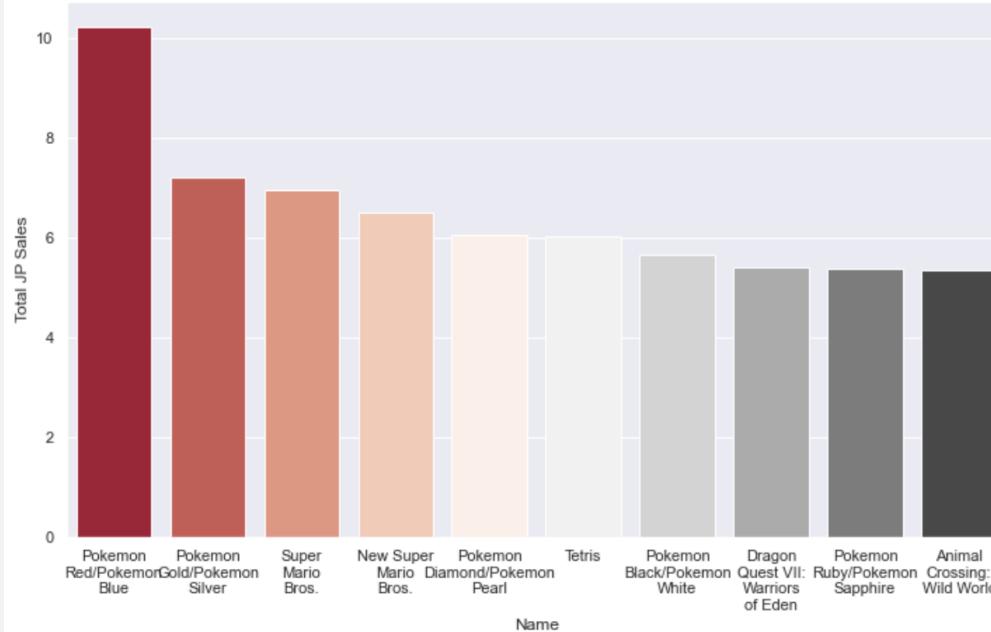
Top Ten Best-Selling Games in North America



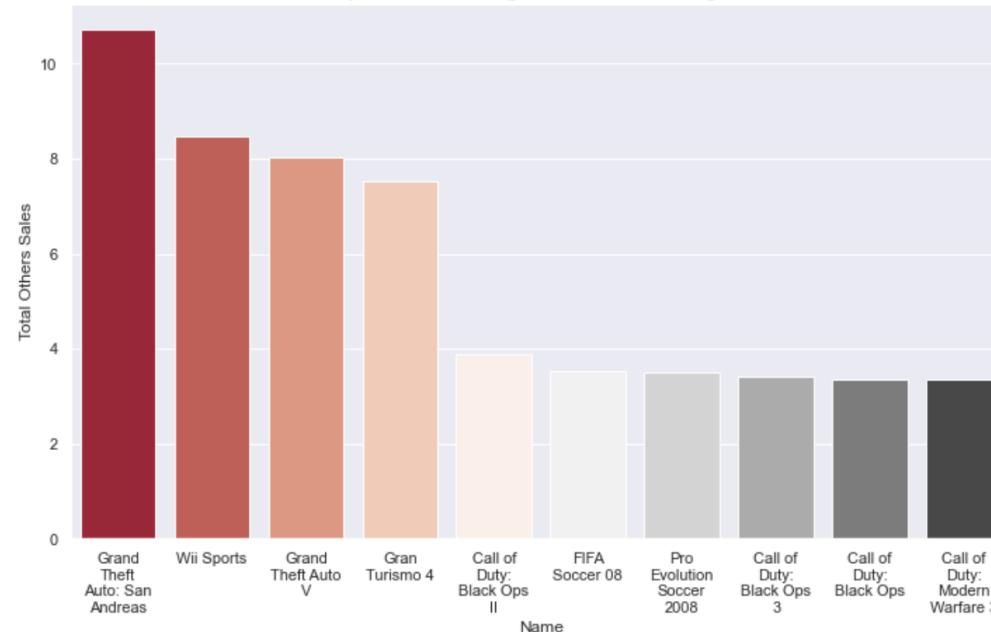
Top Ten Best-Selling Games in Europe



Top Ten Best-Selling Games in Japan



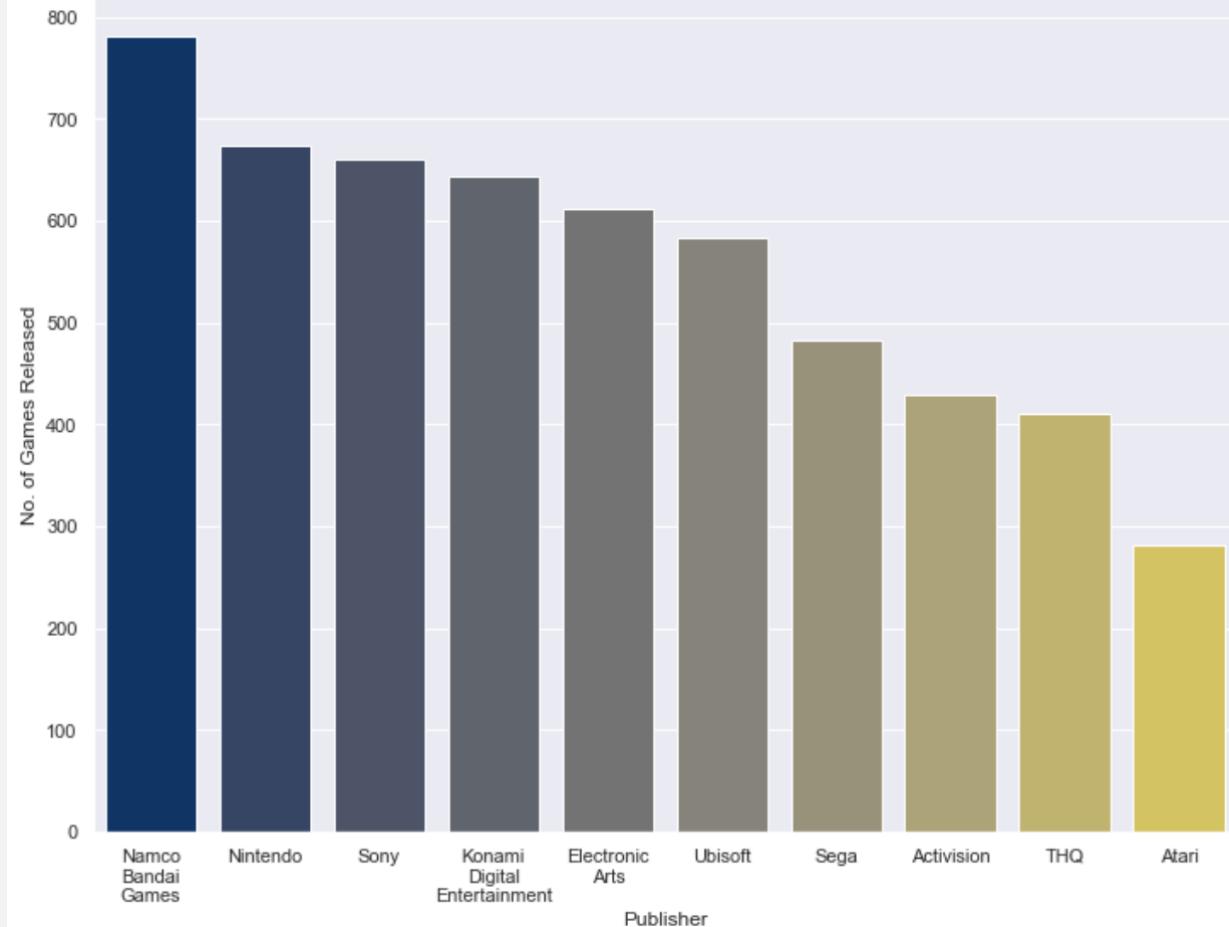
Top Ten Best-Selling Games in Other Regions



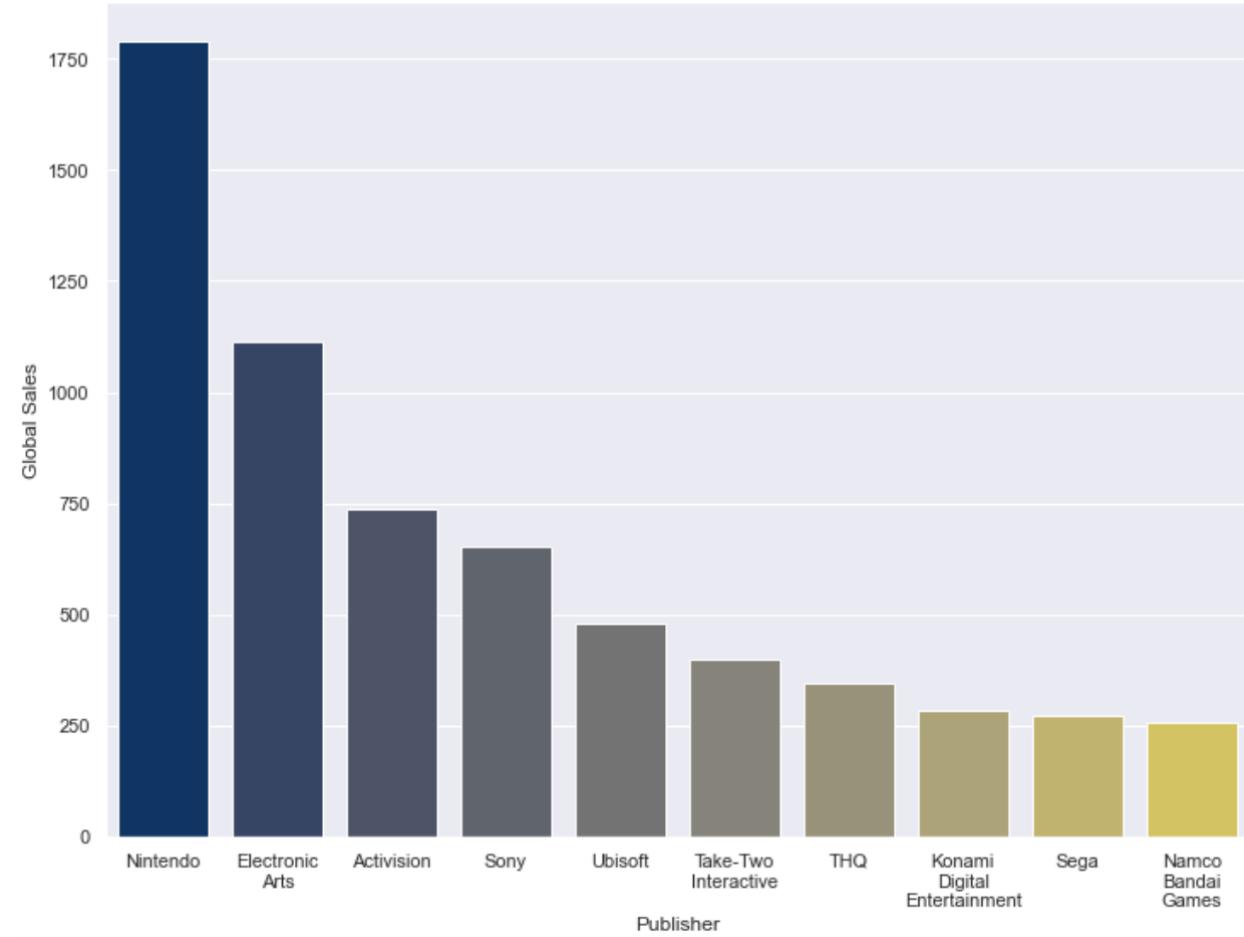
We can observe at least three of the global top ten best-selling games falling under the top-ten list in the various regions, with a few games appearing in more than one (e.g. Wii Sports in NA, EU and Others).

TOP TEN GAME PUBLISHERS

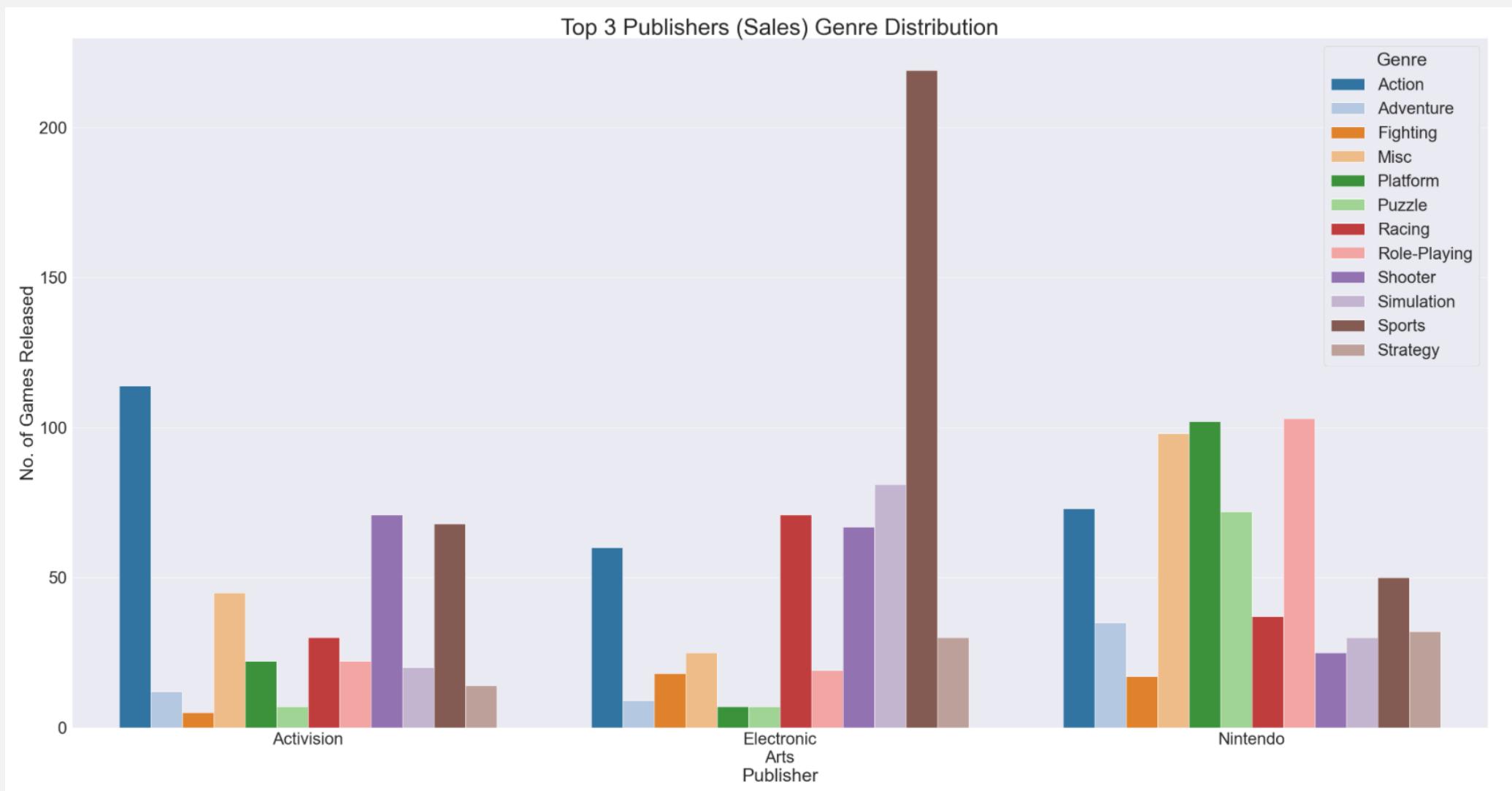
Top Ten Publishers - Games Release



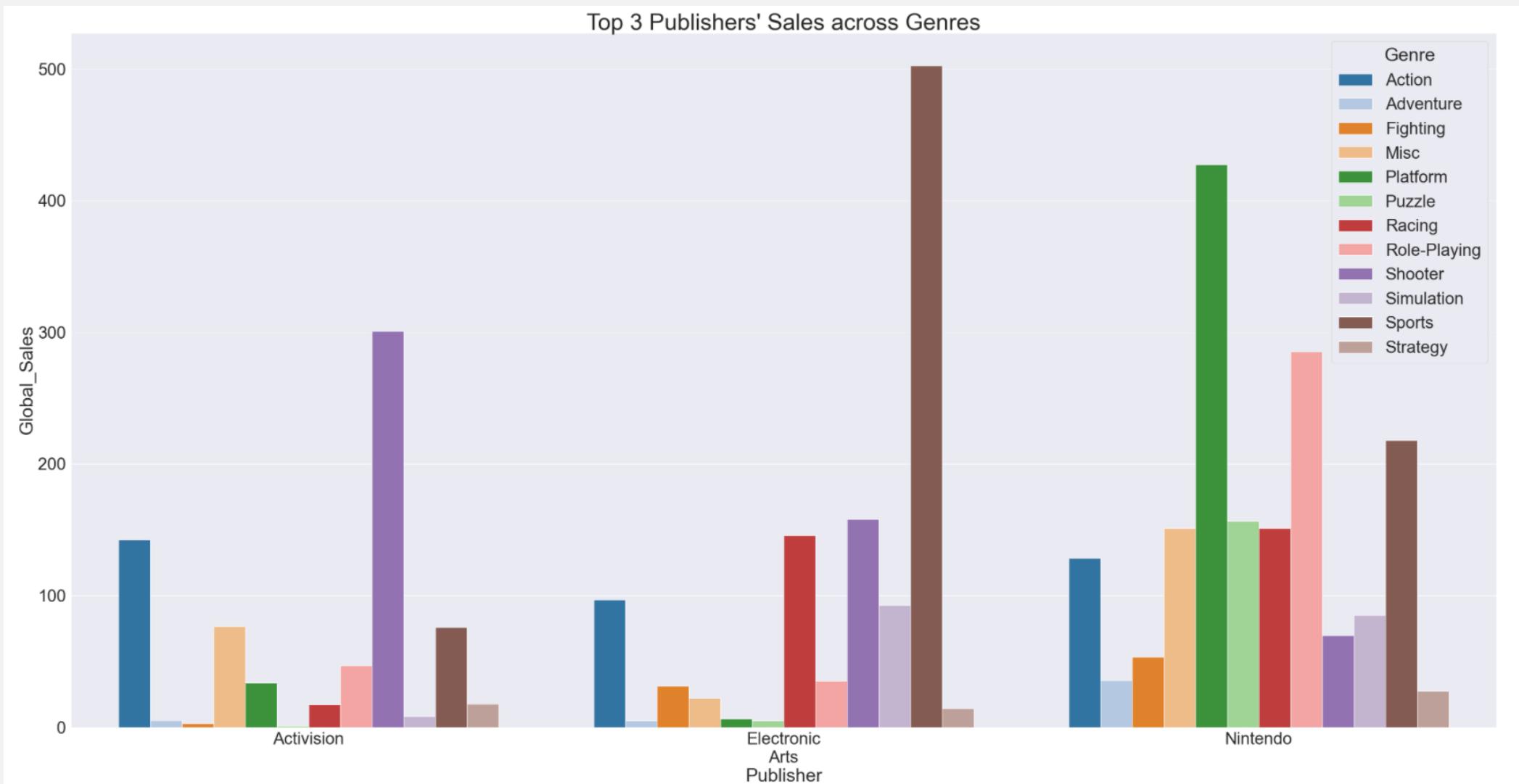
Top Ten Publishers - Global Sales



TOP THREE GAME PUBLISHERS – GENRE DISTRIBUTION



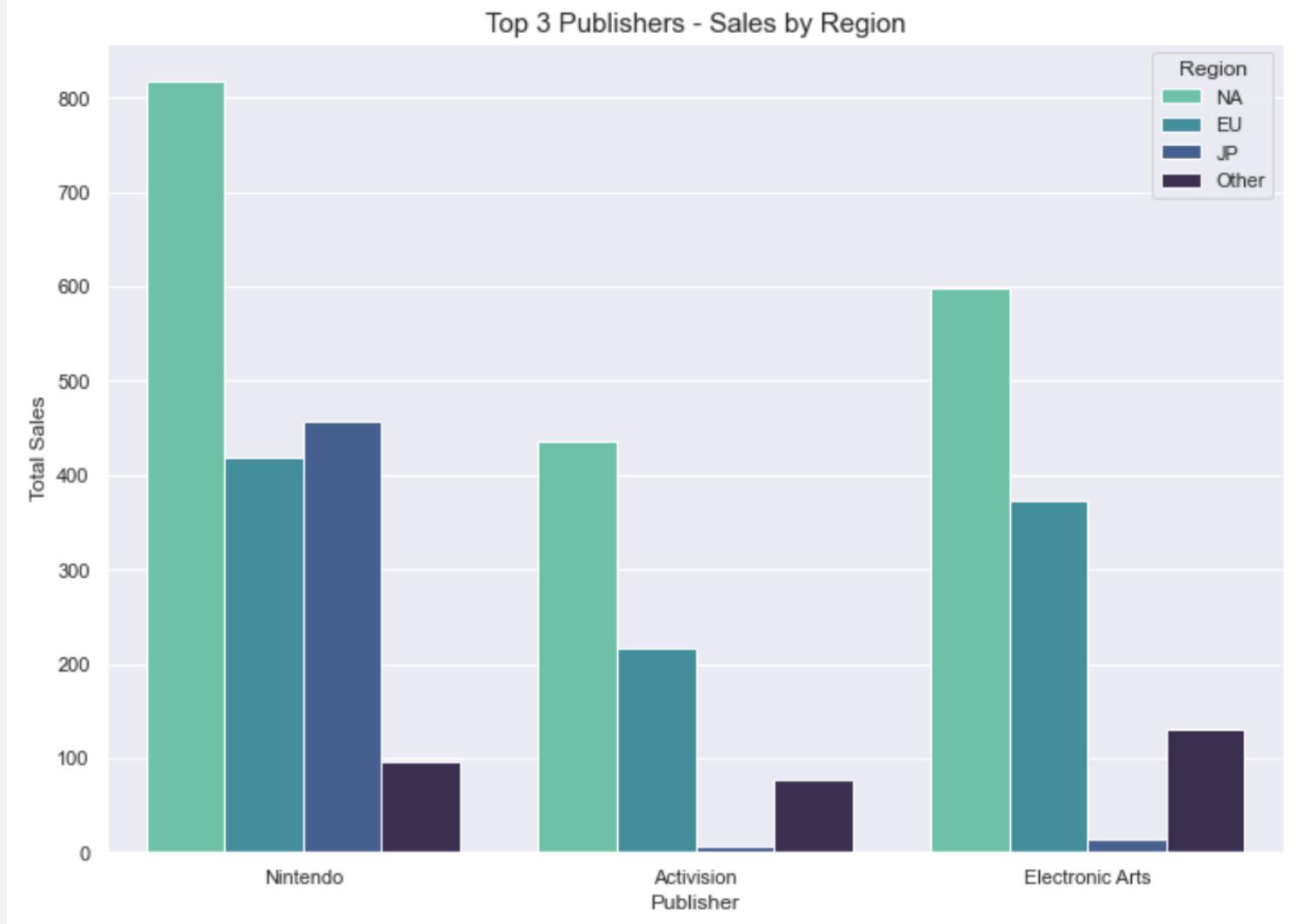
TOP THREE GAME PUBLISHERS – GENRE SALES



TOP THREE GAME PUBLISHERS

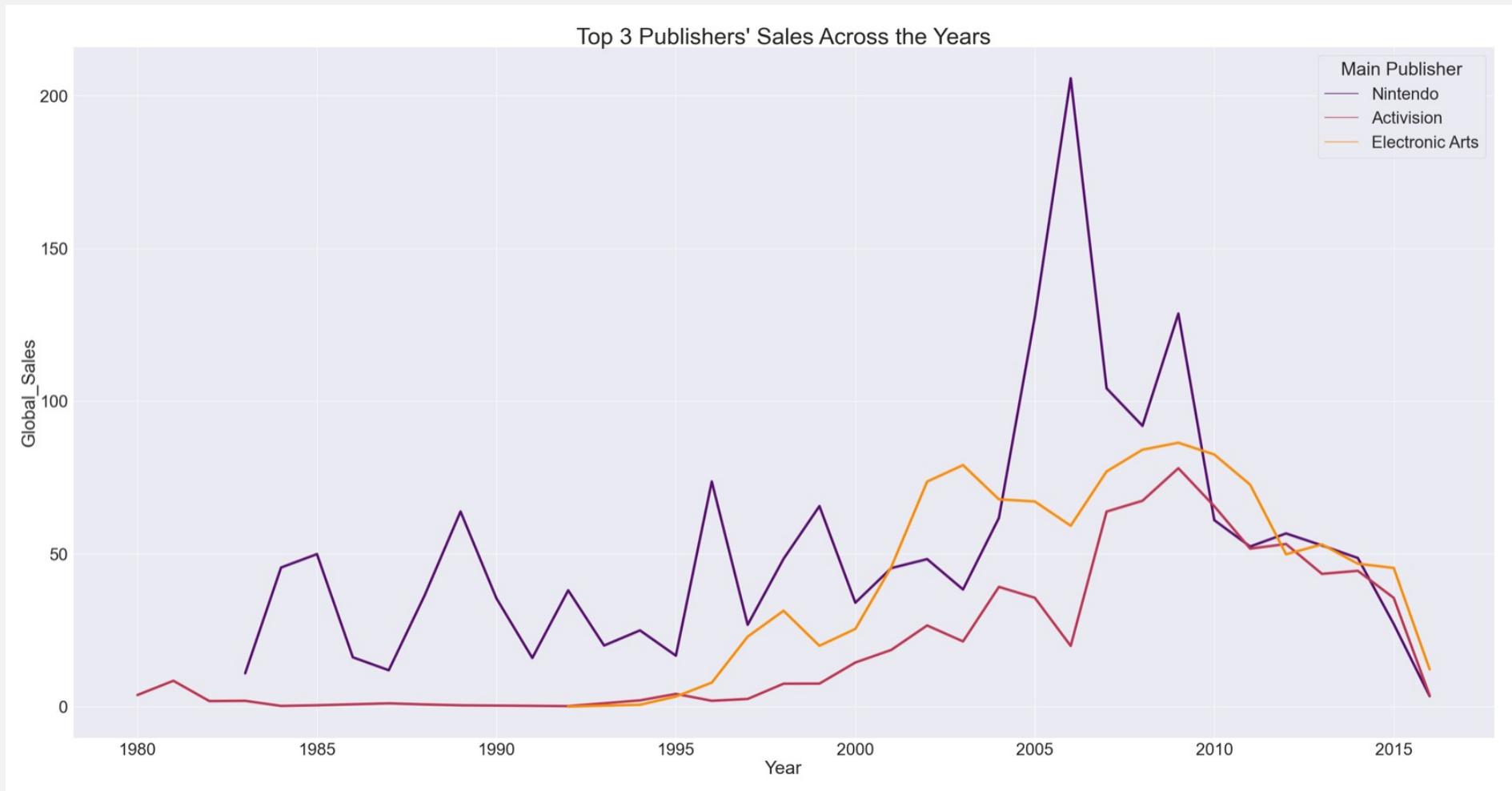
- While the 'Action' genre is the best-selling genre globally collectively, it does not reflect as so under the top three (sales-wise) game publishers' global sales
- Each top publisher has a best-selling genre different from each other which also highlights the genres of games that they specialise in
- Except for Electronic Arts, whose most released genre matches that of its best-selling, the other two publishers' best-selling genres are not their most released
- More interesting in Nintendo's case, given that it does not seem to focus on releasing games under a genre very much more than the others, but has exponential difference in sales between its best-selling genre and the rest

TOP THREE GAME PUBLISHERS – SALES BY REGION



Region-wise, the North American market is the biggest amongst the four for all three publishers with Nintendo fetching the highest in sales in the region – highlighting the influence and popularity of the publisher in the area, especially given that it is the only non-American publisher out of the three. On the contrary, the presence and influence of the other two publishers is the least in Japan.

TOP THREE GAME PUBLISHERS' SALES OVER TIME



All three publishers have different starting years from each other - Nintendo in 1983, Activision in 1980 and Electronic Arts in 1992 – with different hikes and dips, dependent on each publishers' events and timelines which we will take a deeper dive into individually.



NINTENDO



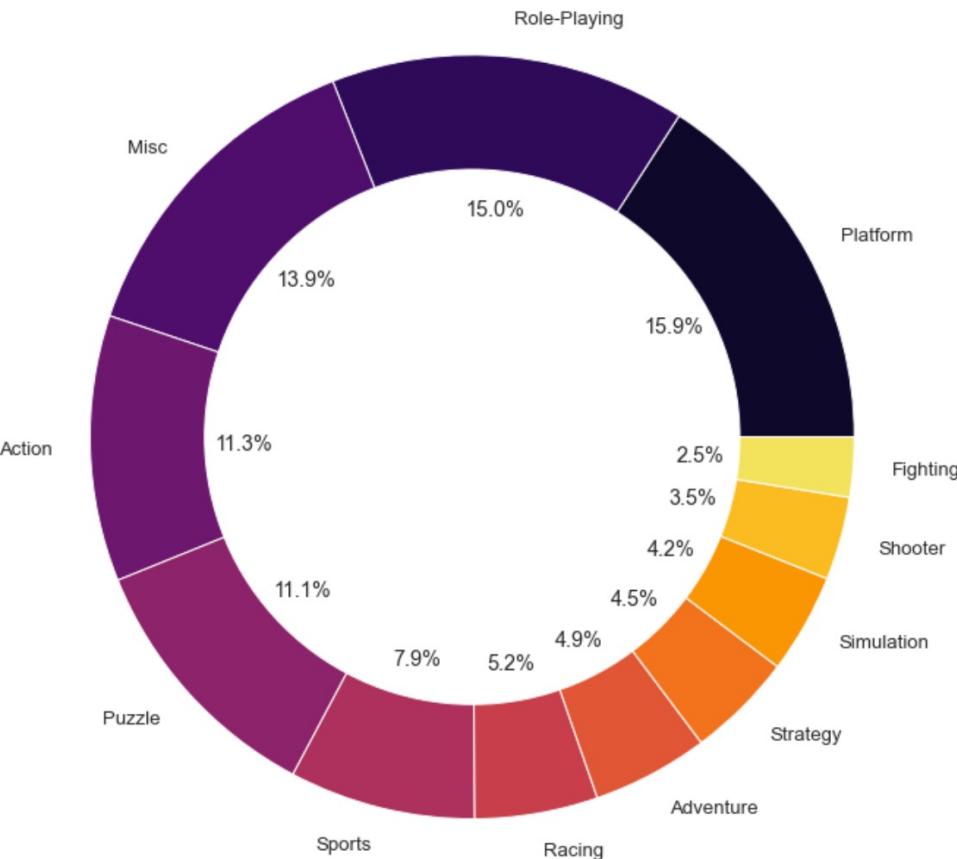
Founded in 1889 as Nintendo Karuta producing handmade hanafuda playing cards, Nintendo Co., Ltd is a Japanese multinational video game company headquartered in Kyoto which now releases both video games and video game consoles.

Its first console, the Color TV-Game was distributed in 1977 and the company gained international recognition with the release of Donkey Kong in 1981 and the Nintendo Entertainment System and Super Mario Bros in 1985.

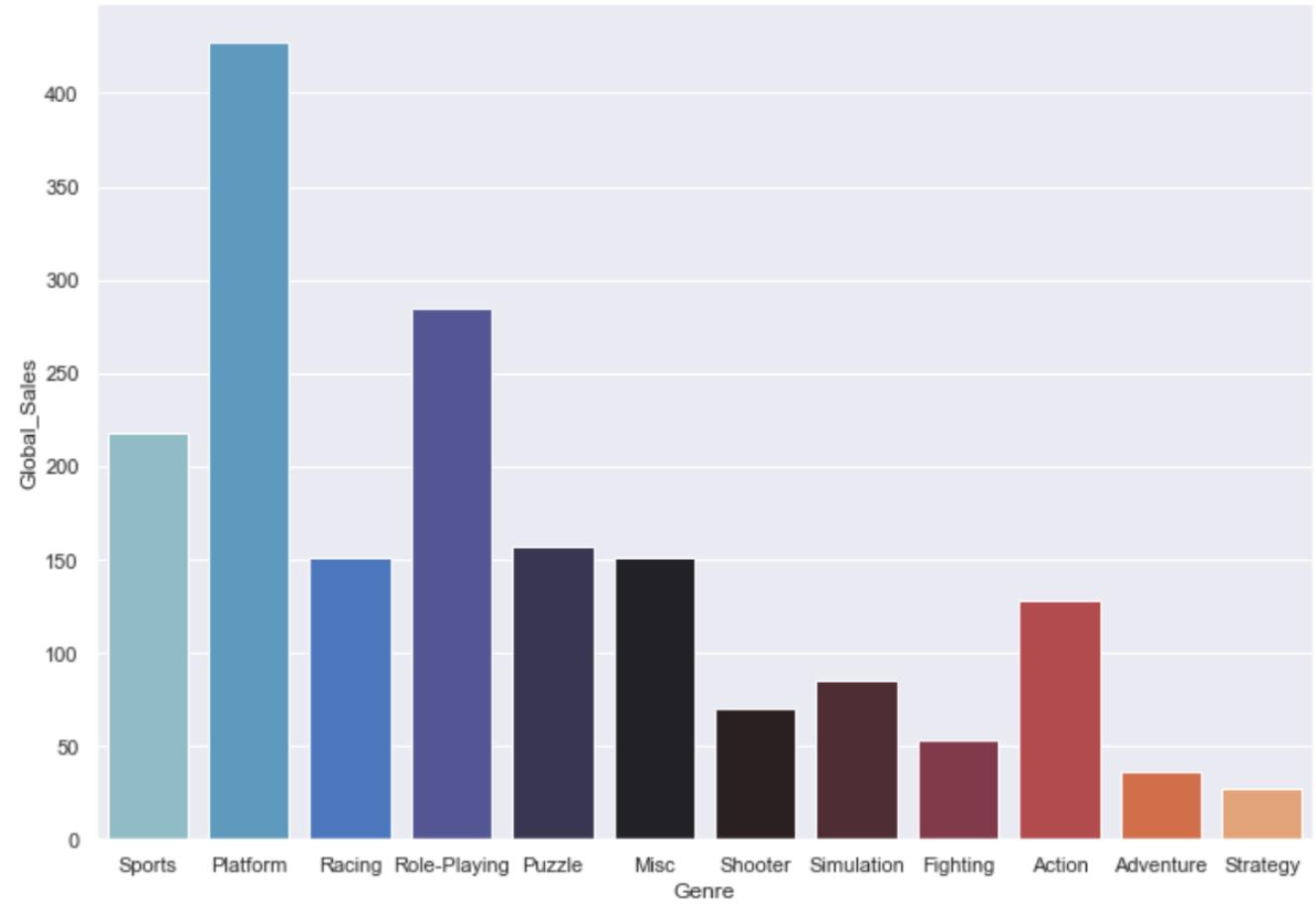
Some of its most successful consoles in the video game industry include the Game Boy, the Super Nintendo Entertainment System, the Nintendo DS, the Wii and the Switch. It has also created numerous major franchises such as Mario, Donkey Kong, The Legend of Zelda, Pokémon, Kirby, Metroid, Fire Emblem, Animal Crossing, Splatoon, Star Fox, Xenoblade Chronicles, and Super Smash Bros.

GENRE DISTRIBUTION & SALES

Game Genre Distribution - Nintendo

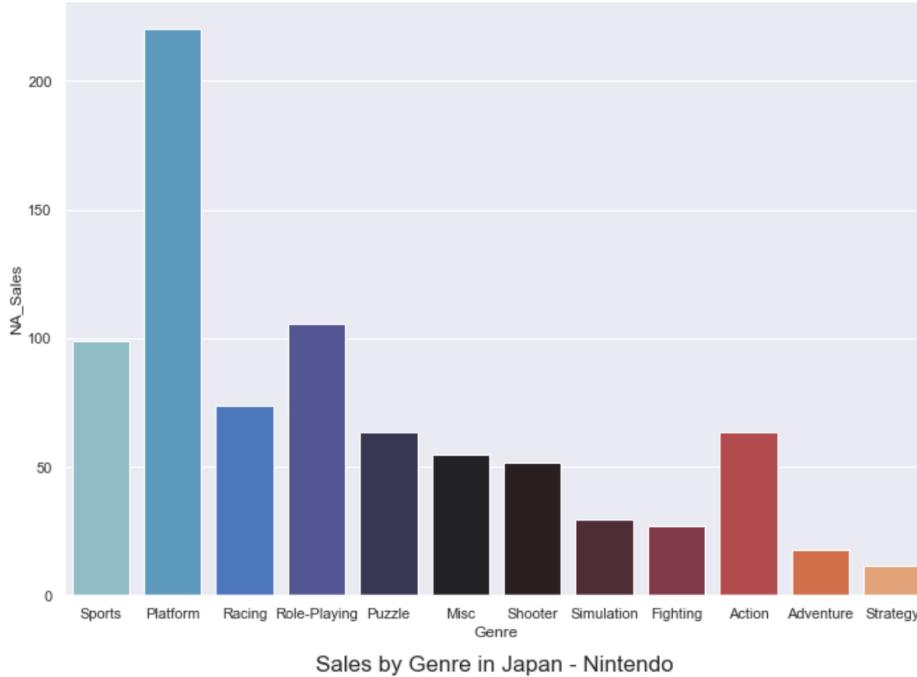


Sales by Genre Globally - Nintendo

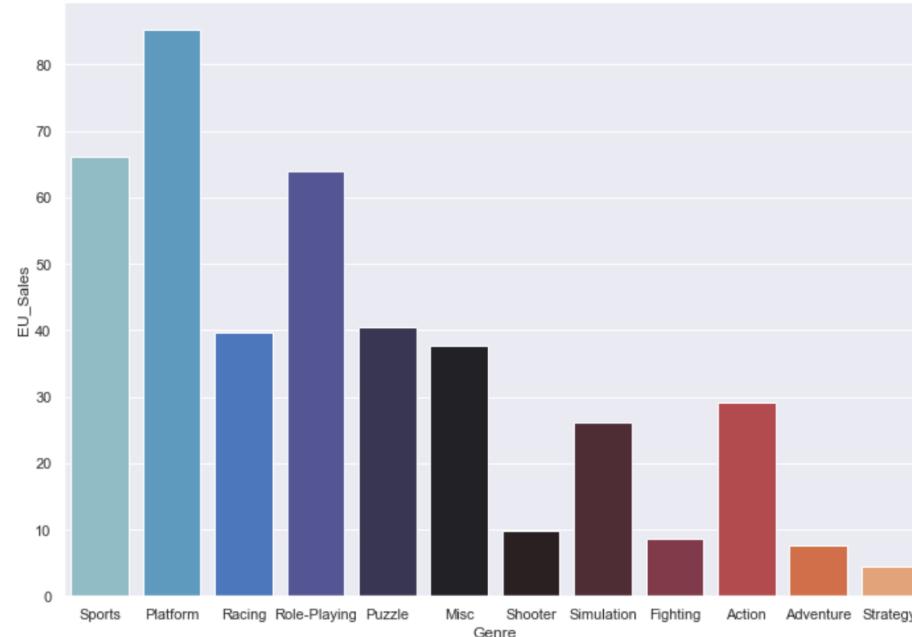


The best-selling genre goes to 'Platform' which constitutes to the most of the entire mix, followed closely by 'Role-Playing'. This could largely be due to most of the games under the genre being part of the company's successful franchises, notably the Mario franchise.

Sales by Genre in North America - Nintendo

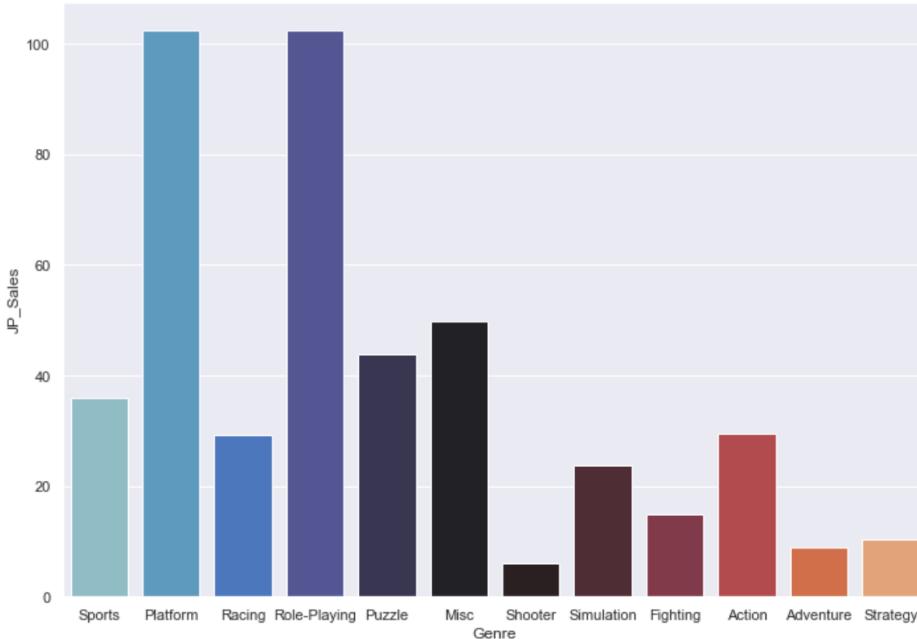


Sales by Genre in Europe - Nintendo

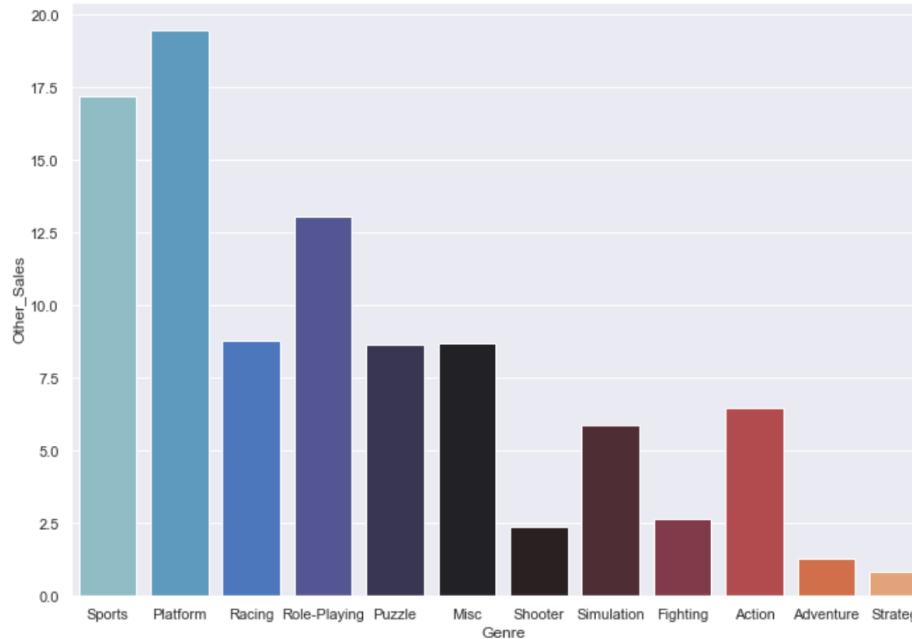


The trend is uniform in all regions, except in Japan where the sale of role-playing games is on par with platform games. This could also be the possible driver for role-playing games to be the second best-selling genre globally for Nintendo.

Sales by Genre in Japan - Nintendo



Sales by Genre in Other Regions - Nintendo

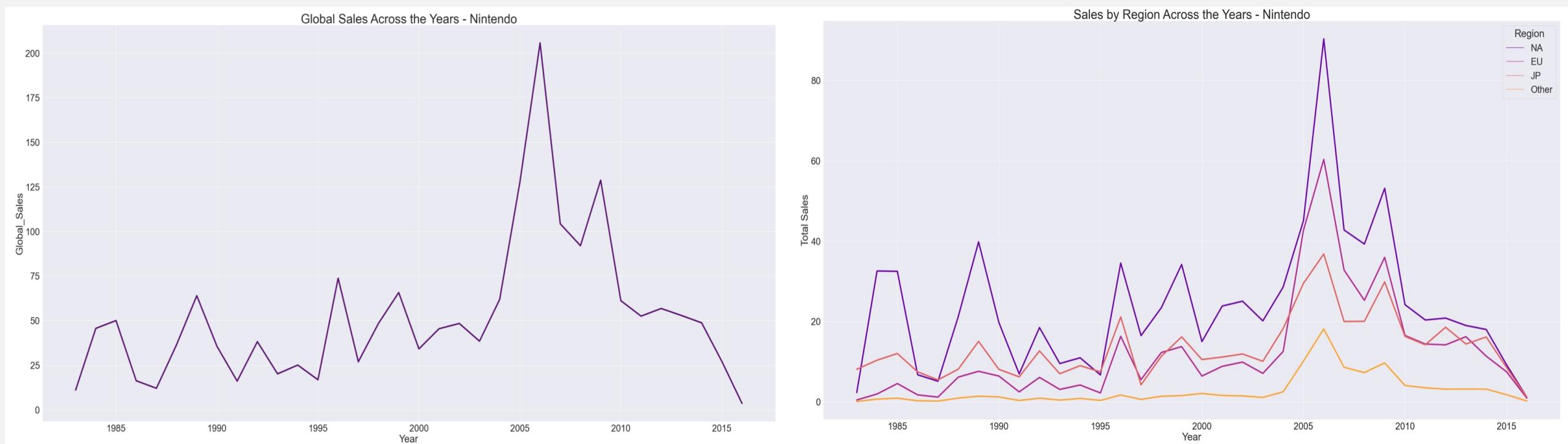


The high amount of sales could also be due to having games under another successful franchise of the company's, i.e. Pokémon.

Name	Genre	Franchise Name	NA Sales	EU Sales	JP Sales	Other Sales	Global Sales
Pokémon Red / Pokémon Blue	Role-Playing	Pokémon	11.27	8.89	10.22	1.00	31.37
Pokémon Gold / Pokémon Silver	Role-Playing	Pokémon	9.00	6.18	7.20	0.71	23.10
Pokémon Diamond / Pokémon Pearl	Role-Playing	Pokémon	6.42	4.52	6.04	1.37	18.36
Pokémon Ruby / Pokémon Sapphire	Role-Playing	Pokémon	6.06	3.90	5.38	0.50	15.85
Pokémon Black / Pokémon White	Role-Playing	Pokémon	5.57	3.28	5.65	0.82	15.32
Pokémon Yellow: Special Pikachu Edt	Role-Playing	Pokémon	5.89	5.04	3.12	0.59	14.64
Pokémon X / Pokémon Y	Role-Playing	Pokémon	5.17	4.05	4.34	0.79	14.35
Pokémon Omega Ruby / Pokémon Alpha Sapphire	Role-Playing	Pokémon	4.23	3.37	3.08	0.65	11.33
Pokémon FireRed / Pokémon LeafGreen	Role-Playing	Pokémon	4.34	2.65	3.15	0.35	10.49
Pokémon Black 2 / Pokémon White 2	Role-Playing	Pokémon	2.91	1.86	3.14	0.43	8.33

We can also surmise from the sales figure that the franchise is more popular in Japan than the other regions, given that the top 10 platform games sales fall under the franchise and the sales figures are almost on par with that of North America's – a pretty impressive feat given that the total population in North America is so much higher than that of Japan's.

SALES ACROSS THE YEARS



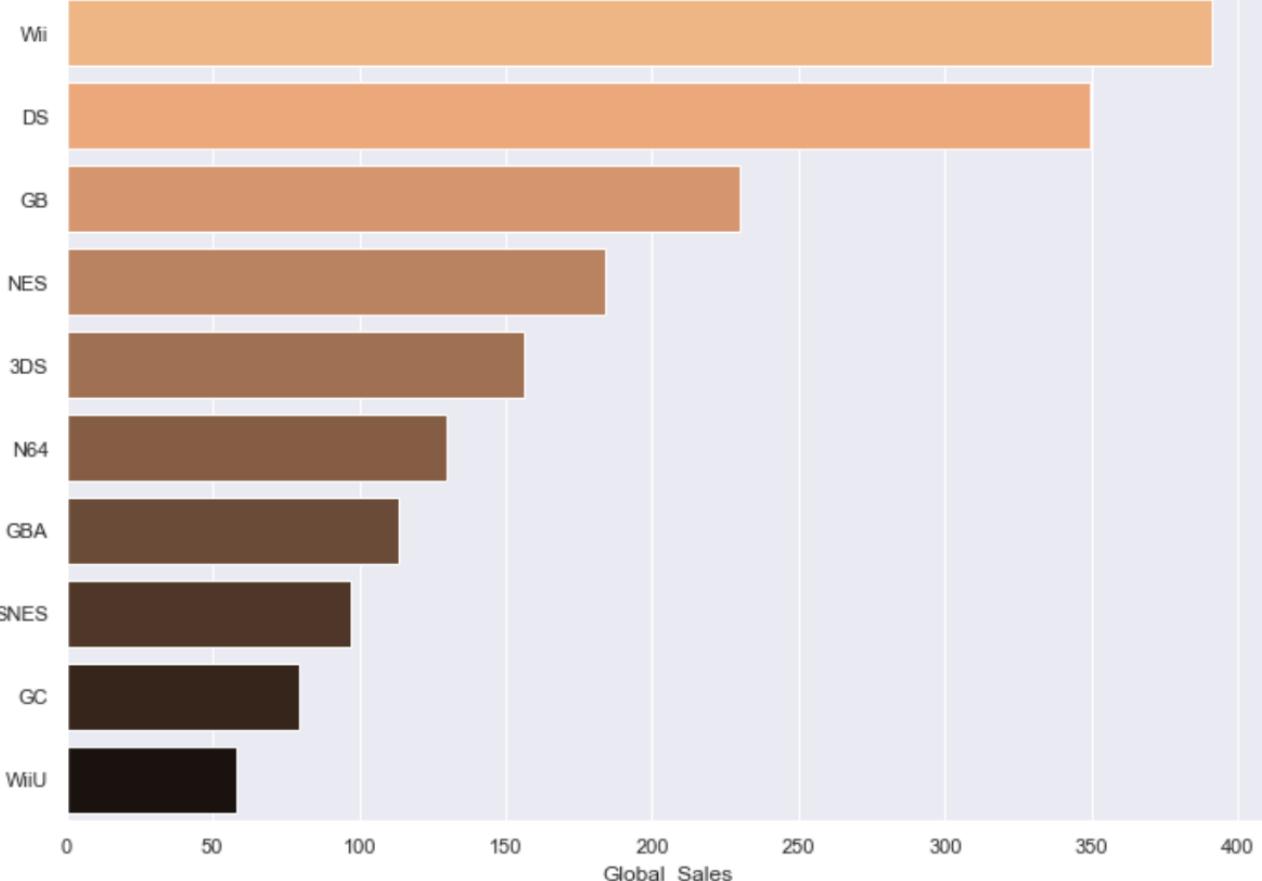
YEAR	NO. OF GAMES RELEASED
2005	46
2006	54
2007	43
2008	34
2009	32

Nintendo's highest sales recorded between 1983 to 2016 were from 2005 to 2009, with its peak in 2006. This was mainly due to the release of Wii in the same year; this has always been an advantage for Nintendo – with every release of a new console, consumers will definitely have to purchase games published by them in order to enjoy their new gadgets. They will also have to constantly publish new games for the platform subsequently to retain consumers' interest. We can see this from how the number of games released in 2006 was the highest when the console was released, followed by 2005 (a year after the DS console was released) and that the Wii franchise held the highest global sales during this five-year period – this doesn't include games released for the platform under other franchises.

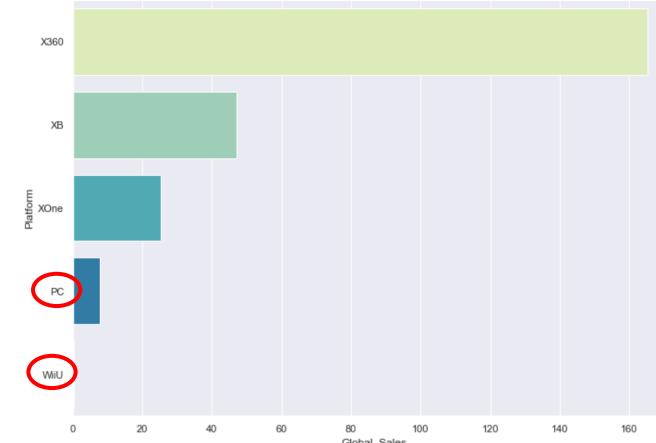
The steady fall and decline in game releases subsequently from 2007 to 2009 can be attributed to the recession which lasted till mid-2009, seemingly explaining the pick up in sales from 2008.

PLATFORM SALES

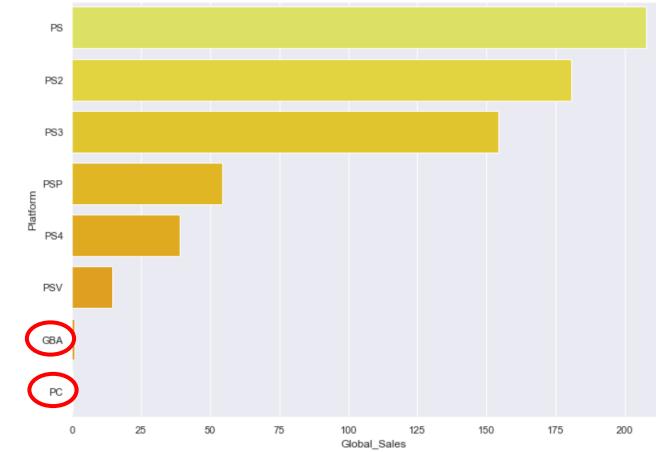
All-Time Sales by Platform - Nintendo



All-Time Sales by Platform - Microsoft



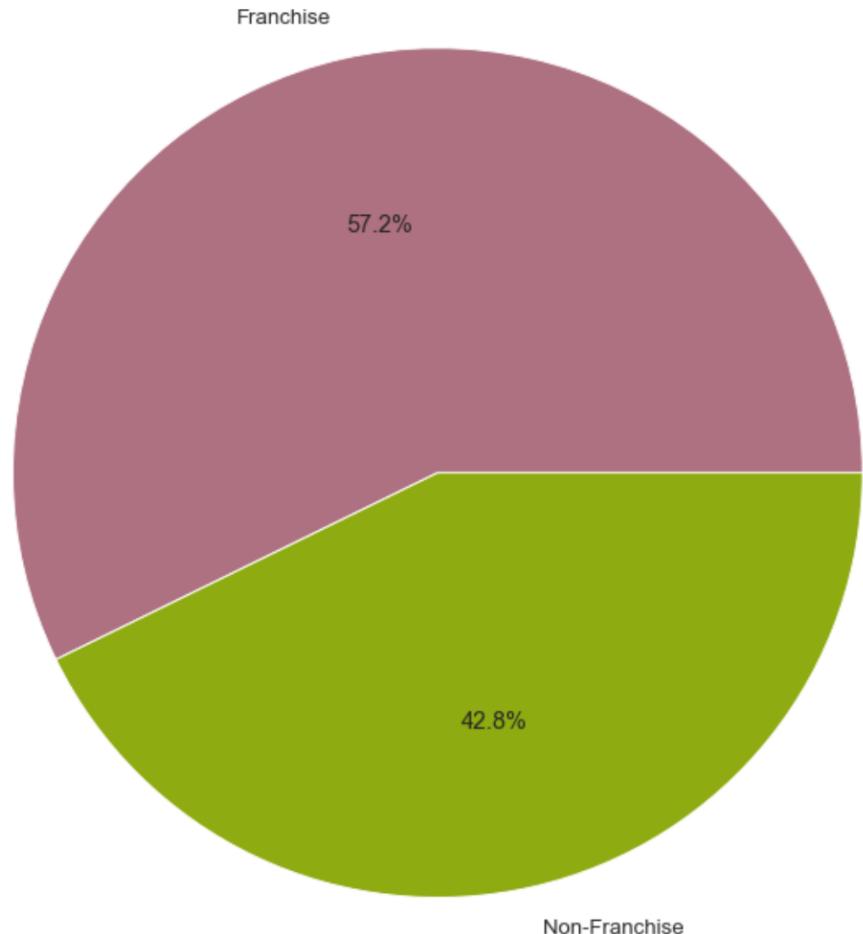
All-Time Sales by Platform - Sony



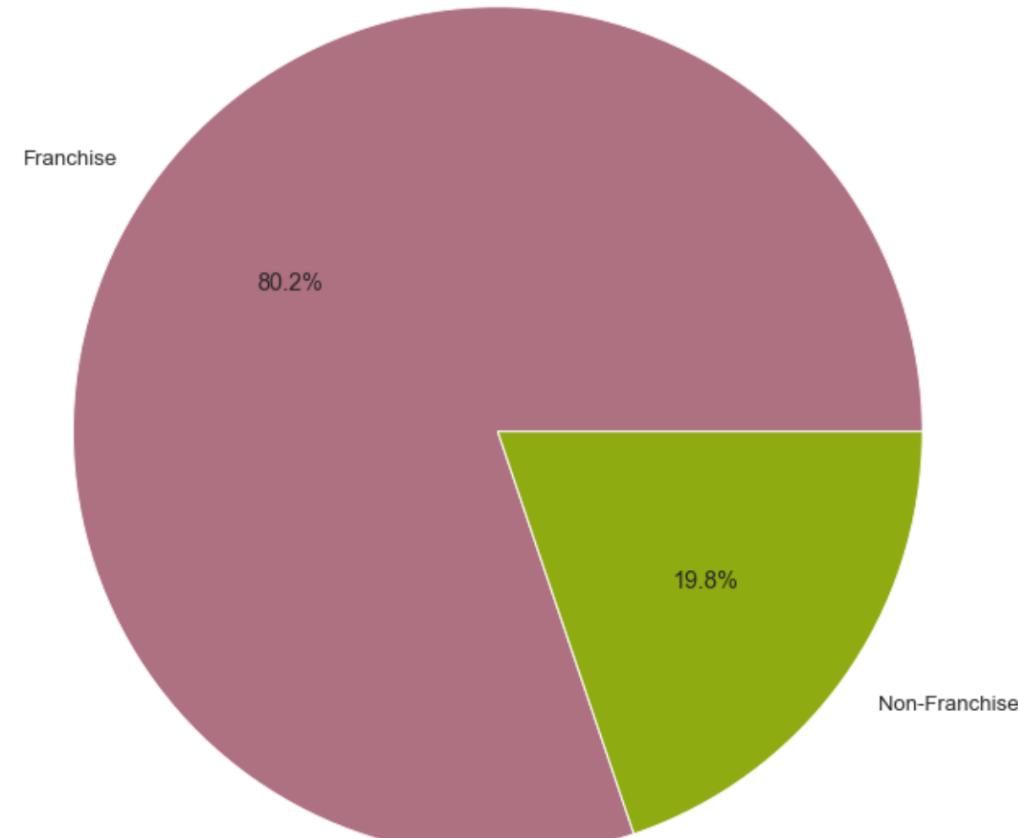
Nintendo's sales are generally monopolised by Wii and DS games and it does not seem to publish any games for platforms outside of its own consoles – unlike Sony (PlayStation) and Microsoft (Xbox), albeit negligible sales figures. It is, however, remarkable for Wii sales to surpass that of DS, given that the latter had a two-year head start in the market – though it is also very dependable on the types of games released for each platform and the target audience the games hope to reach. Data only reaches 2016, thus excluding sales by Switch, which was first released in 2017.

FRANCHISE SALES & DISTRIBUTION

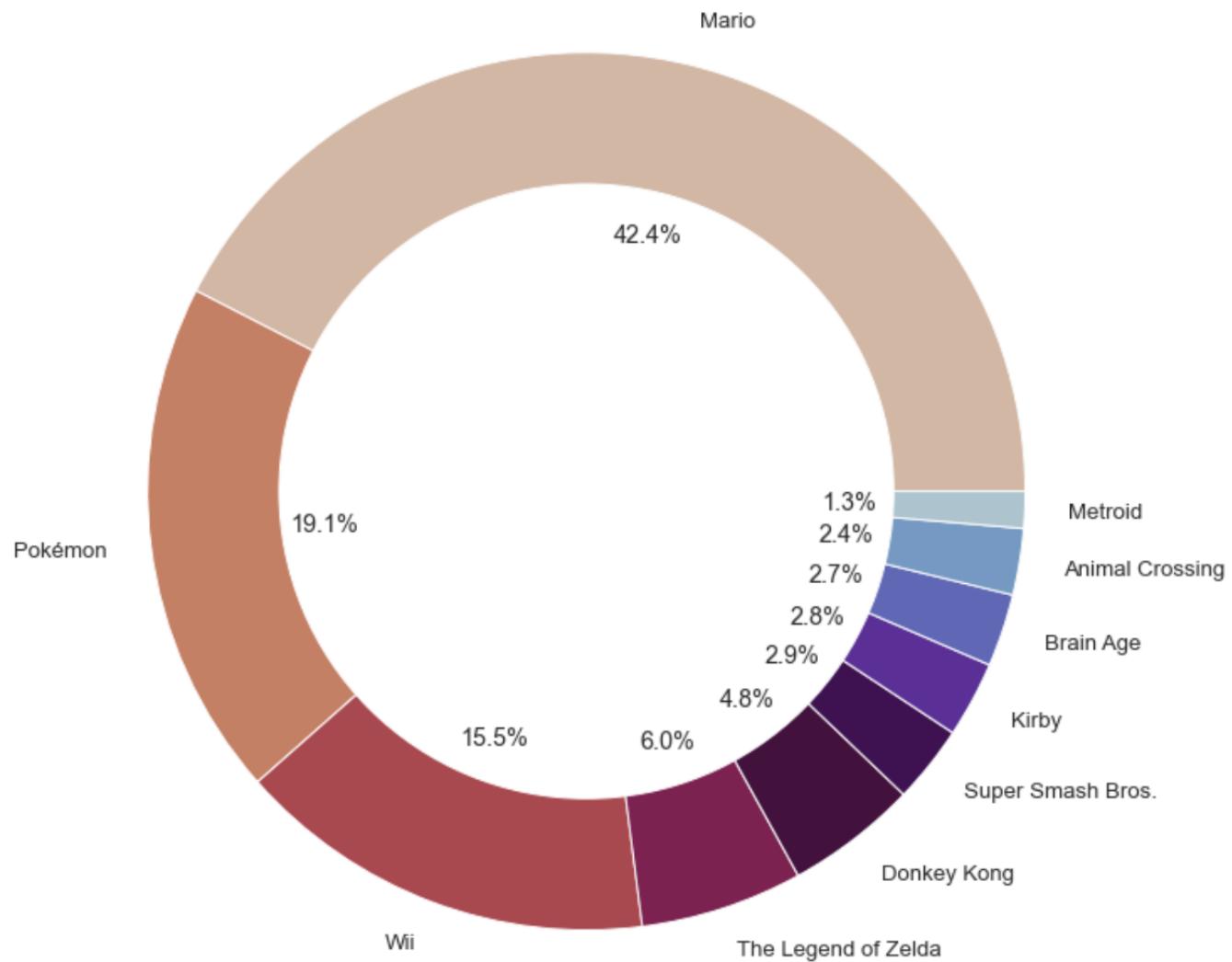
Game Release Distribution - Nintendo



Game Sales Contribution - Nintendo



Top 10 Franchise Sales - Nintendo



While the difference in franchise and non-franchise releases is relatively small, Nintendo's main sales contributors are the games released under their franchises, with Mario taking the biggest lead. This makes it all the more impressive regarding the longevity of Mario's popularity, given that its first game was released in 1985 and also highlighted the success of the Wii franchise (which has been discontinued since 2013) with the high amount of sales it had raked up despite being only released in 2006.



ELECTRONIC ARTS

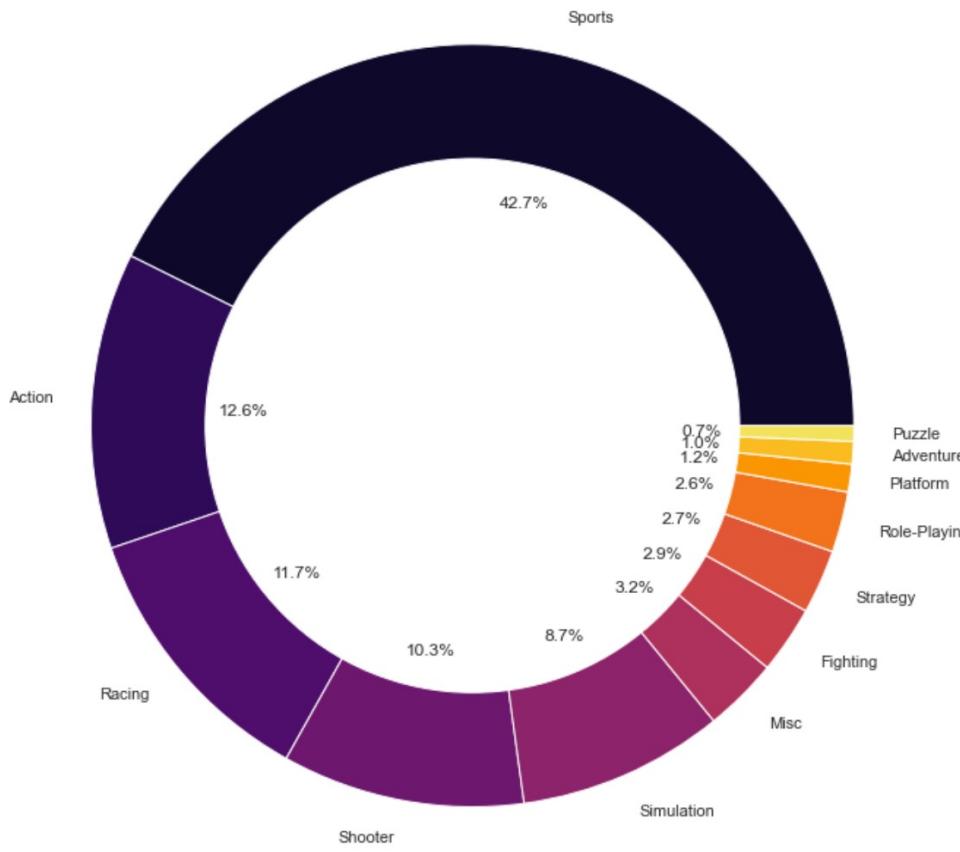
Founded in 1982 by Apple employee Trip Hawkins, Electronic Arts Inc. (EA) is an American video game company headquartered in Redwood City, California. The company was a pioneer of the early home computer game industry and published numerous games and some productivity software for personal computers, all of which were developed by external individuals or groups until 1987's *Skate or Die!*.

EA currently develops and publishes games of established franchises, including *Battlefield*, *Need for Speed*, *The Sims*, *Medal of Honor*, *Command & Conquer*, *Dead Space*, *Mass Effect*, *Dragon Age*, *Army of Two*, *Apex Legends*, and *Star Wars*, as well as the EA Sports titles *FIFA*, *Madden NFL*, *NBA Live*, *NHL*, and *EA Sports UFC*.

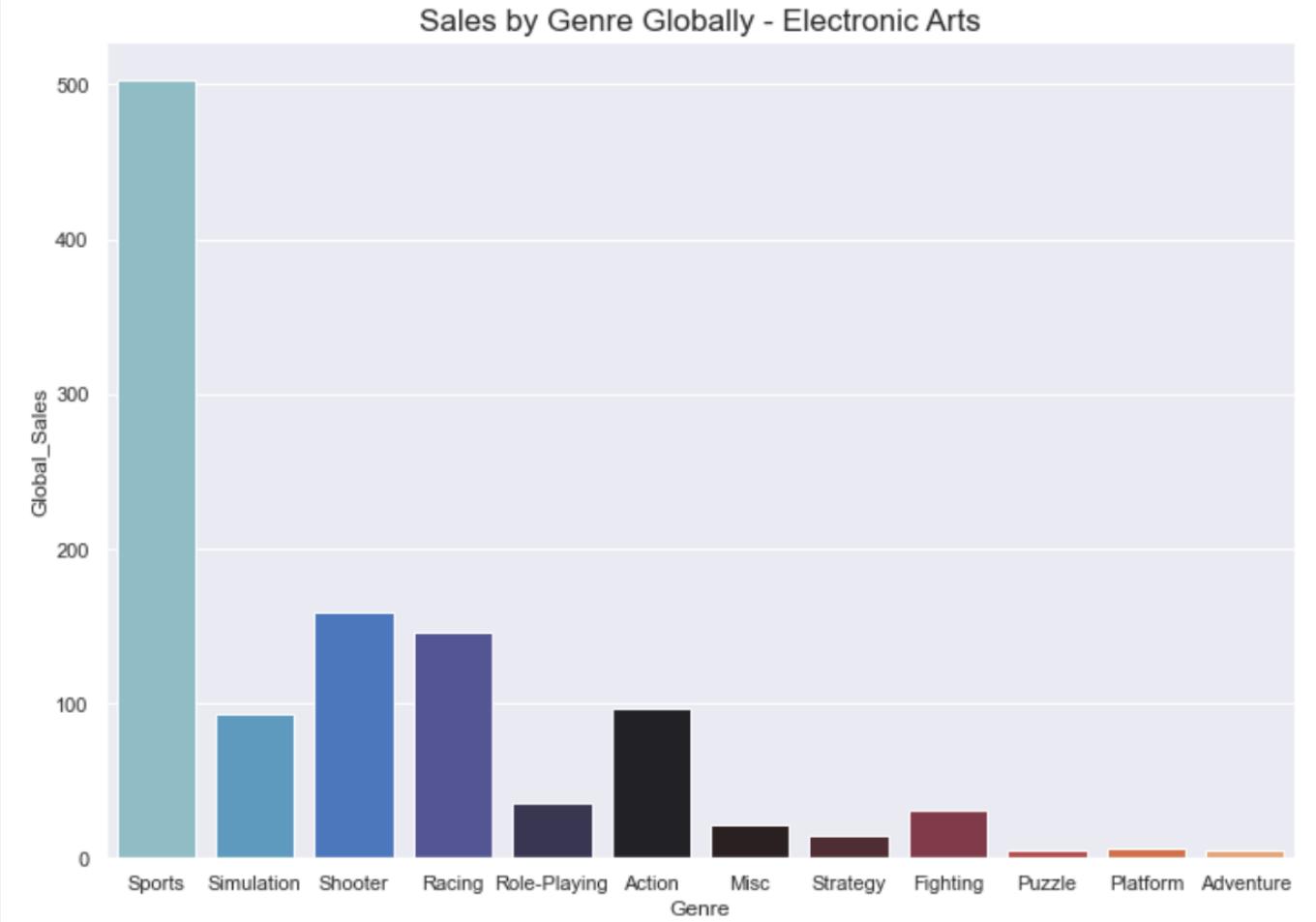


GENRE DISTRIBUTION & SALES

Game Genre Distribution - Electronic Arts

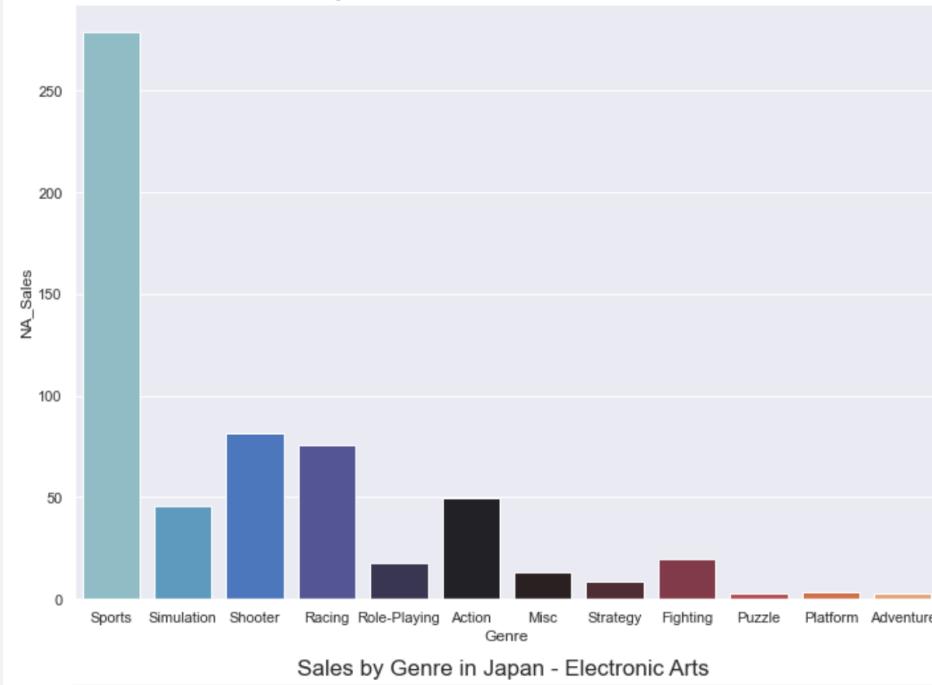


Sales by Genre Globally - Electronic Arts

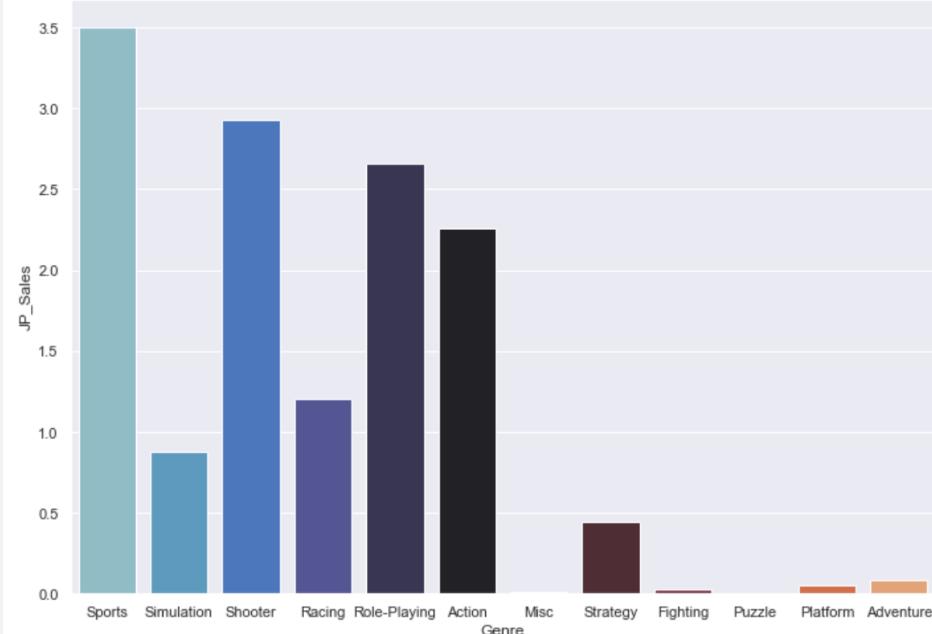


EA seems to be largely focused on the 'Sports' genre as it is their most released genre and also their best-selling genre, with majority of the top 10 best-selling games being from it.

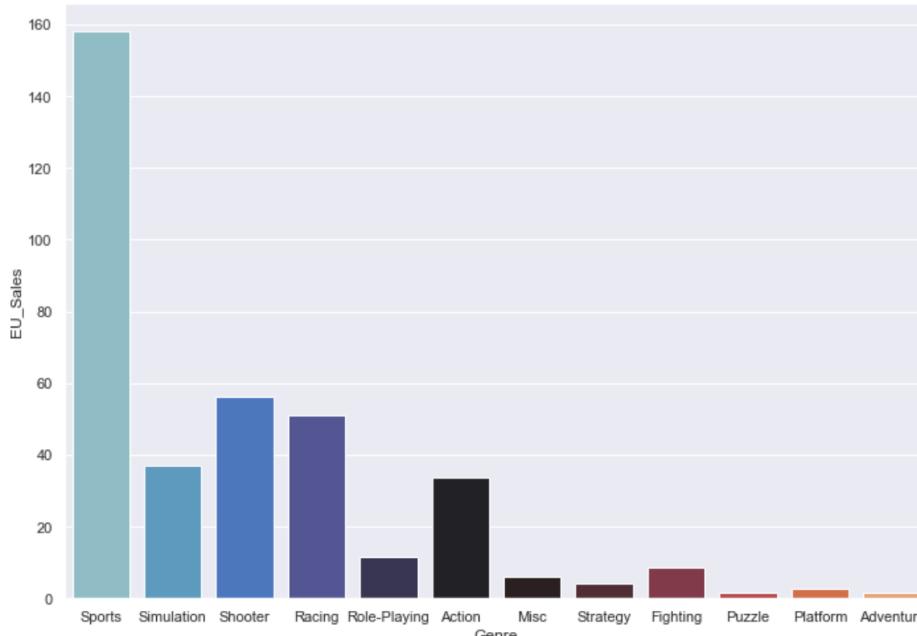
Sales by Genre in North America - Electronic Arts



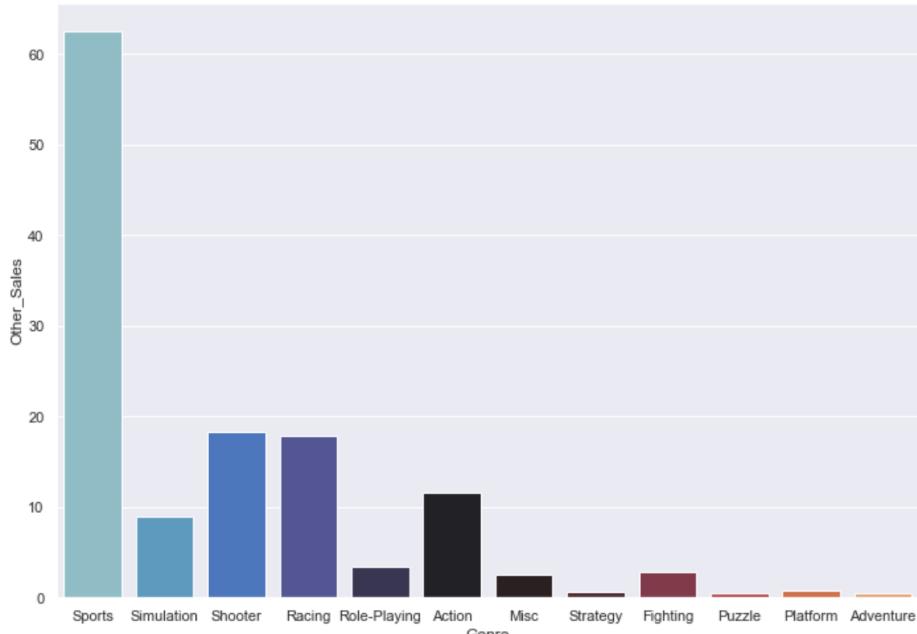
Sales by Genre in Japan - Electronic Arts



Sales by Genre in Europe - Electronic Arts



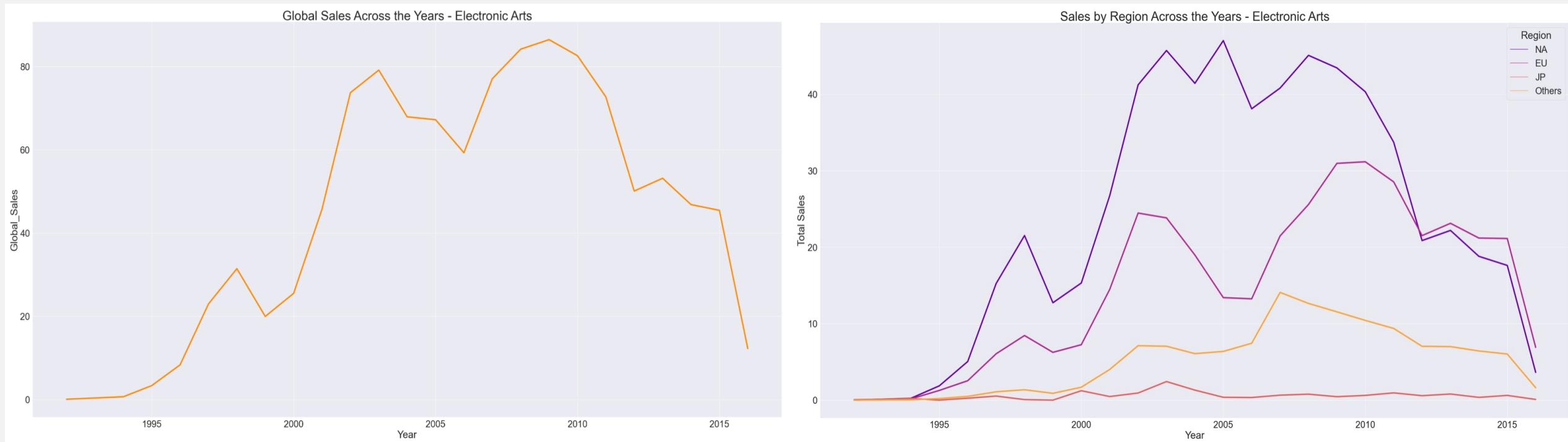
Sales by Genre in Other Regions - Electronic Arts



The genre has a huge lead in all regions except in Japan where it's followed closely by the genres 'Shooter' and 'Role-Playing'. We can also see that the Japanese audience seems to be more receptive / open to other genres published by the company as compared to the other three.

The high sales of the 'Sports' genre can be attributed to the numerous games released which are part of the company's successful franchises, namely FIFA. It is also brings in a steady stream of income given that the game is released annually.

SALES ACROSS THE YEARS

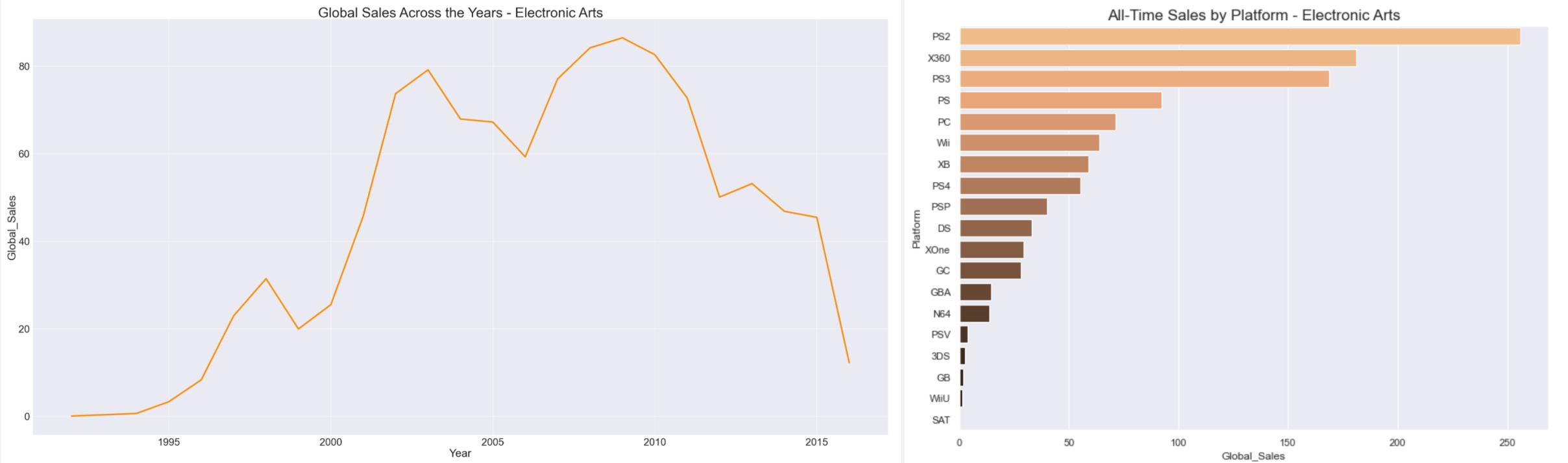


GAME	GLOBAL SALES
Medal of Honor: Frontline	8.91
Harry Potter & the Chamber of Secrets	7.64
The Lord of the Rings: The Two Towers	6.65

Like Nintendo, EA's biggest market is the North American. The sharpest inclination on the graph was from 2000 - 2002, when EA published double the number of games in 2002 than it did the year before (27, 24 and 48 respectively), with the top 3 best-selling games that year largely dominated by games from its popular franchises and games that were based on the popular films that were released in the same year – especially the latter whose sales rode off on the success of the films that were released first.

The sharp inclination could also be due to the release of the PlayStation 2 in 2000; the console received widespread critical acclaim upon release and a total of over 4,000 game titles were released worldwide, with over 1.5 billion copies sold (source: Wikipedia).

SALES ACROSS THE YEARS & PLATFORM SALES

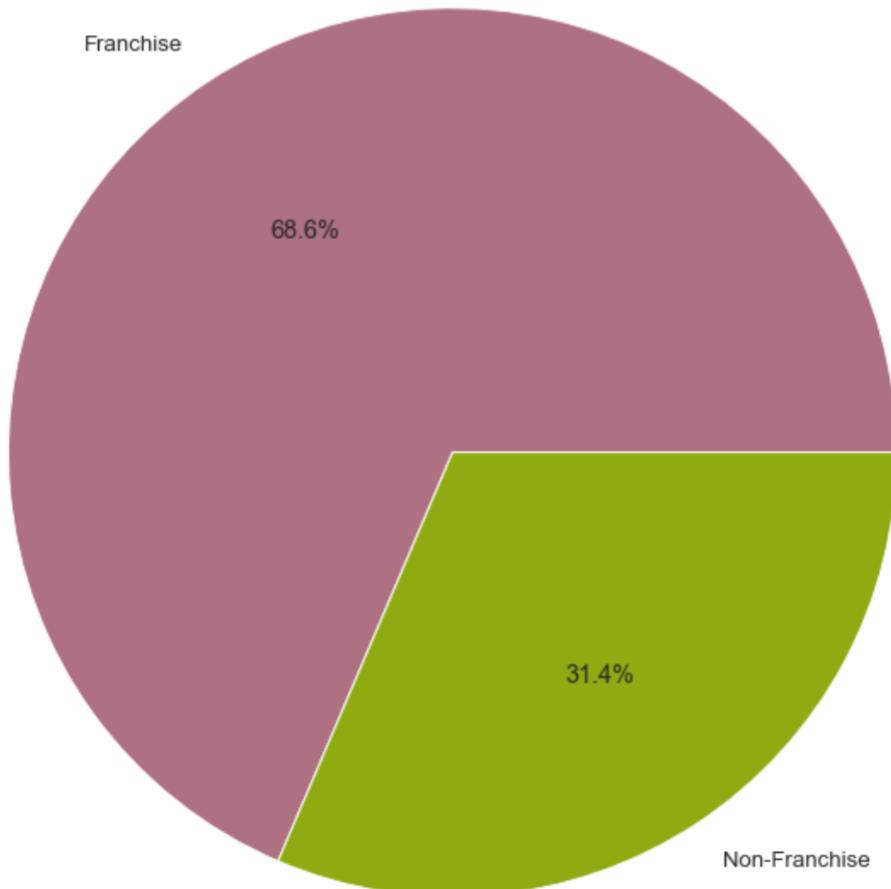


PS2 is also the best-selling platform for EA, further backing the possibility of its release being one of the drives behind the steep increase in global sales during the period.

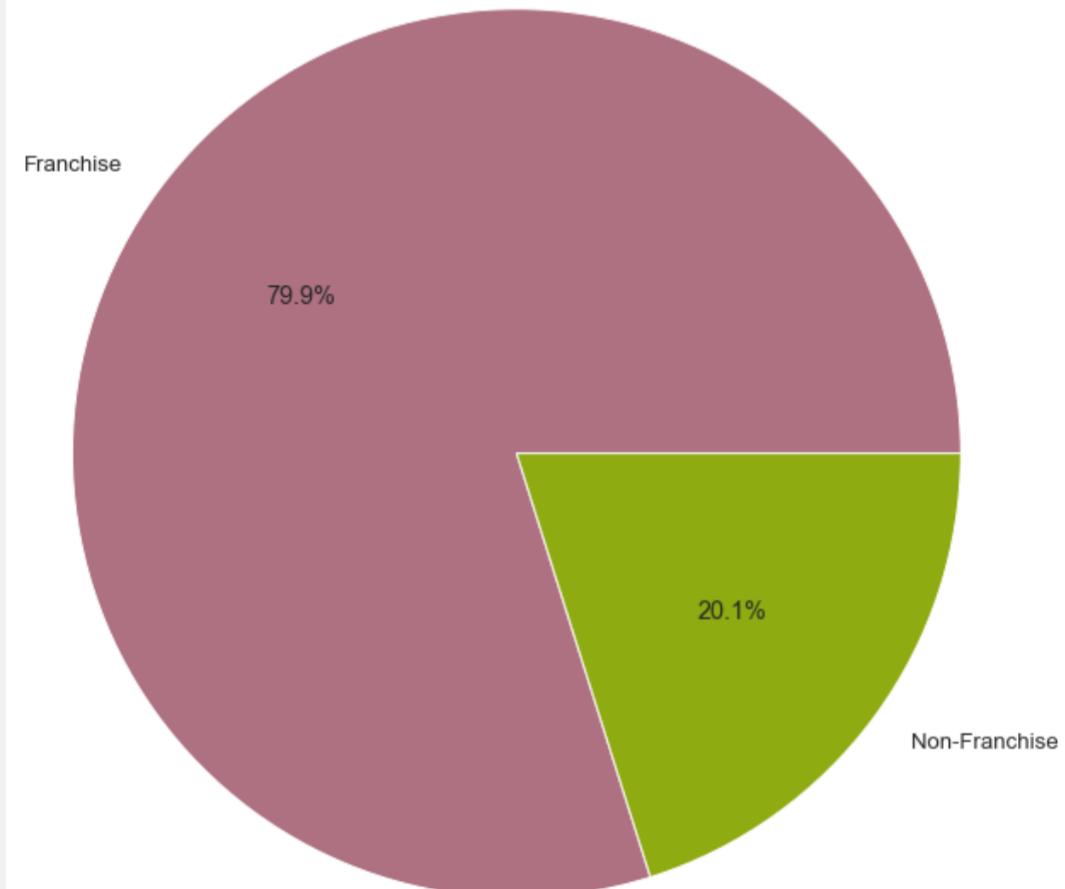
There was a gradual decline shortly before 2010 and we can surmise that to be due to the global economic downturn. On top of that, it could also be due to the shifting of the industry where it was slowly evolving from selling packaged goods to online distribution and via mobile devices.

FRANCHISE SALES & DISTRIBUTION

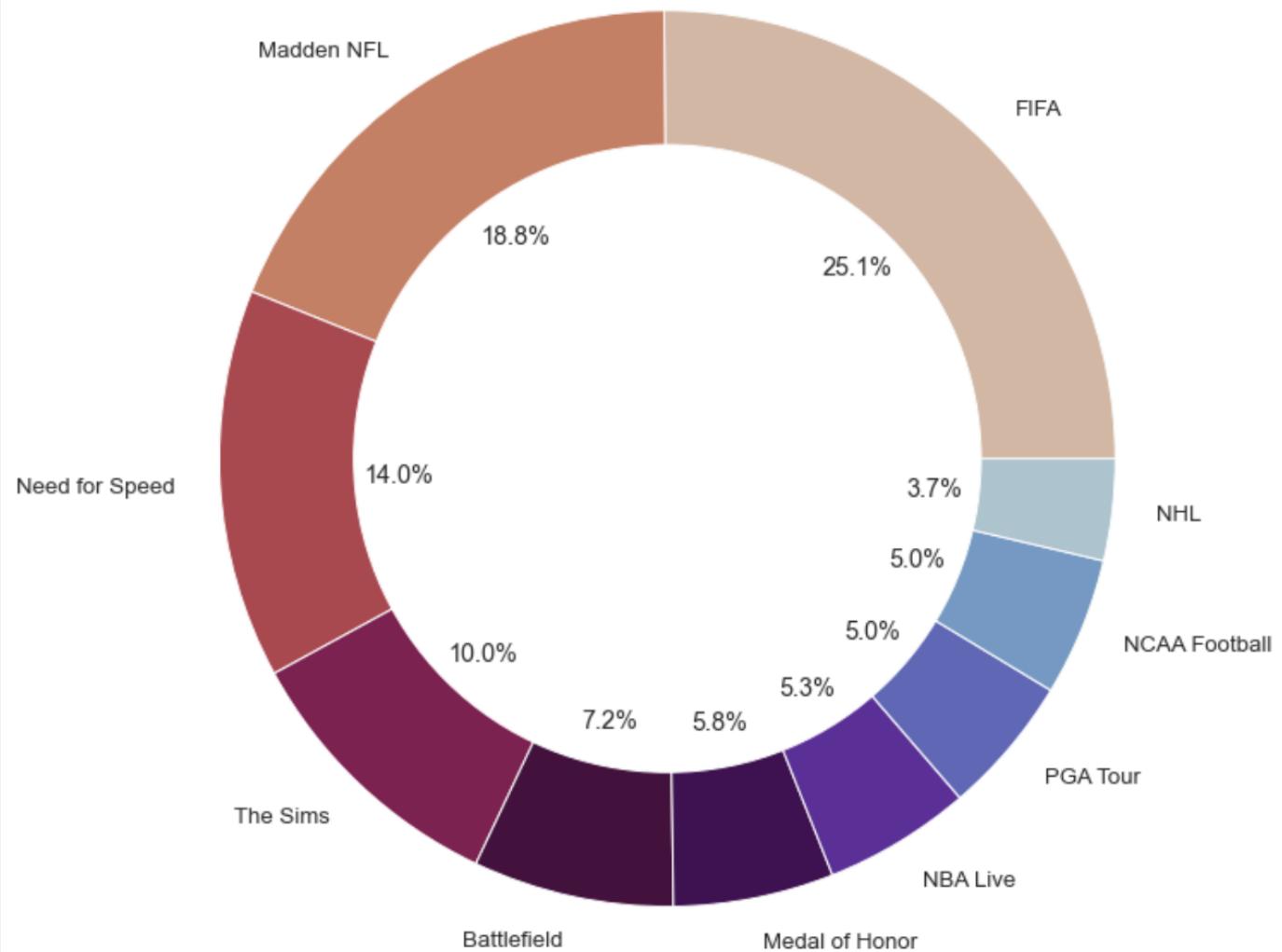
Game Release Distribution - Electronic Arts



Game Sales Contribution - Electronic Arts



Top 10 Franchise Sales - Electronic Arts



Like Nintendo, EA publishes more games under their franchises than non-franchise where the huge majority of their sales come from. Interestingly though, EA does not have a top-selling franchise with a huge lead like the other two publishers. Its best-selling franchise goes to FIFA, which contributes to one-quarter of the total sales, followed closely by Madden NFL. With this we can also see why the 'Sport' genre is the best-selling genre out of the 12. Both games can also be considered EA's steady sources of income given their annual releases.



ACTIVISION

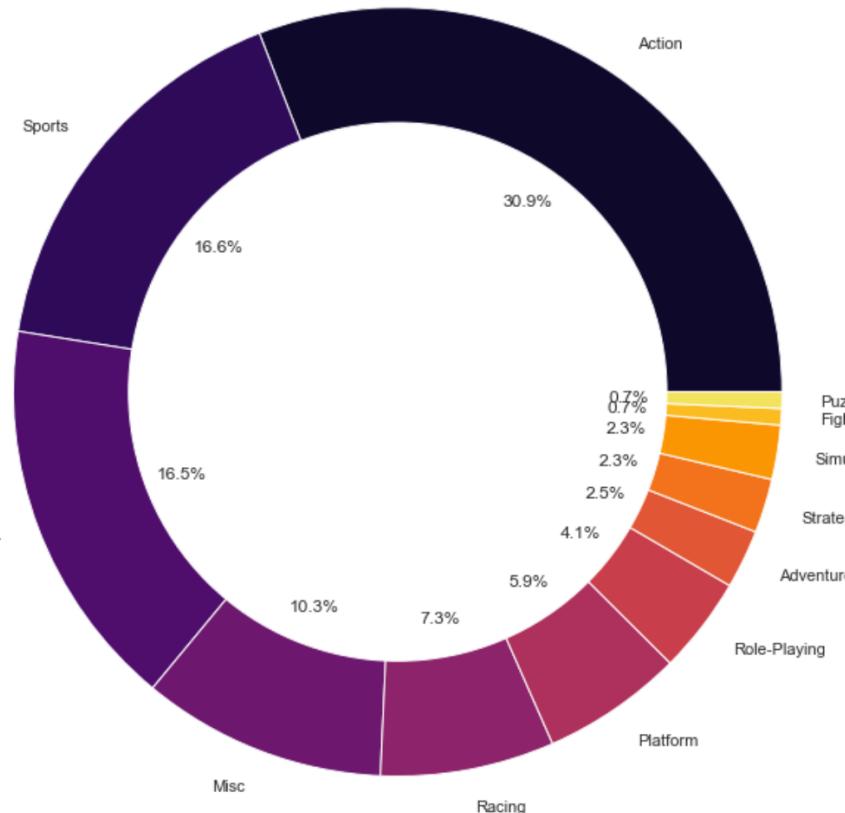


Founded in 1979 by former Atari game developers, Activision Publishing, Inc. is a California-based American video game publisher which serves as the publishing business for its parent company, Activision Blizzard, and consists of several subsidiary studios. It was the first independent, third-party, console video game developer and is one of the largest largest third-party video game publishers in the world, having been the top United States publisher in 2016.

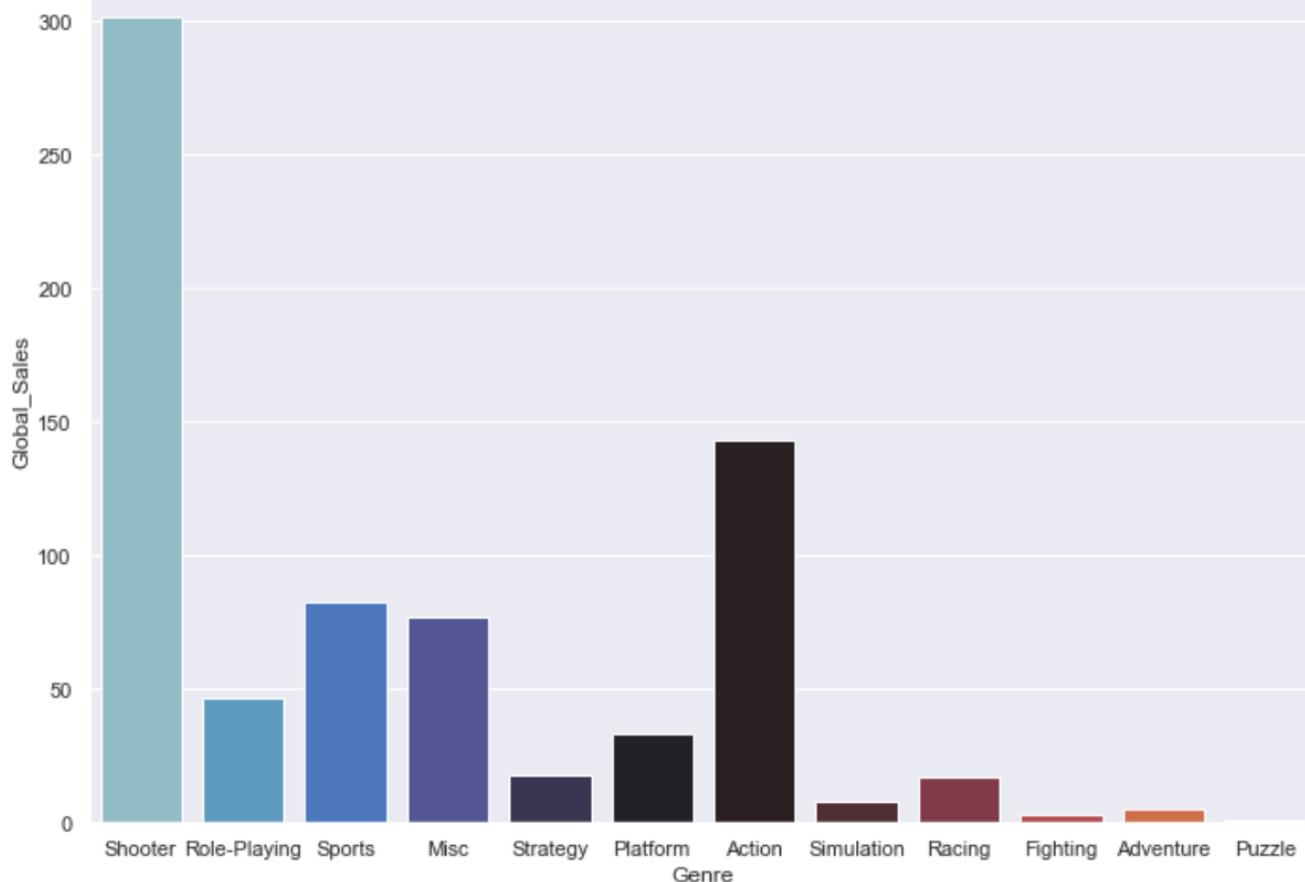
The company had gone through several drastic events and changes during its initial years – the 1983 video game crash, a management shift and rename, falling into debt and a subsequent restructure – but through various mergers and acquisitions, Activision has managed to acquire various types of intellectual property, including successful games series such as Tony Hawk's, Call of Duty, Guitar Hero and Warcraft. A subsequent merger with Vivendi Games, leading to the formation of Activision Blizzard, also enabled Activision to manage numerous third-party studios and publishes all games beside those created by Blizzard.

GENRE DISTRIBUTION & SALES

Game Genre Distribution - Activision

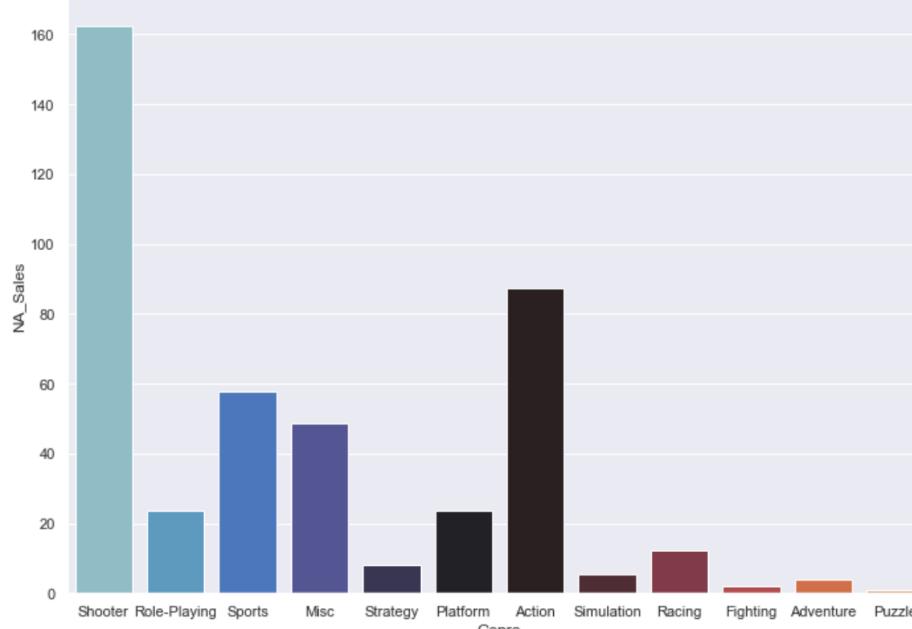


Sales by Genre Globally - Activision

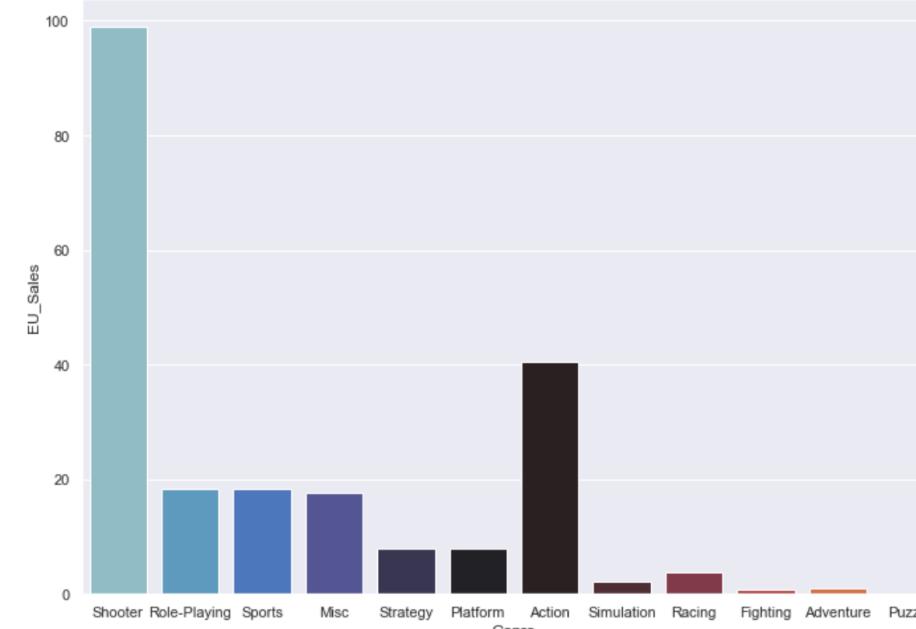


Unlike the distribution of its released games' genres, Activision's best-selling genre belongs to the 'shooter' category which constituted to 16.5% of the entire mix - almost half of the most released genre, 'Action'. We can attribute this to its highly successful franchise, 'Call of Duty', which also happens to be the publisher's best-selling franchise. The most released genre, 'Action', trails behind in second place at almost half of the total global sales of the first place, with sales from several franchises and spinoffs of popular and successful animation / movies.

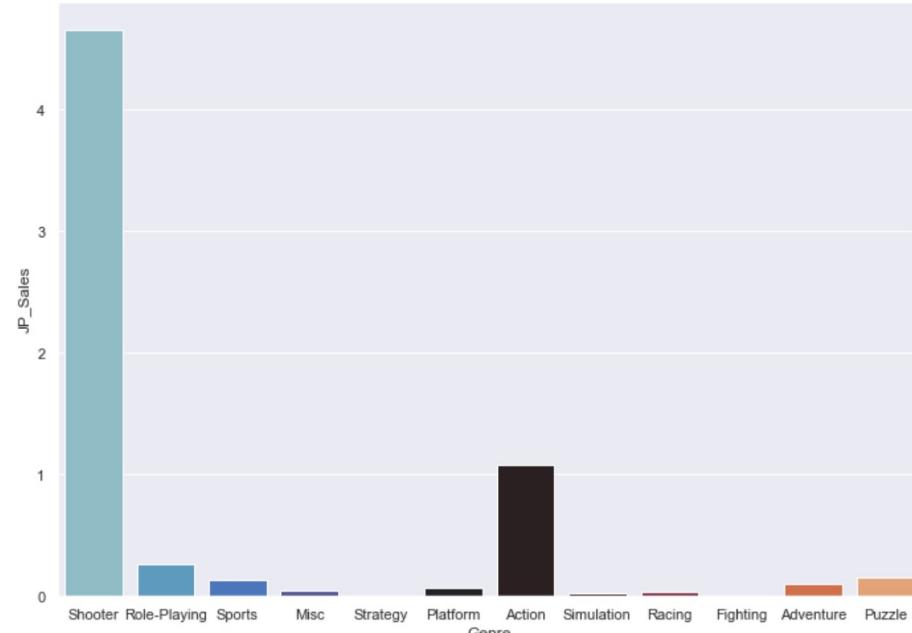
Sales by Genre in North America - Activision



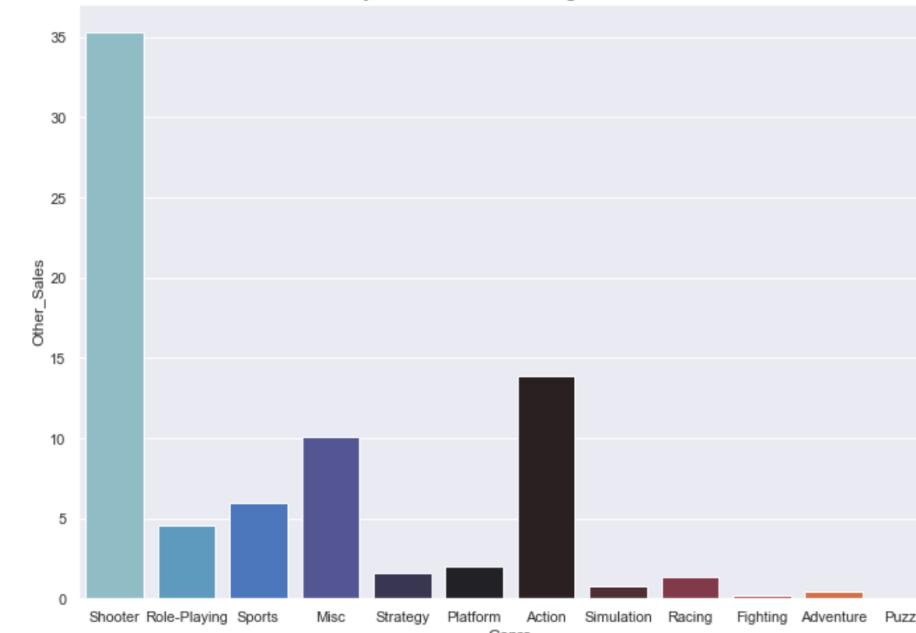
Sales by Genre in Europe - Activision



Sales by Genre in Japan - Activision

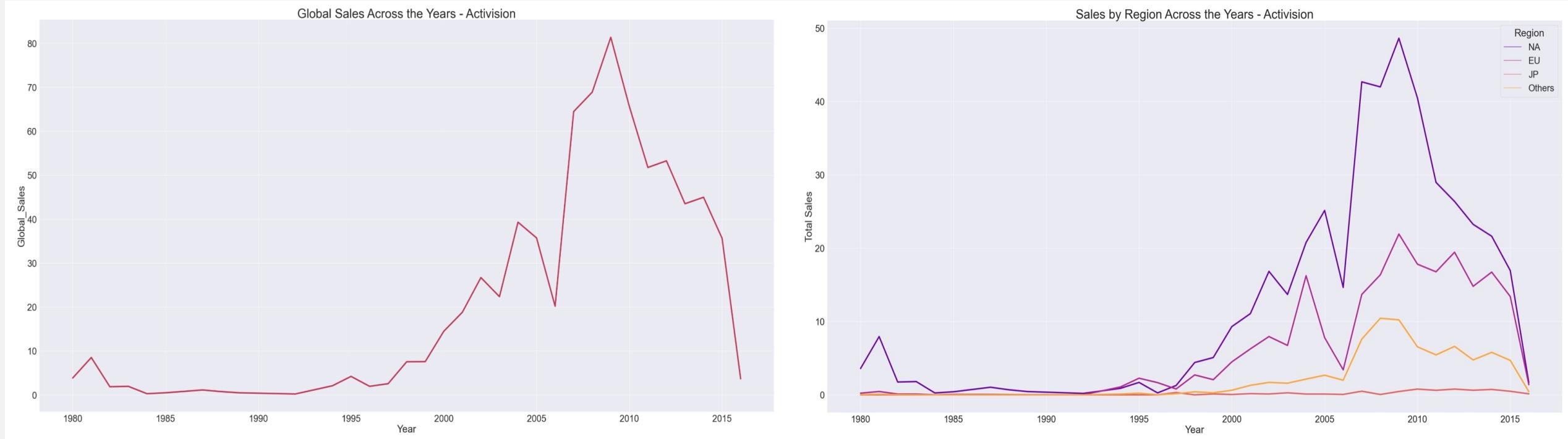


Sales by Genre in Other Regions - Activision



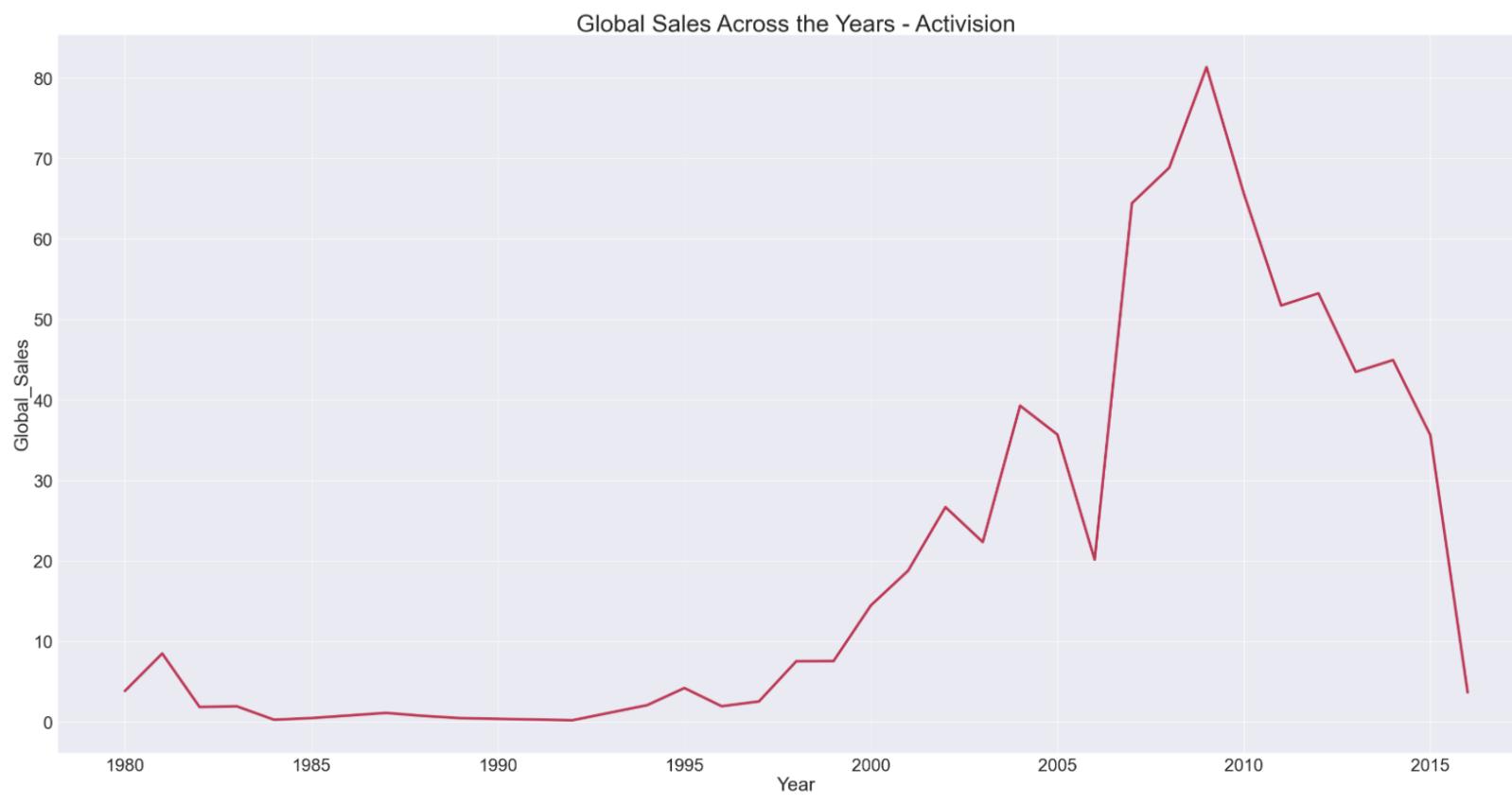
The trend for the first and second best-selling genres is uniform in all four regions examined with the 'Shooter' genre holding a lead of almost twice the total sales of the 'Action' genre, further proving Call of Duty's success and popularity.

SALES ACROSS THE YEARS



YEAR	NO. OF GAMES RELEASED	GAME	GLOBAL SALES
2007	80	Call of Duty: Modern Warfare 2	25.09
2008	97	LEGO Indiana Jones 2: The Adventure Continues	5.23
2009	128	Guitar Hero 5	4.94
2010	93	Band Hero	3.40
2011	75	DJ Hero	3.06

Activision's highest sales recorded between 1980 to 2016 were from 2007 to 2012, with its peak in 2009, when the number of games released was the highest, compared to the rest. The high amount of sales could largely be attributed to the release of 'Call of Duty: Modern Warfare II' which contributed to the majority of the sales for the year. The game had received 'universal acclaim' and the success could have been built on the success and the popularity of its prequel 'Call of Duty 4: Modern Warfare' which was released two years prior in 2007.

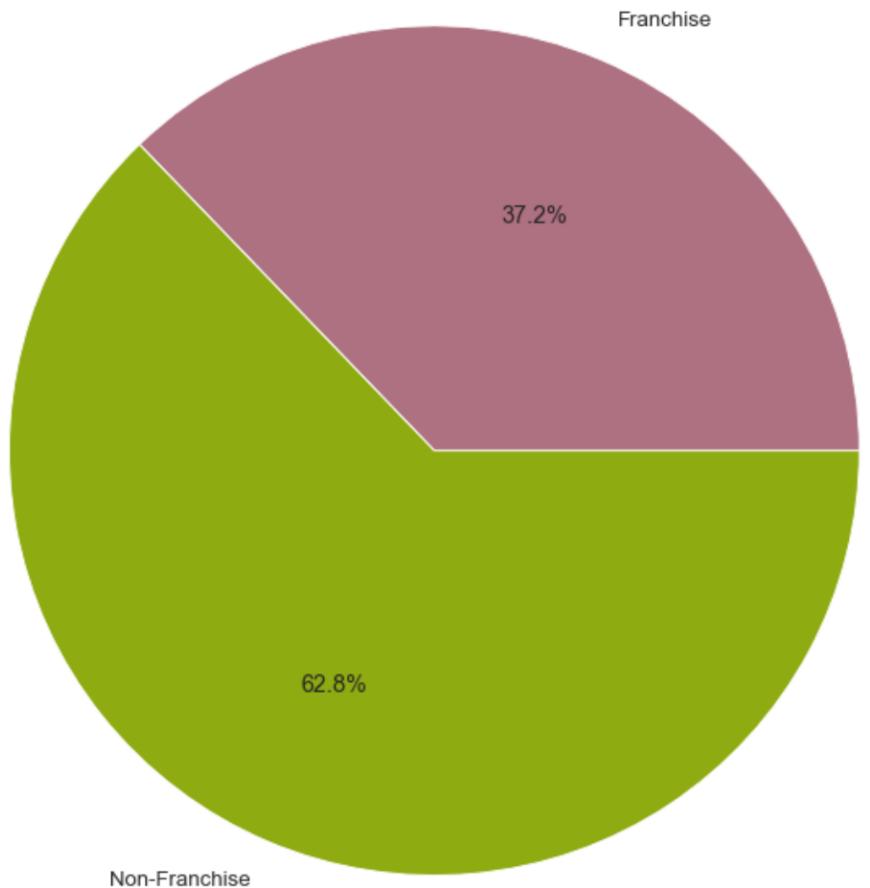


FRANCHISE	GLOBAL SALES
Call of Duty	158.66
Guitar Hero	51.34
Skylanders	11.03
Cabela's	10.75
Spider-Man	10.53
Warcraft	9.32
Tony Hawk	5.62
Diablo	5.20
StarCraft II	4.83
Prototype	4.20

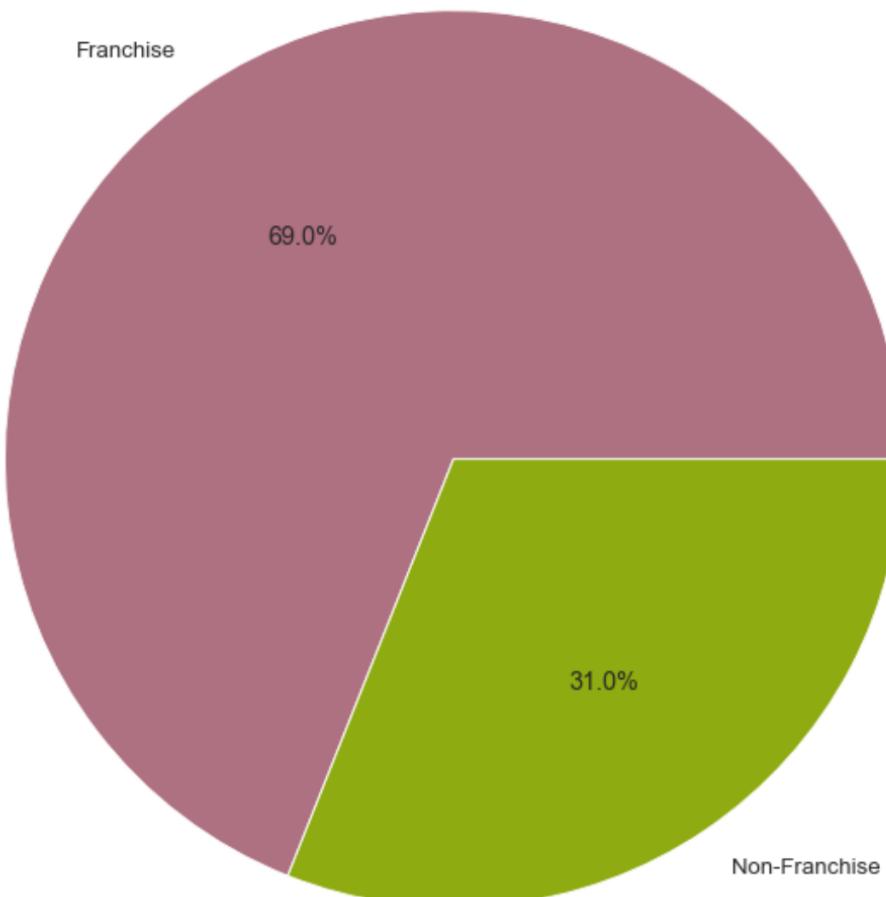
'Call of Duty' was also Activision's reigning franchise during the six-year period, with sales figures triple that of its second place, 'Guitar Hero'. It is interesting to note as well, that the recession did not seem to affect the overall sales in this case as there was actually an increase from 2007 to 2008 – when the recession hit – before increasing further to its peak in 2009.

FRANCHISE SALES & DISTRIBUTION

Game Release Distribution - Activision



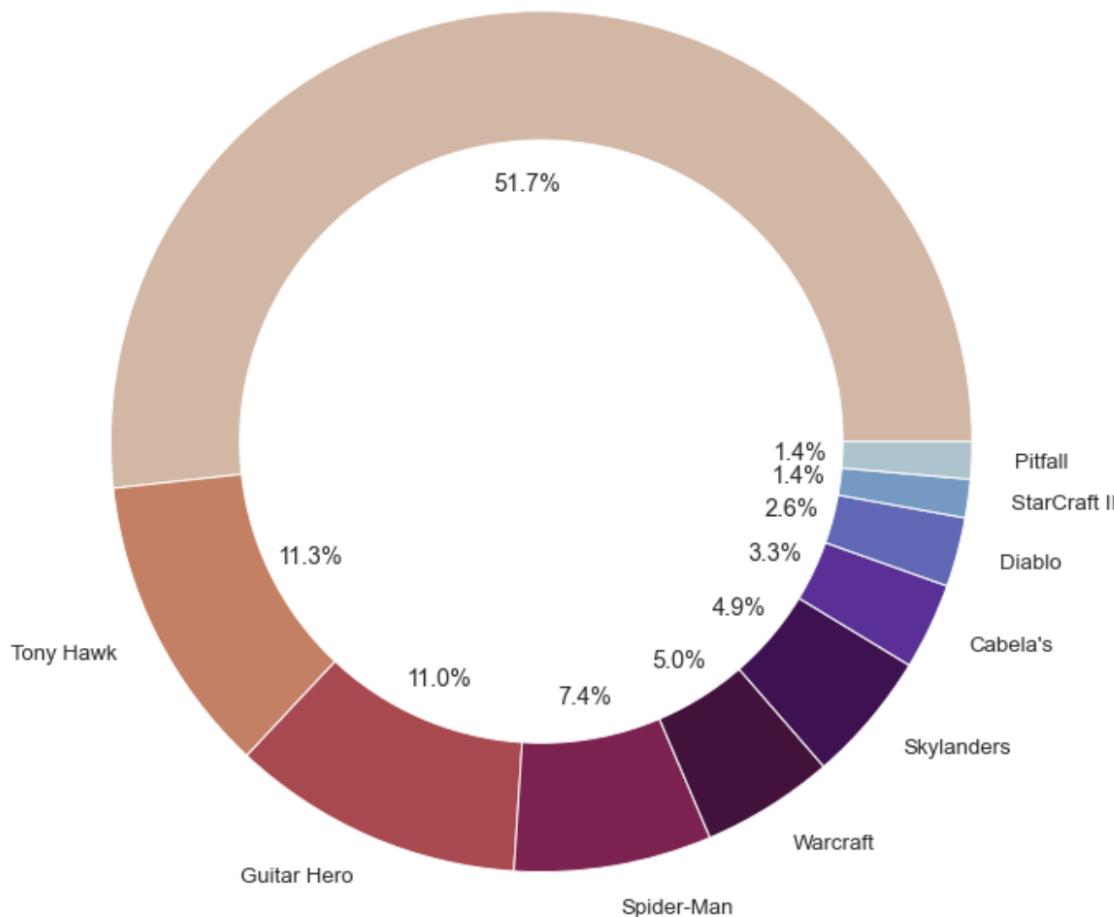
Game Sales Contribution - Activision



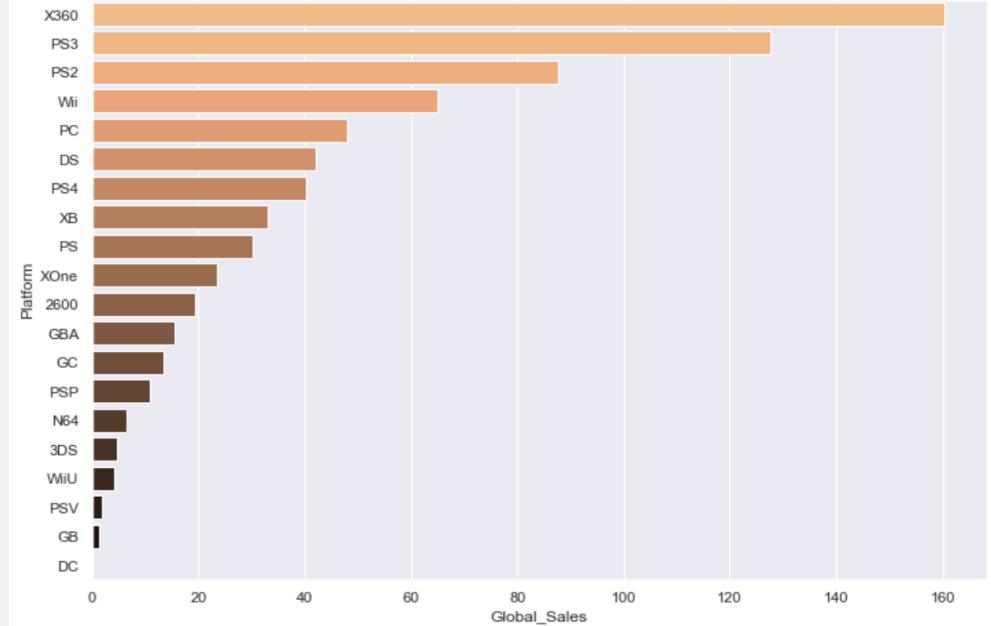
While non-franchises contributed mostly to Activision's game release distribution – unlike Nintendo and EA where more games under franchises were released – the exact opposite is true when it comes to total sales contribution between the two (i.e. franchise and non-franchise), with the distribution almost mirrored.

FRANCHISE & PLATFORM SALES

Top 10 Franchise Sales - Activision



All-Time Sales by Platform - Activision



Unsurprisingly, 'Call of Duty' is the leading franchise amongst the top ten and contributes more than half of the total sales. It takes first place with sales figures almost five times than that of the second place, 'Tony Hawk'. With Xbox 360 being Activision's best-selling platform, we can also assume that majority of CoD players use the console.

Taking all observations so far into consideration, it is safe to say the 'Call of Duty' franchise is basically Activision's steadiest and main source of income – which also puts pressure to ensure that the games' quality is constantly being improved on, or at the very least, maintained so as to retain the franchise's popularity.

OBSERVATIONS

GENRE DISTRIBUTION v.s. GENRE SALES

EA and Activision have the ‘Sports’ and ‘Action’ genres as either the first or second most distributed genre like most of the other publishers in the dataset. In fact, both genres contribute to at least 47% of all their genres published. Nintendo, on the other hand, only has ‘Misc’ that falls under its top three released genres which coincides with most of the publishers in the dataset. It does not seem to have a preferred genre when it comes to game publishing, given the relatively balanced mix – the total percentage of its top three released genres also only contributes to 45% of the total distribution – yet it is the highest grossing publisher out of everyone, begging the question whether it is better to be focused in one genre or to not put all your eggs in one basket (or genre in this case).

The top-selling genres basically correlates to the top released genres, with at least two matching on each side, be it as a whole or with the respective publishers that we have delved into. The items that are worth looking into in this case are:

1. the ‘Shooter’ genre as a whole

It was the 5th release-wise, consisting only 7.9% of the mix – how did it manage to rise up to being the top three best-selling?

2. the ‘Sports’ genre for Nintendo

Like the ‘Shooter’ genre for the genre distribution as a whole, it consisted only 7.9% (6th place) of the total release mix for Nintendo but yet ranked third for its total sales – this could be largely due to the popularity of Wii Sports under its Wii franchise.

3. the ‘Shooter’ genre for Activision

The genre was almost half of Activision’s most released genre but yet ranked first sales-wise, more than half of its second-ranking genre at a little more than 300m. This was due to its largely popular franchise, Call of Duty, which contributed more than half of the total sales of Activision’s top ten best-selling franchises. Further delving into this will also reveal whether the franchise is the cause of the ‘Shooter’ genre being the top three best-selling genre overall.

OBSERVATIONS

FRANCHISES

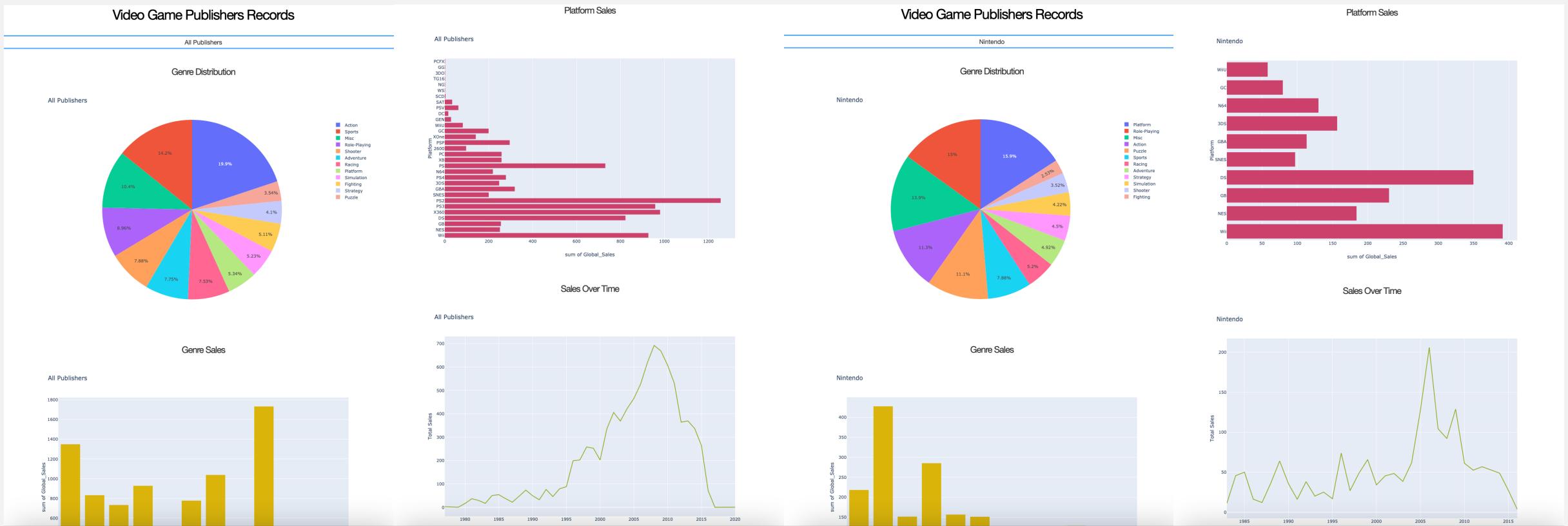
All three publishers have franchise games under their belts which contribute largely to their sales; generally an 80:20 distribution sales-wise, except for Activision (69:31) who is the only one out of the three to have published more non-franchise games than franchise. These franchises also serve as steady sources of income for the publishers with their established popularity that is bound to generate interest, and given that a lot of them are released on an annual basis (e.g. FIFA). It will be interesting to examine further to find out the commonality of the franchises of these publishers; what would trigger them to decide to make a product part of a franchise (besides the high sales and popularity); and how many franchises should one publisher own to become or remain the top player in the industry.

PLATFORM SALES

The top five best-selling platforms are taken up mainly by Nintendo (DS and Wii), Sony (PS2 and PS3) and Microsoft (X360) consoles. Unsurprising to all, Nintendo's best-selling platforms are all their own – with Wii and DS taking the lead – since they do not seem to release games under platforms from outside their brands. This helps to provide another stream of income for the publisher as consumers would either purchase a Nintendo console to play a popular game they have released or purchase multiple games released for the particular console just so they could utilize the device.

EA and Activision, on the other hand, have the best sales either under the PlayStation or Xbox consoles – this could be due to most of their games' designs having better user experience on a larger screen.

APPENDIX



A simple dashboard created using Plotly Dash where the genre distribution and sales, platform sales and sales over time are displayed for the entire dataset and the top three publishers, i.e. Nintendo, Activision and Electronic Arts.

The video demo of the dashboard can be found here: [Dashboard Demo](#)