# Data Analysis in Video Games from the 1980s to 2016:

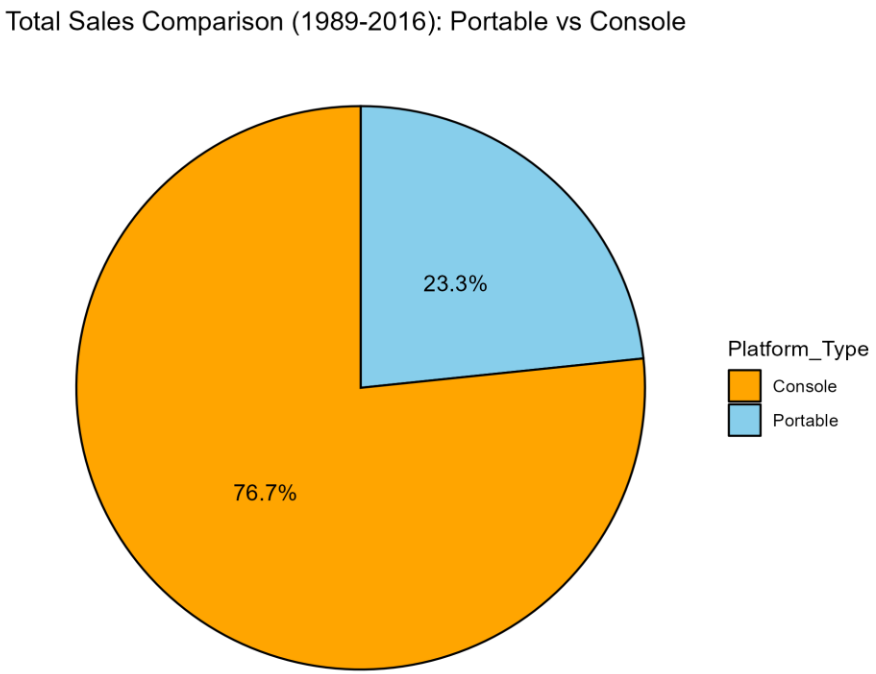
An analysis of handhelds, consoles, game genres and the genres inside their parent company.

# Total sales of Handhelds and Consoles

- In this section, I will present the sales of portable consoles versus home consoles, and we will get a good idea that despite selling relatively well, all of them show a low atachement rate / tie ratio, which is the number of games sold per console sold, explaining the below-expected performance. It is worth noting that since I am comparing from 1989 to 2016, the Nintendo Switch has not been included. Additionally, being presented as a hybrid, it could not be classified in this category.

- Thus despite selling over 300 million units in the 2000s (approximately 525.6 million compared to roughly 870 million), portable consoles have never matched home consoles in software sales proportion. Although they sold 60% of the number of consoles, as shown by the results, their software sales did not scale linearly ( in hardware 6:10 & in software 3:10).

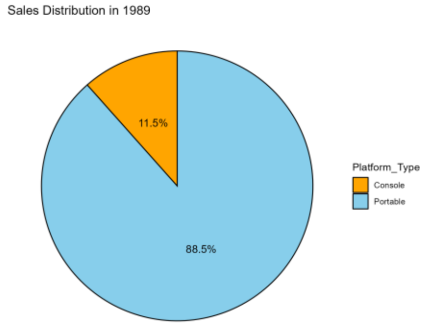
- As an adendum, some of the sales of the Mega Drive/Genesis, PC-Engine/TurboGrafx 16 should be counted towards portable sales due to console variants like the Genesis Nomad and PC-Engine GT / Turbo Express.

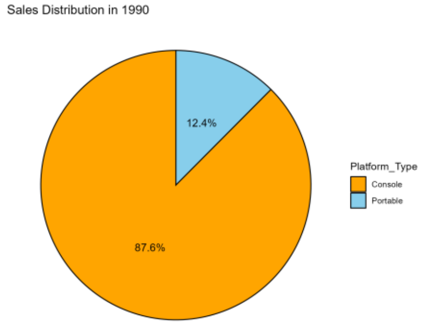


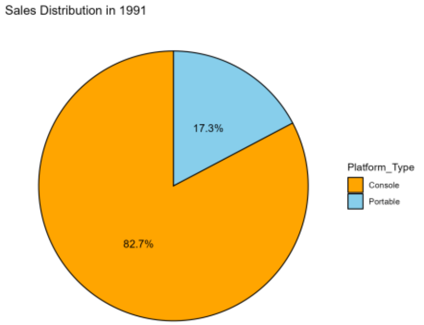
# Yearly sales of Handhelds and Consoles

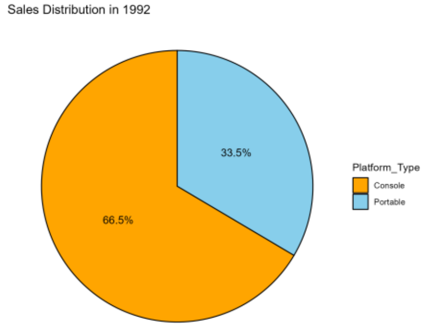
- As we can see, in 1989, the most sold games were in handhelds, this can be explained because the GB was the new system with the pack in game being tetris, that would be a craze now and in the late 90's due to pokémon. However the sharp decline can be explained by the fact that the data onsly shows the software sales and the year that it came out, and by that time the SNES was released in japan. The sudden growth in 92 is explained by the debut of Kirby in the GameBoy and the release of Super Mario Land 2 and Tetris 2 .

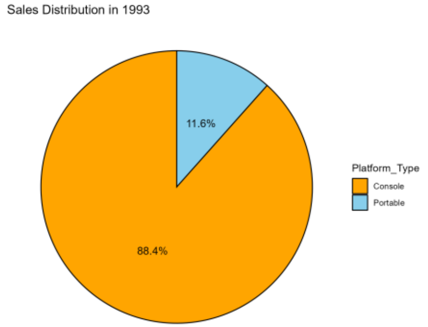
- 93 and 94 are bellow the average because, it was already an aging system with specs far bellow other handhelds and the Home consoles with the 32-bit competition about to begin and Nintendo was probably focused on the Virtual Boy. Thus explaining the poor performance

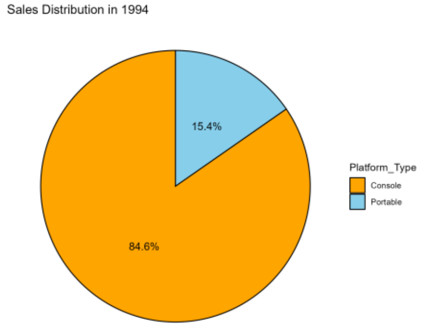


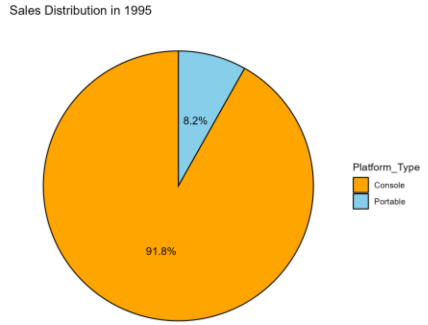



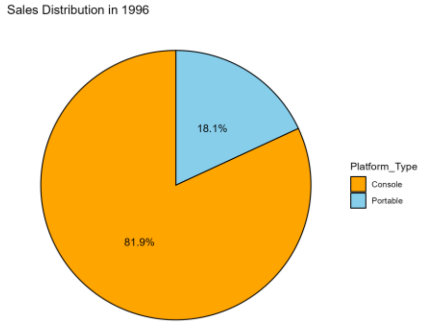



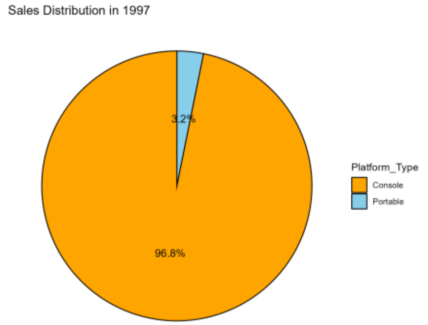
# Yearly sales of Handhelds and Consoles

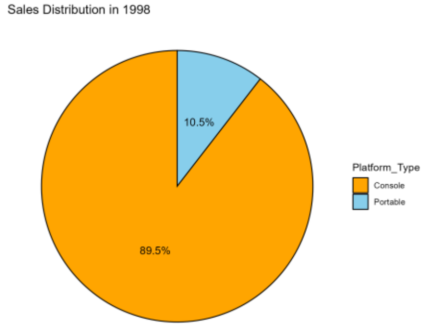
- 95 is the one of the worst years because the 5th had already began, and in 1996 the spike is caused by Pokémon, Tamagochi and Donkey Kong Land 2, but it is still bel. There were very few big games released in 97 for the GB and in the home console a lot of heavy-hitters, thus making it the worst year for handheld sales.

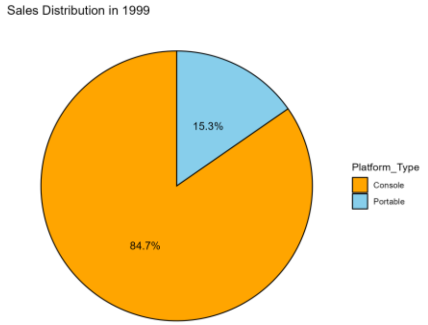
- The GameBoy Color renewed interest in handhelds, and the WonderSwon showed that this area had potential to grow, making  the end of the 90's not be the death of handheld gaming.

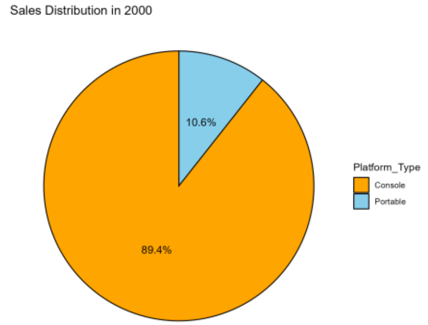


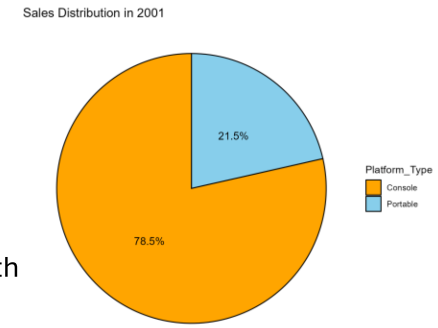



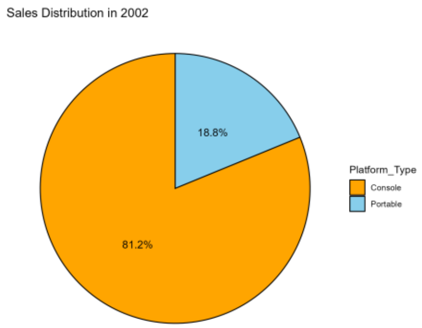



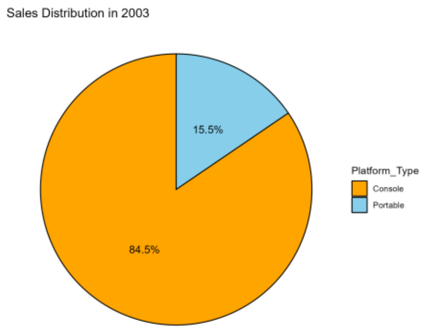
# Yearly sales of Handhelds and Consoles

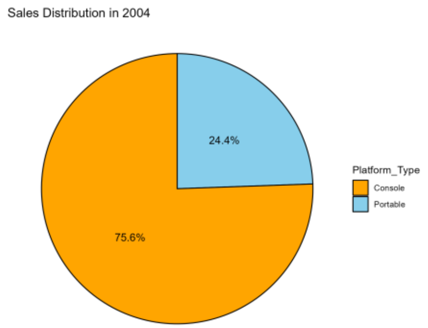
- The early 00's were a better time  than the 90's, with game franchises like Pokemon, Mario, Zelda, Sonic, Final Fantasy, Crash, Kirby and others, having multiple games on the GBA, despite most being rereleases, remakes or ports.

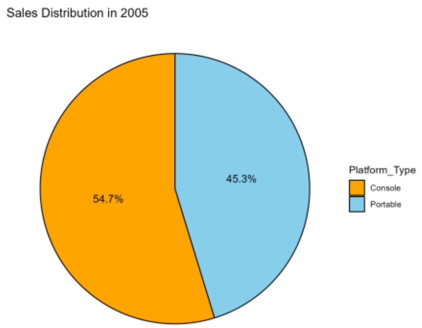
- After 2004 despite the GBA going strong nintendo released the DS, with a focus on casual gaing grabing a bigger target audience thanever before,  but 2005 marked the first real competitor to Nintendo in the handheld space with the release of the PSP.
Targeting hardcore  gamers with specs similar to at the time their home console the PS2. The increase of the handheld sales is not to be understated, because the 6th was the most sold at the time and would hit an astounishing 235.000.000 hardware sold and more than 2 billions game copies pushed to consummers . And the sales of the DS and PSP stayed strong in the 7th generation, making handheld gaming more popular than the last decade.

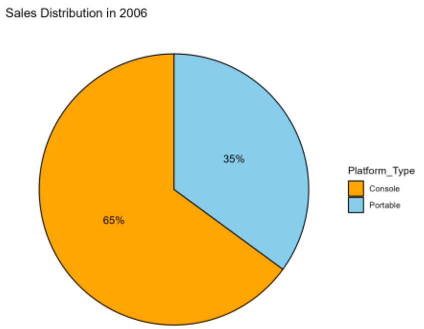


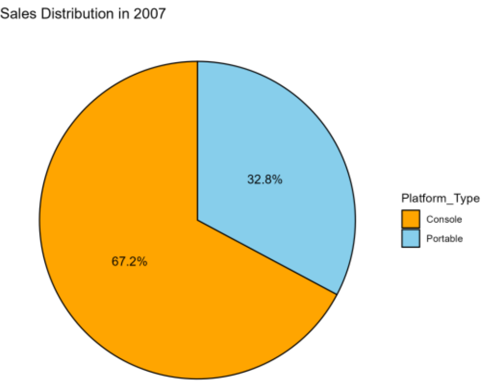



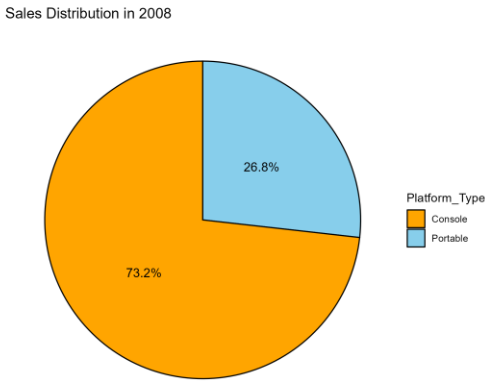



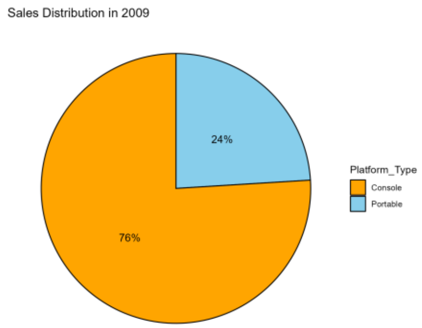



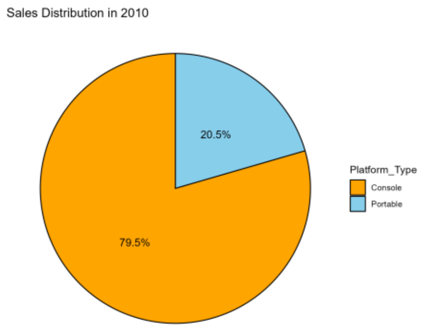



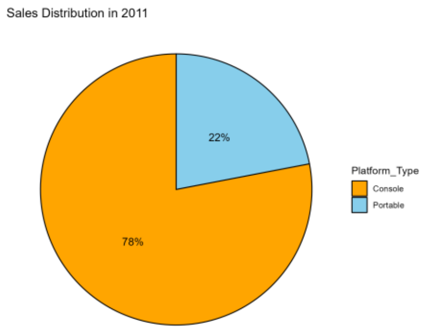
# Yearly sales of Handhelds and Consoles

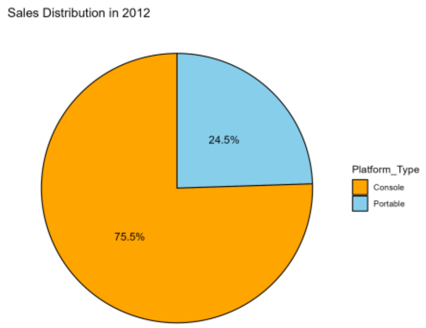
- The begining of the new decade was marked by a new generation with both releasing in 2011, and the previous generation was still going strong. However after 2012 the vita lost its momentum and the 3ds at the end of teh generation despite still going strong with its first party releases was considered underpowered and started to loose its sales, that had peaked in 2014.

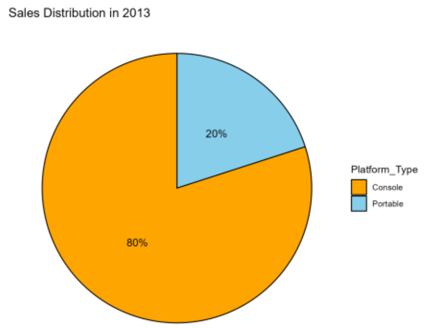
- What can be said is that in general, due to weaker hardware than any home console in the concurrent generation. Thus the idea of the GBA of selling older games for a new audiendce can be a good idea, since the lower development costs make up for a lack of sales in the market without hindering the sales of hardware caused by the lack of big releases.

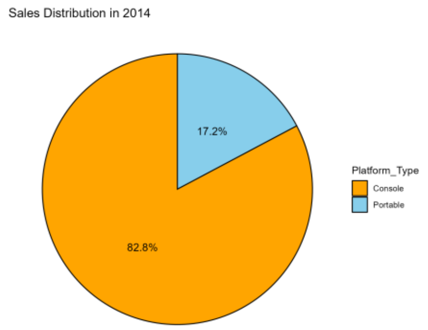


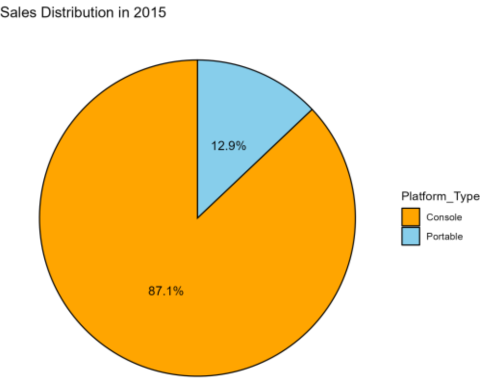



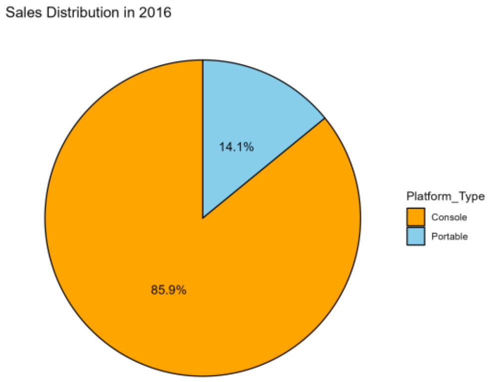



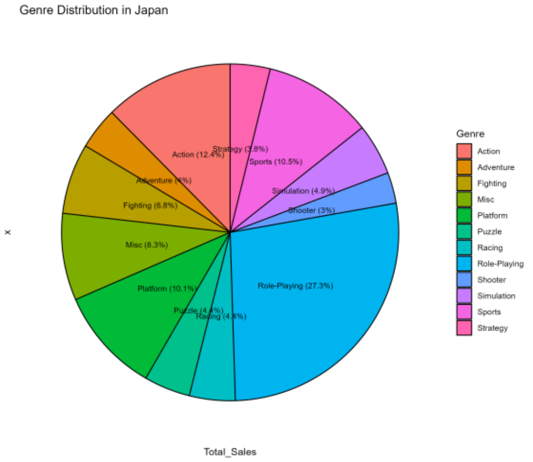



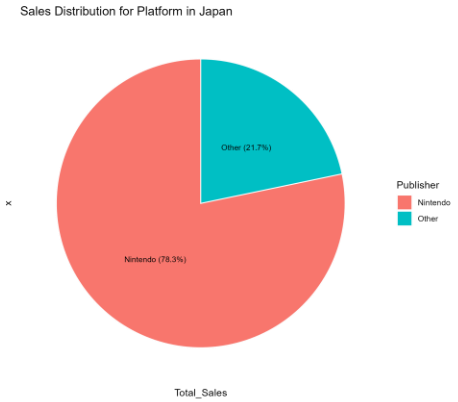
# Genre sales by region & console brand

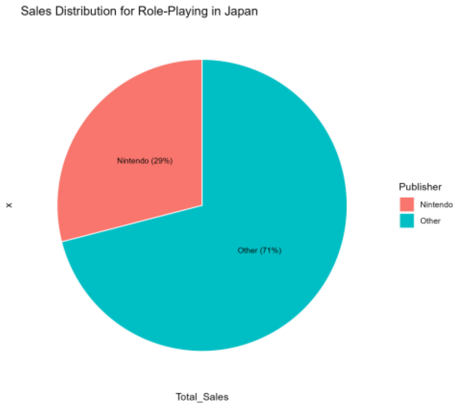
- There are a lot of cultural differences beetwen eastern and western markets and the priorities of each gamer change according to what place he grew up, thus making the need to localize the game a harsh reality, despite nowadays being comearcially succesfull in the entire world, it wouldnt made too much sense spend resources to localize the famicon FFII and FFIII considering that the first one launched on mid 1990, making them launch on the year of the snes was going to set them up for failure due to the lack of interest in 8bit software and in rpgs in america and europe.

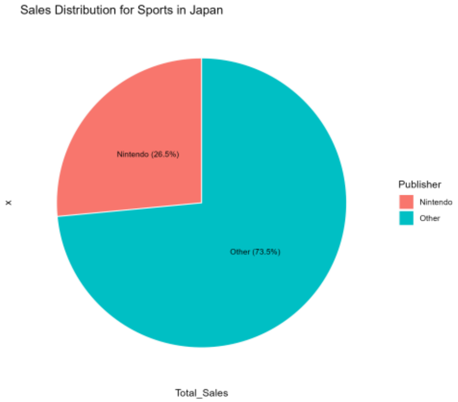
- The Japanese Market is dominated by RPG's (mostly JRPGS) and after that Action games, Sports and Plataformers, wich would explain why the XBOX brand never could find a big market in the region. However Nintendo having a diverse catalog, with a lot of genres popular in japan explain why they have always been a key player, in that region. And the data show they are a big part of the RPG industry and the defacto player of the plataform genre, with almost 80% of total sales and almost a third of RPG's and a quarter of the Sports showing that they have a big understading of their home market.

- Another curious fact that the data shows us is that fighting games despite being almost all of the comerciall success being japanese (SF, Tekken, KoF, Fatal Fury, The Capcom Vs series etc ) they are still a niche category.



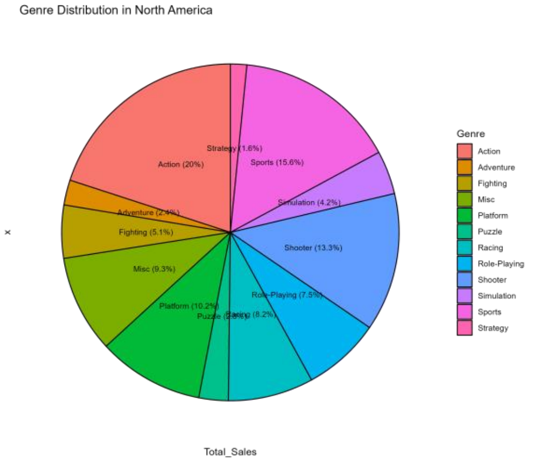



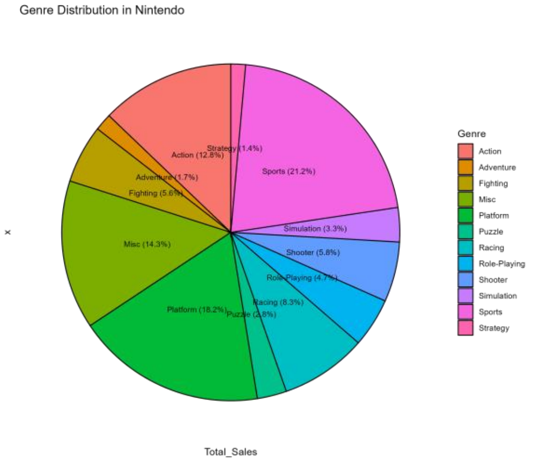



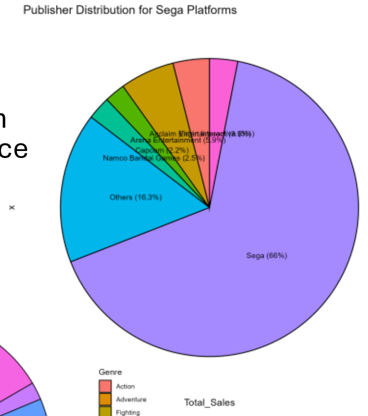
# Genre sales by region & console brand

- Another important fact is that Nintendo consoles sell mostly for Nintendo Players thus  Nintendo games sell Nintendo consoles.
- Another curios point is that they have a smaller software tie in ratio than their competition( it could be explained by the lack of third party support on their console but the wii, nes and snes had huge third party support and not a single publisher gets more than 6% )
- The  dfata doesn't show the swicth nor the end of the WiiU lifespan son nowadays the percentage would have the switch as their biggest software seller and the wii in the second place.

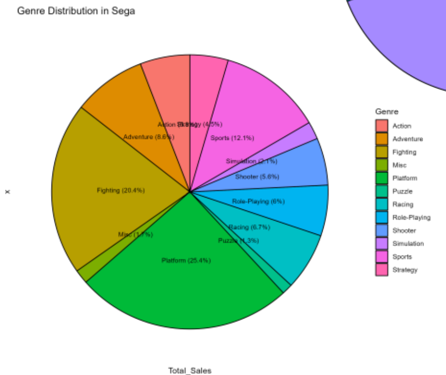


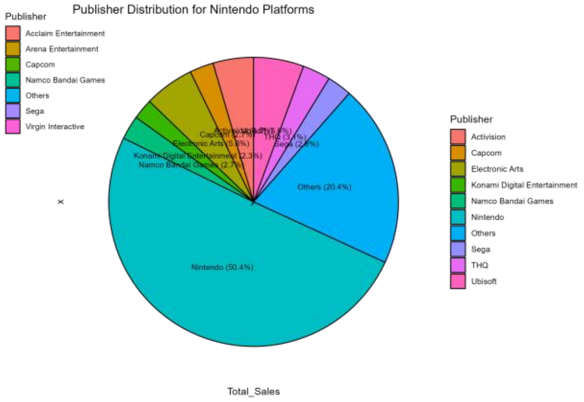



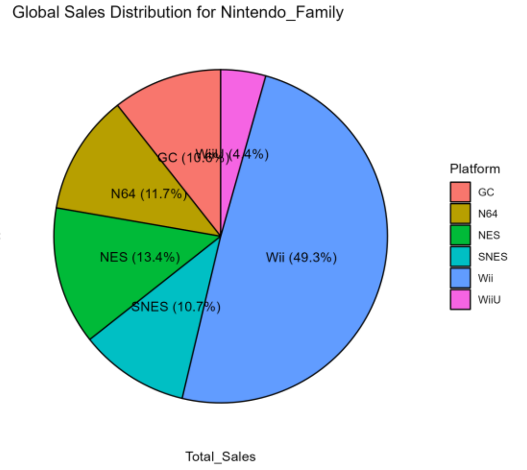

- The Idea that in the 90's sega was less dependent than Nintendo in their game output is a historical misconception sincethe data shows clearly that Sega had more dependence on their 1st party products.




- Besides that they had a less diverse catalog with the top 2 having 46% of the sales, and as discussed before one of those genres was a niche and the other was competing against the one Nintendo excels.



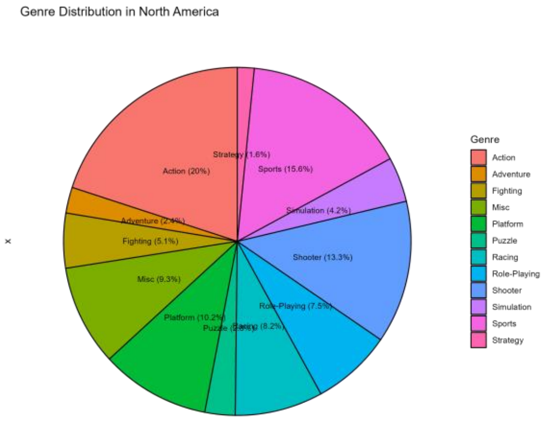



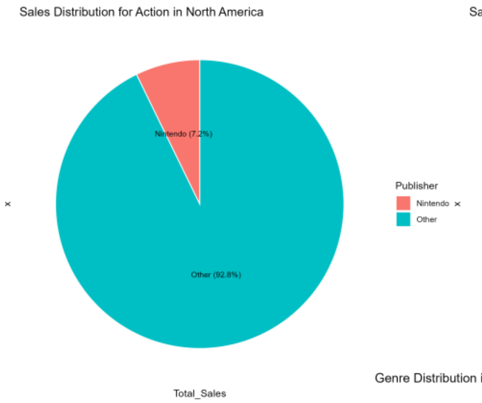
# Genre sales by region & console brand

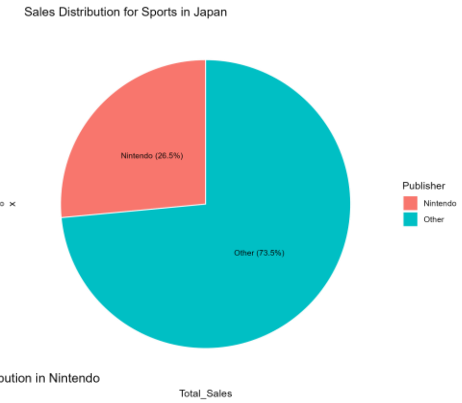
- Nintendo in America is still a powerhouse, with a huge number of sales both in software and hardware each generation, but when it comes to their first-party releases they dont have the same grip as they have in japan (except for the plataform genre with almost 50%).

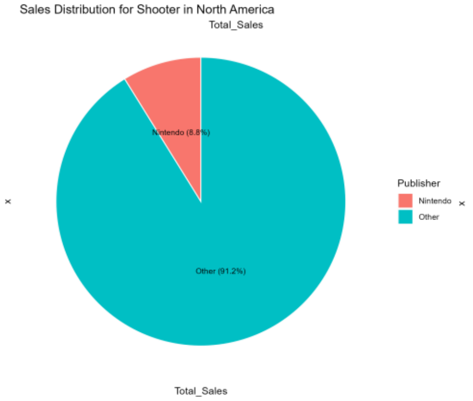
- What can explain the nintendo success is that they have a variety catlog with unique spins that doesn't go behind trends, and their high margin of profit because their games are faster to make and don't cost as much as a modern game their margin allows to stay competitive despite the lack of third party support.

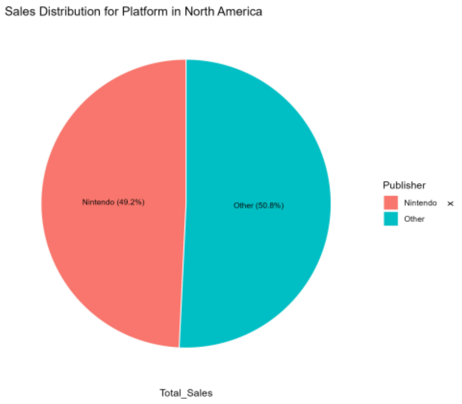
- The high number of sports games in nintendo is due to the fact the data only goes until 2016 and at that time (and today) the highest selling nintendo game is Wii Sports & Wii Sports Resorts (Nowadays probaly the data would be skewed because of the number of switch software sales succecess with Mario, Zelda, Pokémon, Animal Crossing, Super Smash Bros allbeing from other genres and with their modern data I suspect it would be very balanced if not tending to rancing games and plataformers).

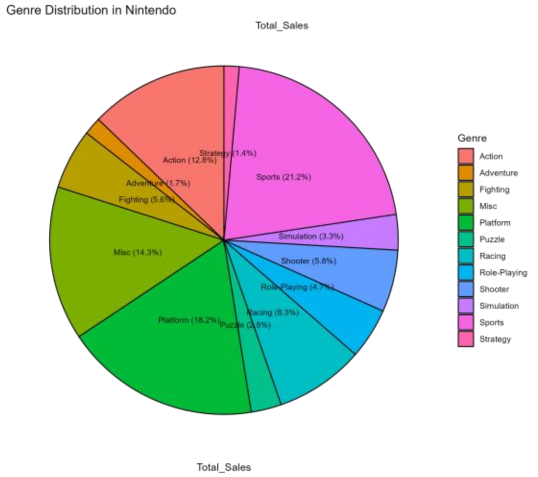


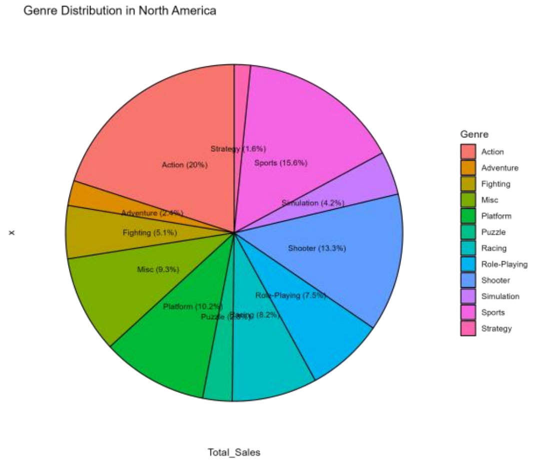



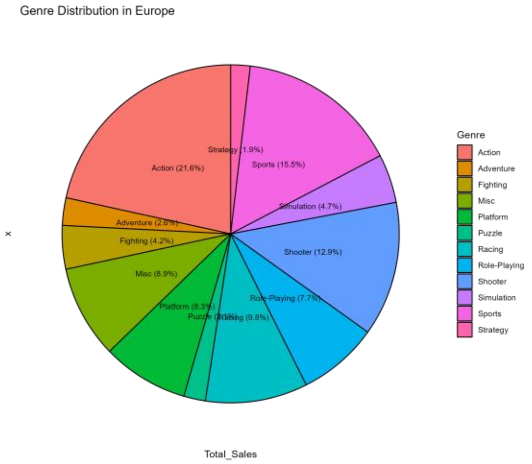



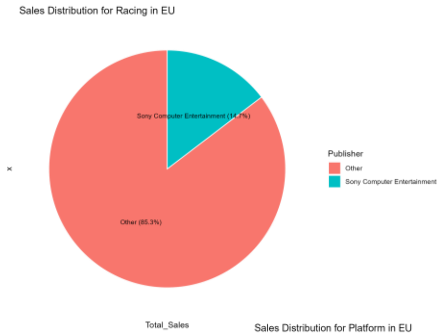
# Genre sales by region & console brand

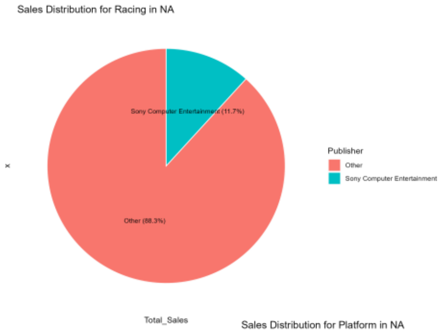
- In Europe and America, the PlayStation Brand is the most recognized and the one with higher sales. However, the data shows that there is no correlation between software sold between SCE and the most popular genres in each region seen (with the addition that titles such as Spiderman, GoW 2018, Horizon had not yet been released and Uncharted 4 had just launched which changes the data in action a lot since all the games listed belong to the genre).

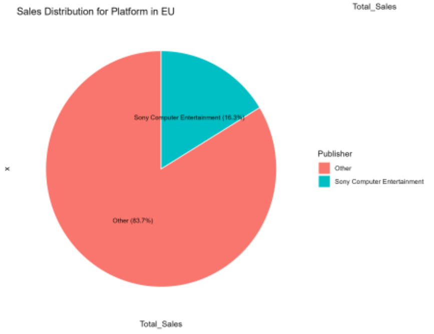
- Other Curious fact is that the  genres where sony has the largest margin in software sales in Racing games and Plataformers

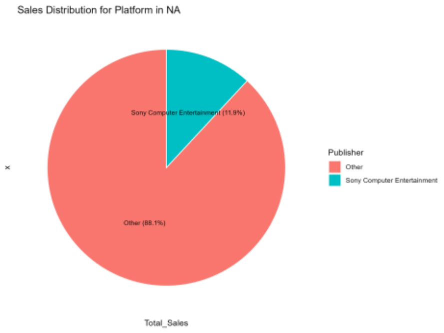


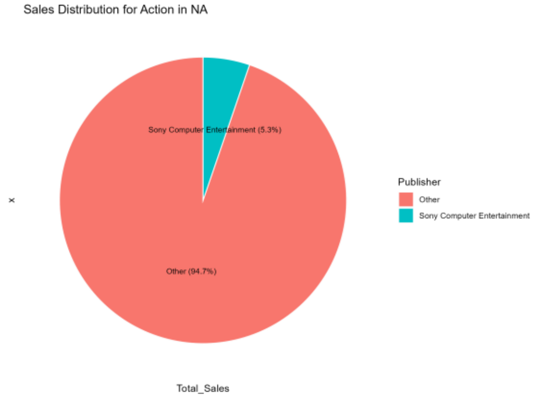



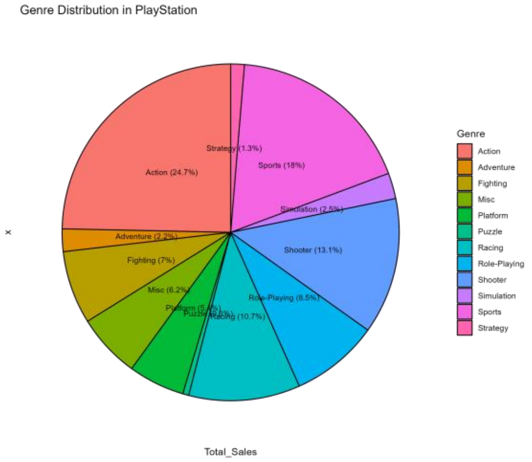



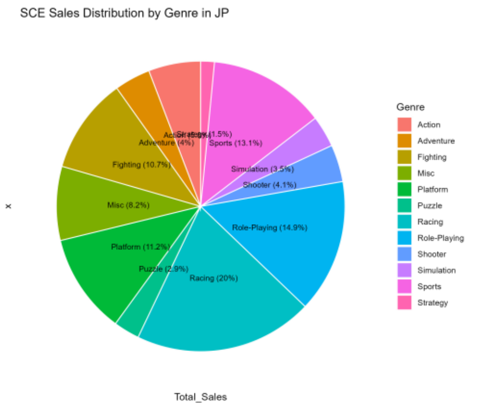



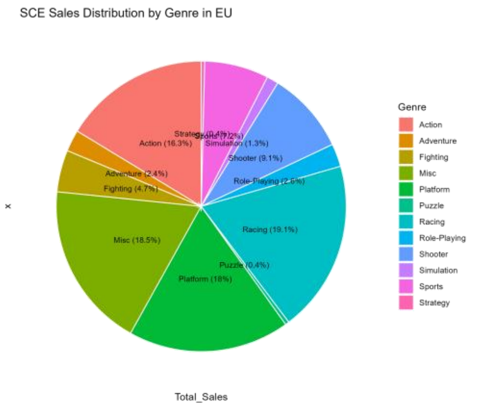



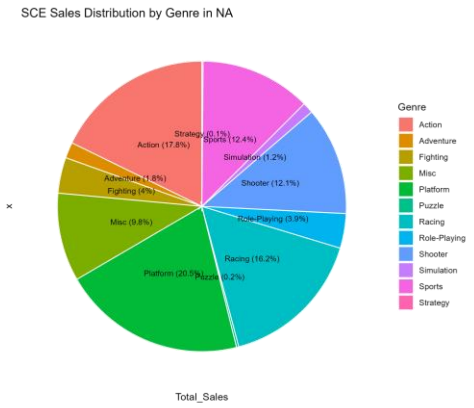



# Genre sales by region & console brand

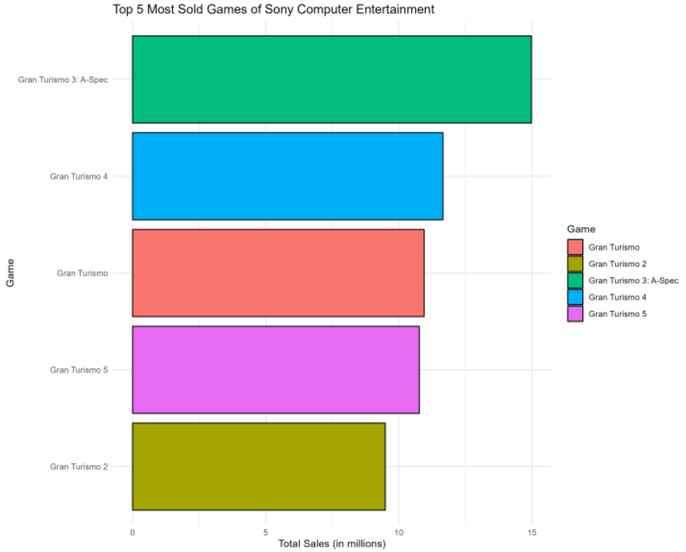
- In the PlayStation Brand europe seems really a crossbred between JP and NA thus making sense why a brand that did their best to dominate both markets fited so well in europe
- As we can see SCE is not the greatest publisher in their own "ecosystem" however they have the biggest 3rd Party support between the consoles brand
- Other interesting fact is that the genres where sony has the largest margin in software sales in Racing games and Plataformers that has certainly created a strnge feeling whith their customers as the makers of Crash and Jack & Dexter would in a short period of time change their focus from plataformers to Cinematic experiences more realistic than ever.
- However when Sony started getting behind during the begginig of the PS3 the way that they made the propper course coorections and in the next generation(PS4 vs XBONE) it is obvious that by 2016 they would have a bigger marrket and as Phill Spencer said, with backwards compatibilty being a system seller their libraries made harder for a ps4 owner jump to a Xbox

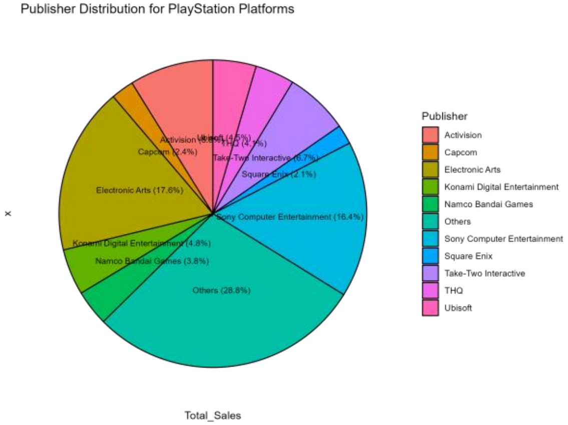


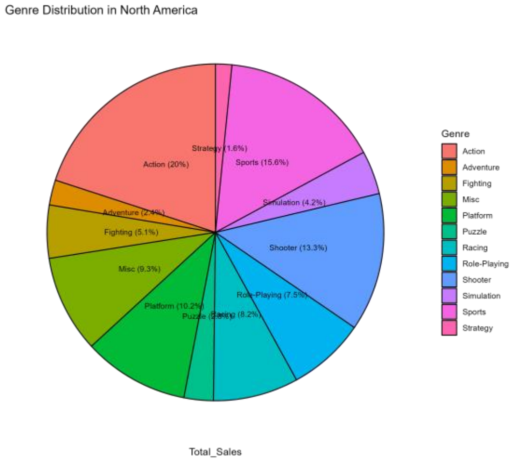


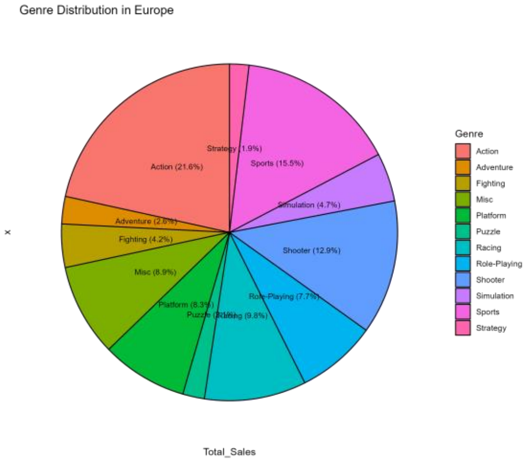


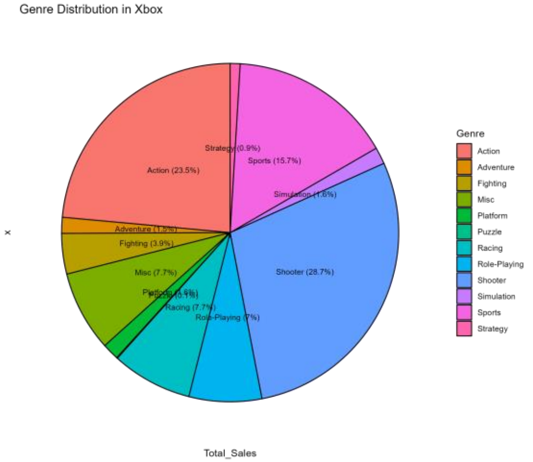



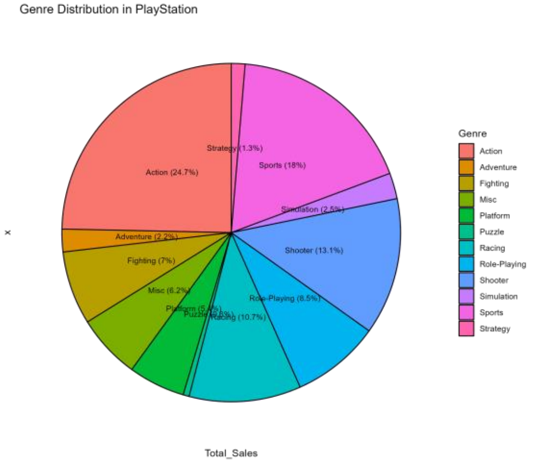
# Genre sales by region & console brand

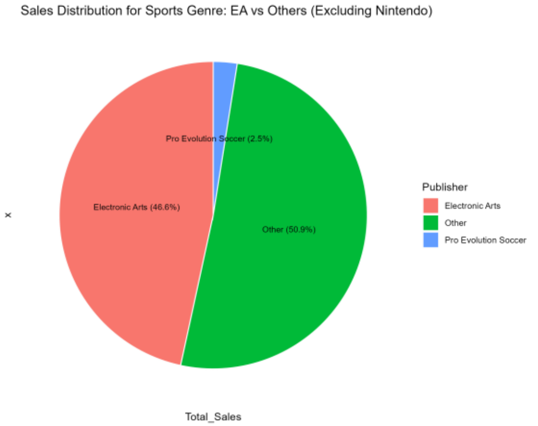
- In Europe and America, the PlayStation Brand is the dominant one, and their first and third party exclusives have a notion of higher quality than the competiton, not only that, because they are a brand with more recognition than their rival third party games released on their console family tend to sell more than on XBOX
- The Xbox brand as is now showing with recent events is showing that their over-reliance on shooters, and lack of diversification, with their biggest IP's being shooters in na over satureted market, wich brings a question why they bought Atcivision Blizzard and let Toys for Bob became independent, because they had a big know-how to plattaformers. Not only that Rare has become a first person shooter based company after the failure of kinect and they were a powerhouse of 2D and 3D plataformers and the only big hit since they were bought is Sea of thieves wich is also a shooter
- In the end Microsoft has the same problems than sega, they dont have enough variety of genres, Nintendo and Sony both now have 4 and 5 genres with more than 10% of sales in their brand. Hoewver Microsoft has only 3. Moreover one of those is clearley dominated by EA meaning the games goes to their competitors too.



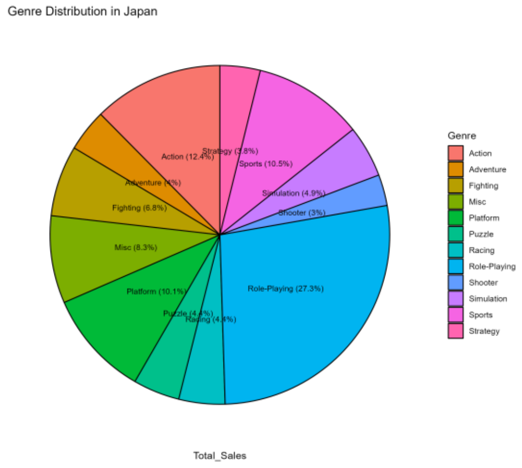



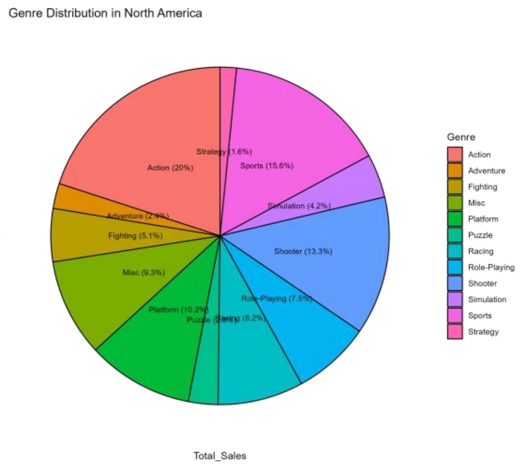



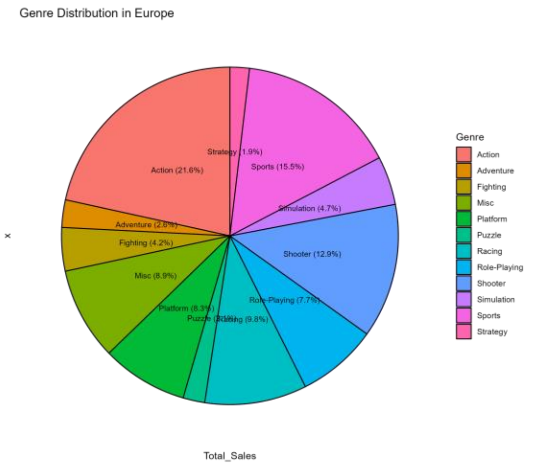
# Genre sales by region & console brand

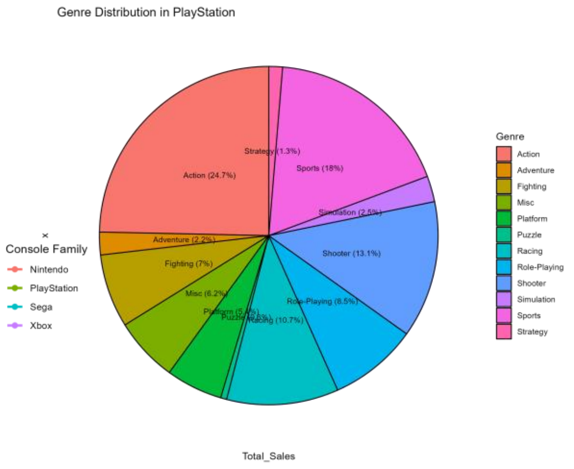
- The conclusion we can get by this data analysis is that Both Eastern to Western and Western to Eastern localization means that some of the work can be not profitable and the risk to not recoup the investment is real, for example Quake was never localized and the cartoon Adventure Time never got too much popular there so there is no need to localize or release since it will be na unknown Ip compeating with established names.

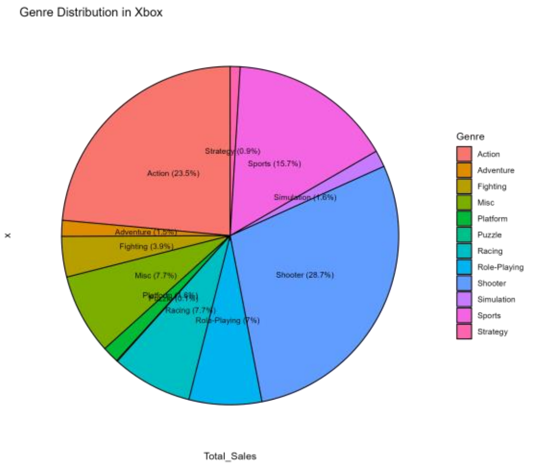
- Other data we can Inquire is that the Brandd selling the most softwares is Playstation, explaining why even with rising costs of developing a game there are still third party exclusives for the brand.

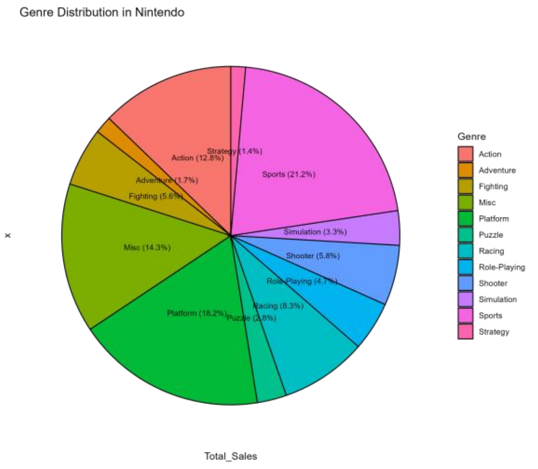


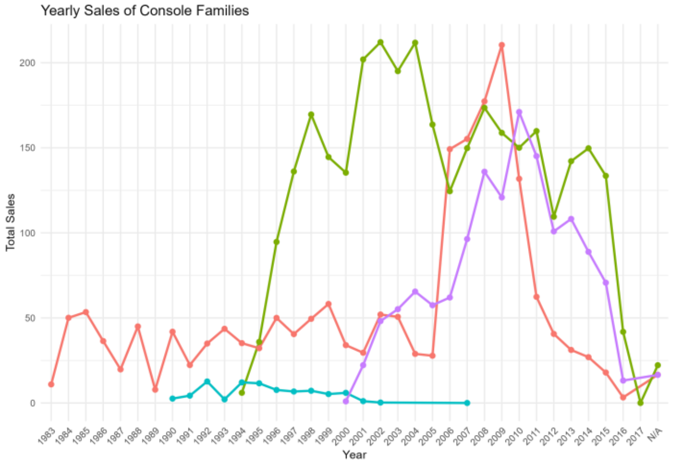



# Analysis by publisher and na understanding of trends over time

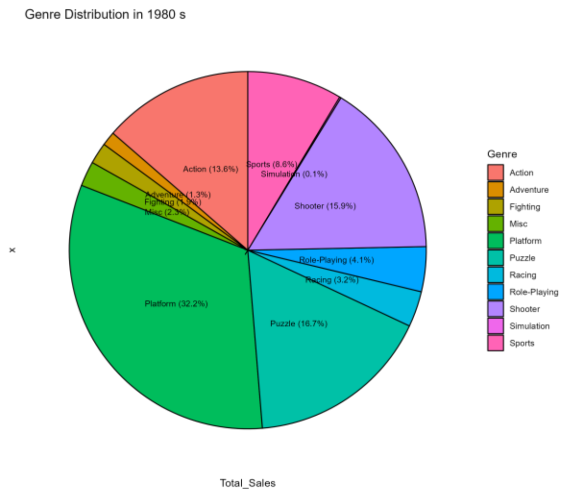
- Each Publisher needs to sell their games and for that they need to analyze trends and see what genres and games are going to bring more profit , otherwise they will go bankrupt, since it is not na arbitrary number to met but the revenue should be greater than investing the money in other business.

- There are other factors that make a game bee profitable despite selling the game for free (e.g Fortnite selling season passes and skins or DLC's) so the idea the game sold more therefor it had a higher profit is wrong, for example indie games nowadays cost much less than their AAA and AA counterparts (and there is always the kickstarter money as another source of income, making their success, be measured in a different scale ).

- And because the data only shows games sales, there as other two minor problems:A GAAS with a subscription service (Like FFXIV or WoW)where the bulk of the money comes from players subscriptions and dlc sales, and there is nowadays subscription services like PS+ (extra/deluxe/premium) XBox GamePass and many others that surely cannibalize the sales of a game but make the money in the long run

- There is also for the console brands (besides the selling of software and the 30% cut they get from third parties in modern times also get their revenue for online play wich is not present on PC).

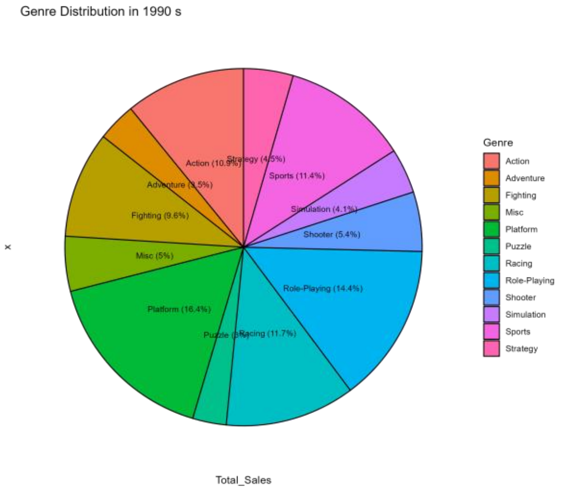
- Other problem with the software sales is that to be trully succseful you need residual sales (Sales over time) thus the release period can not be the sole reason for its commercial succsess.



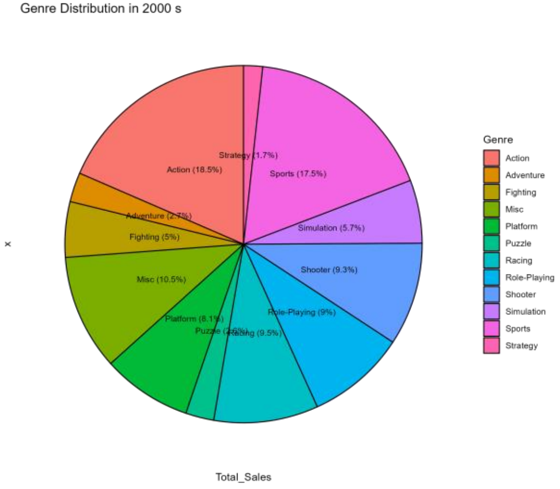

- The 80's are defined by the arcade golden age, the 8-bit generation, tetris and other simple games. Thus with the entire NES mario, DK, and many other plataformers it makes sense why its the biggest genre, and the many shooters like Galaga, Galaxian, Contra, and etc prove that it a profitable genre, And tetris and other puzzle games make it a dominat genre too.

# Analysis by publisher and na understanding of trends over time

- In the 90's with the 16 and 32 bit era, developing games became a better bussines and with the shift from 2D to 3D new and old ideas were still coexistent and in teh same console you could have a lot of unique experiences and tmy data shows the same result that other people found here: wher Mat Piscatella reveals the [most sold game for each of the main 5th generation players]() and the results show thatthere wasn't a single dominant genre

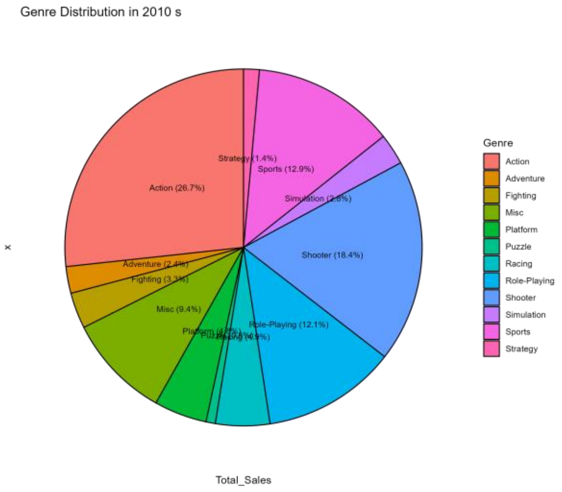



- During the early 2000's there was a repeat of the previous gen, but with the release of the Xbox 360 games staretd to be more action-focused creating na inbalance over other genres and, hoewver the portable systems, being on their best moment and having "outdated" hardware made this be less noticible, because a popular genre ona portable would not made success on conoles but they dominated there.

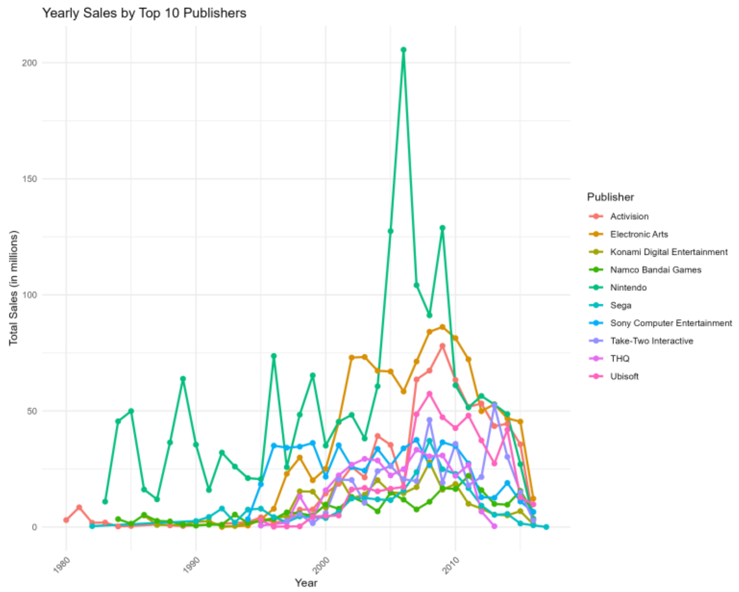


# Analysis by publisher and na understanding of trends over time

- With the ever increasing market focusing on AAA games, certain genres were demed uncessary thus their profit dwindle and they became niche, however expensive games with a cinematic flare became a thing thus making necessary an ever increasing sales number.

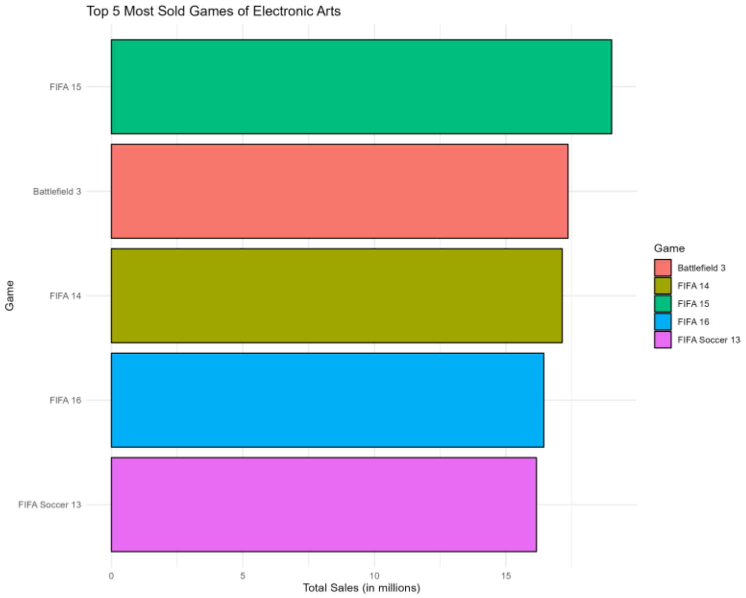



•We can see here that Nintendo has always held a significant share of the market, being for many years in this chart (with this data set) the company that sold the most software. Activision, despite having Call of Duty as the best-selling franchise annually, does not have other entries in several years. Thus, other companies with multiple games on the list take the lead over Activision.

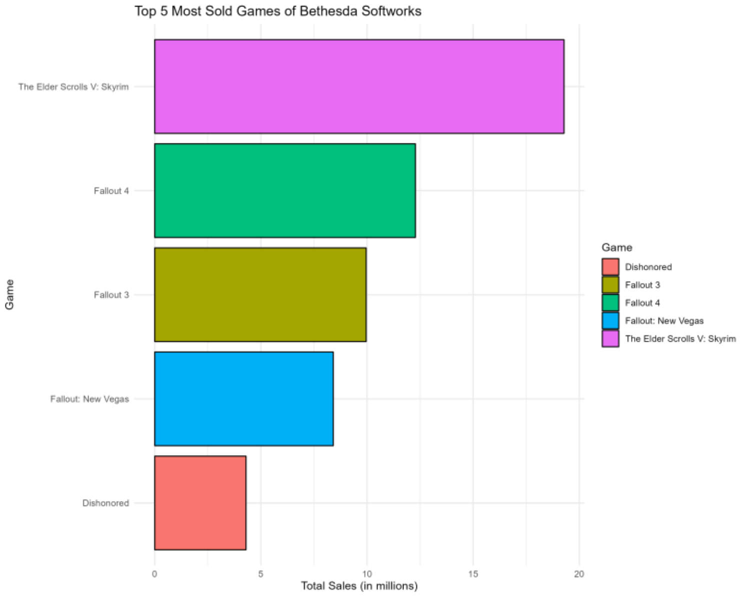


# Analysis by publisher and na understanding of trends over time

- In EA case, we can see that its main dominance is in the sports genre, where it still leads annual sales with soccer and American football. However BattleFieldis also a profitable series and the company still has other IP's like the Sims, SimCity, Dragon Age, Mass Effect and many others so they have no trouble even if there are other series having bad sales



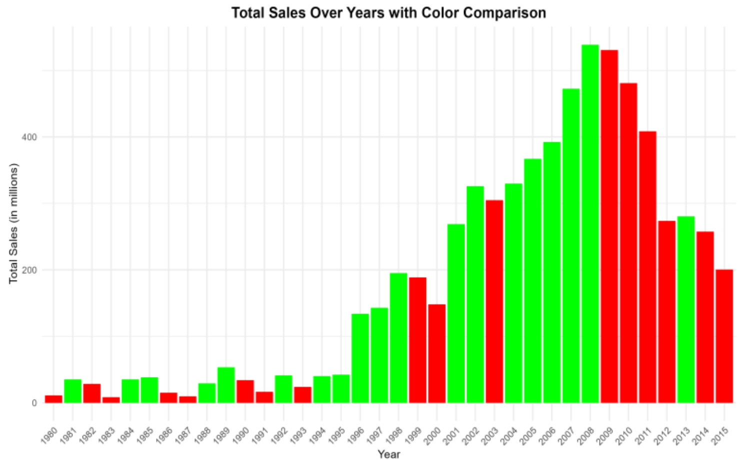

- Bethesda Softworks is also a niche company focused on WRPGs (Western Role-Playing Games), but it has recently started to face competition from CDPR with The Witcher and Cyberpunk series.



# Conclusion & afterthoughts

- The data shows us that despite many assuming it's an unstable industry, we see that up until the analyzed period, instability within the industry seemed not to occur, and there was a consistency until around the beginning of the seventh generation when games developed (excluding those made for the Wii) began to become very expensive, or when companies started investing only in profitable series that undermined niches and greatly reduced the options available to each player, making this segment of the market dependent on larger series. Thus, with high prices and practices like DLCs and microtransactions, indie games that bring fun content and are "cheap" (yet still risky) and quick to produce managed to capture these neglected players. Therefore, the necessary conditions for a successful AAA game include hype, marketing, brand recognition, and the ability to meet each player's expectations. In contrast, for an indie game, what matters is word of mouth and unique gameplay or an evolution of an iconic series.

- In my opinion, the indie market is already showing signs of trouble where established developers are expected to deliver better sequels, but the hype surrounding releases is beginning to create fear of not meeting fan expectations. Additionally, the growing mobile gaming market is showing signs of stagnation, and current plans (especially from Apple) to port console games to mobile devices may not be very effective. For instance, even with the iPhone version reaching 6 million downloads initially and increasing to 7 million after the relaunch with the gold edition including a new DLC and promotions on other platforms, it's evident that it hasn't penetrated iOS effectively.




- Furthermore, there's also the risk now that if a game is released on a subscription service, depending on its replayability, this could affect sales. Subscribing for a trial and playing the game from start to finish is cheaper than buying it outright, potentially cannibalizing sales. Additionally, there's the risk that a major game being released on a subscription service on the same day as another could cannibalize sales if the latter is less well-known.

- In the end, despite the lack of data from the past 9 years or the incomplete coverage in the current dataset from VGChartz and various investor meetings where discussions become public, it's evident that the greatest challenge for major franchises now is growing a game that takes over half a decade to develop and is more profitable than similar investments. Therefore, a possible future for the industry could involve focusing on smaller games with strong art direction, less realistic graphics, and taking more risks in gameplay innovation. This approach reduces the risk of a game failing to succeed in terms of sales, especially considering that most genres are over 30 years old, allowing for experimentation with new techniques and predicting potential success. This could lead to a more secure industry path than what has been observed since 2020.