Analysing Trends of Gaming Generations

(1977 - 2020)

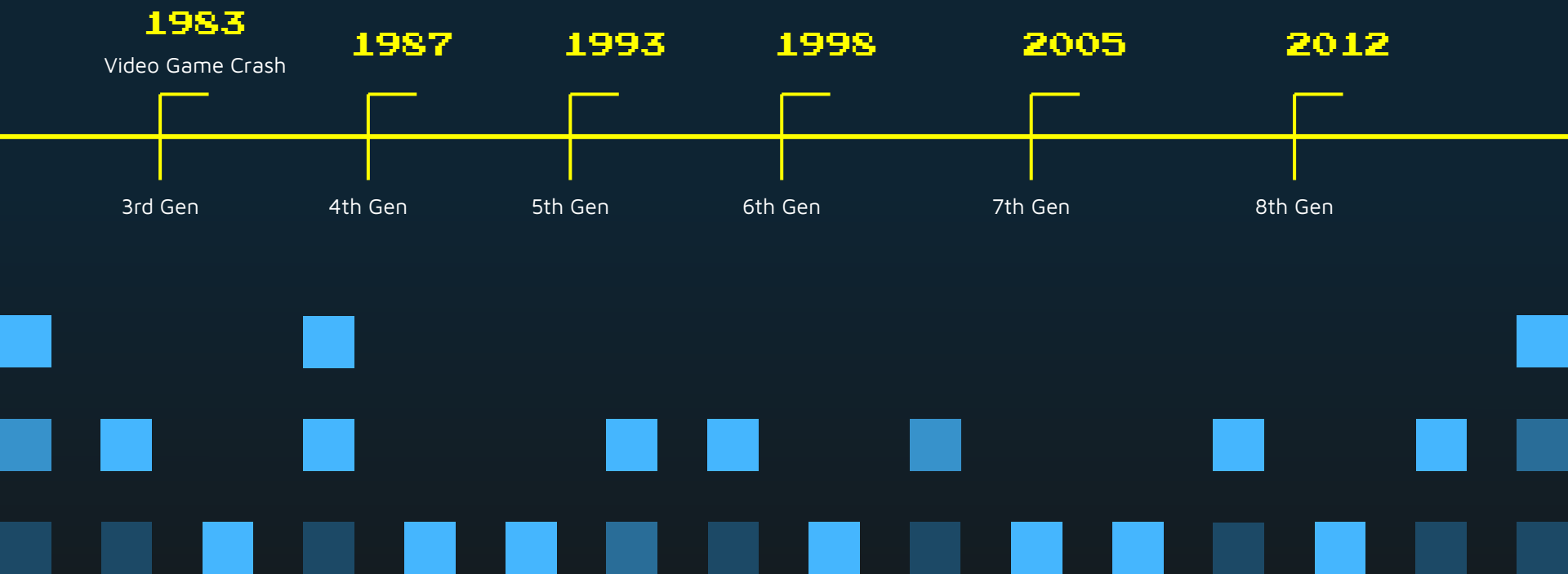By Chris Roach

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INTRODUCTION

Between 1977-2020 there has been 7 generations of video game consoles (2nd-8th Gen).*

The aim of this presentation is to explore the trends of these generations through looking at genres, sales, critic scores and even the impact of a crash that occurred around 1983.

*Generations sourced from BBC

Timeline

1983

Video Game Crash

1987

1993

1998

2005

2012

3rd Gen

4th Gen

5th Gen

6th Gen

7th Gen

8th Gen

Key Figures

6.5B+
Total Sales

2.6k+
Developers

12k+
Video Games

Evolution of the Years

|	1977	2020	Change (%)
Developers	1	2657	265600%
Total Sales	2.5M	6.59B	263872%
Video Games	3	12001	399933%

Top 5 Best Selling Games

Here we have the Top 5 Best Selling titles between 1977 - 2020.

This merges all console specific releases into a singular title. GTA V's popularity is unmatched with it being more than entry 2 and 3 combined!

Although, we can see how profitable the Call of Duty franchise is with it covering 4 out of the 5 entries.
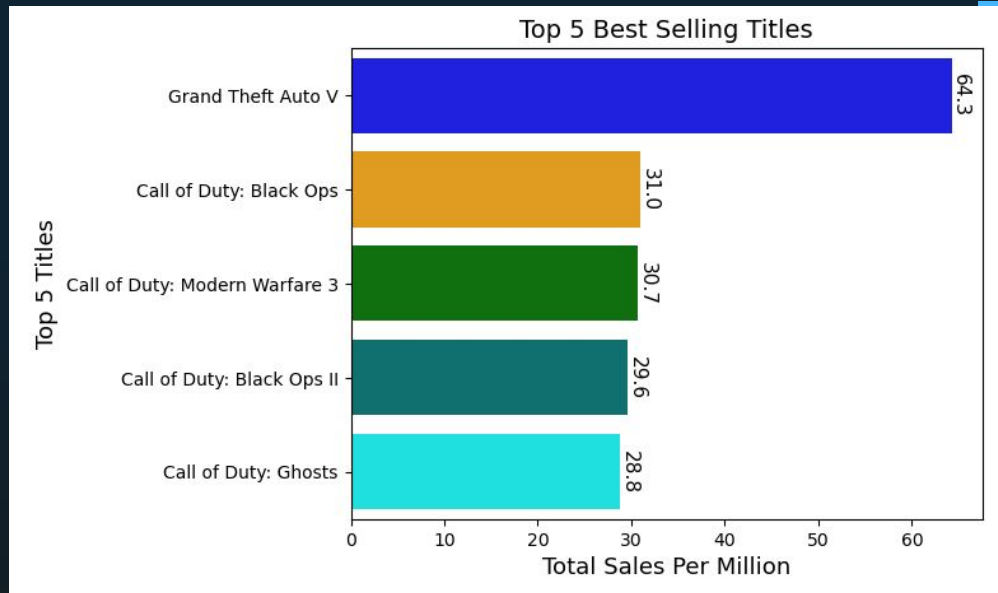
Top 5 Best Selling Titles

Top 5 Best Selling Games (by console)

In this plot to the right, we can see the same Top 5 titles but with a symbol representing a console.

As we can see according to the data, PS3 and X360 seems to be overly dominant compared to other consoles.

PC and the handhelds/ peripherals (DS, Wii etc.) are relatively low which may indicate these titles were made with leading consoles and their controllers in mind.


Top 5 Best Selling Titles (Separated by Console)
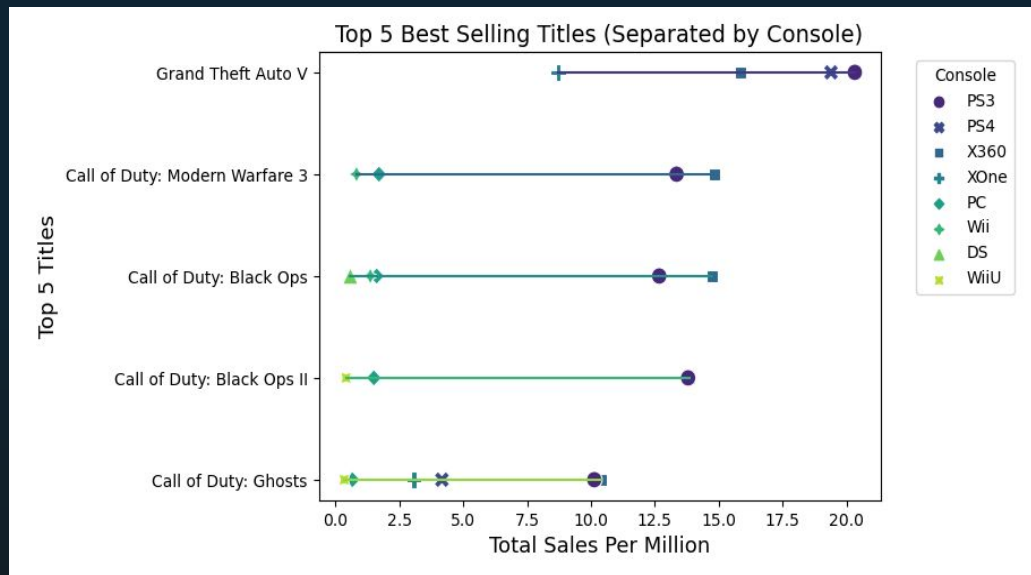
Ratings of Gaming Genres

This plot is showing genres with more than 1 critic score entry. Action provides us with the highest rated title (GTA V, 9.7), but the best average genre was Music with 7.8.

The outliers (black diamonds) can be considered accurate entries as many titles are released with low scores due to things such as poor performance, being too costly, weak story/ gameplay and other issues.

Due to the amount of entries per genre, it is important to know that average score may be skewed if a genre has a larger amount of entries (Action=706, Music=16).
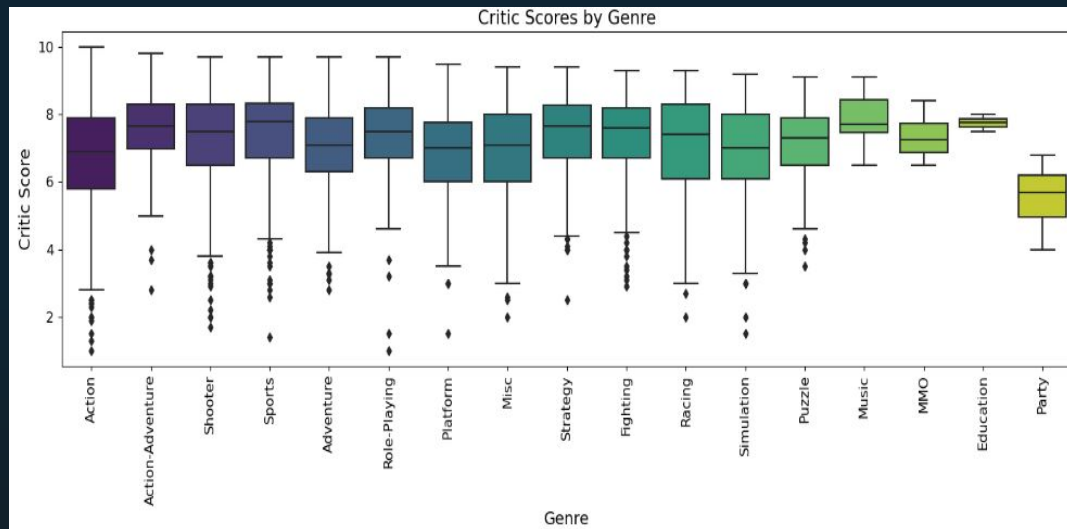
Sales vs Critic Score

Here we are seeing if there is a correlation between critic score and sales. The average sales from scores between 0-7 is around 400k, whereas 7-10 is just under 1M.

The best sales on 0-7 is Call of Duty: Ghosts with a 6.9 rating and 10.41M sales. This can be considered an outlier as it does not match the trend of others in its category. 7-10 shows us GTA V is the best seller with 20.32M as well as showing more entries with bigger sales compared to 0-7.

Call of Duty: Ghosts has 10.41M sales, the best in 0-7. Looking at 7-10 and we have 19 more entries which exceed those sale numbers. This shows a higher rated game has an increased chance of selling more.
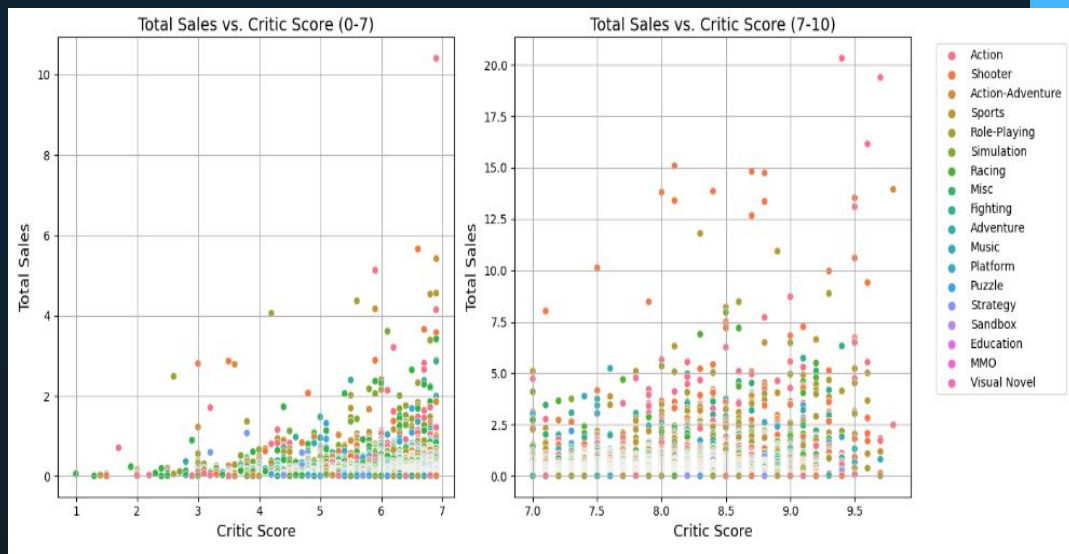
The Best Time to Sell a Game

We can see here that the best time to sell a video game for peak sales would be around the holiday season (Oct - Nov).

The sales make sense as this would be in time for the Christmas period, as well as a period where top titles are usually released. December drops as new releases are minimal in this month.

Some big hitters in this period are Call of Duty and Battlefield titles, Halo and Grand Theft Auto V.


Total Sales by Month of Release
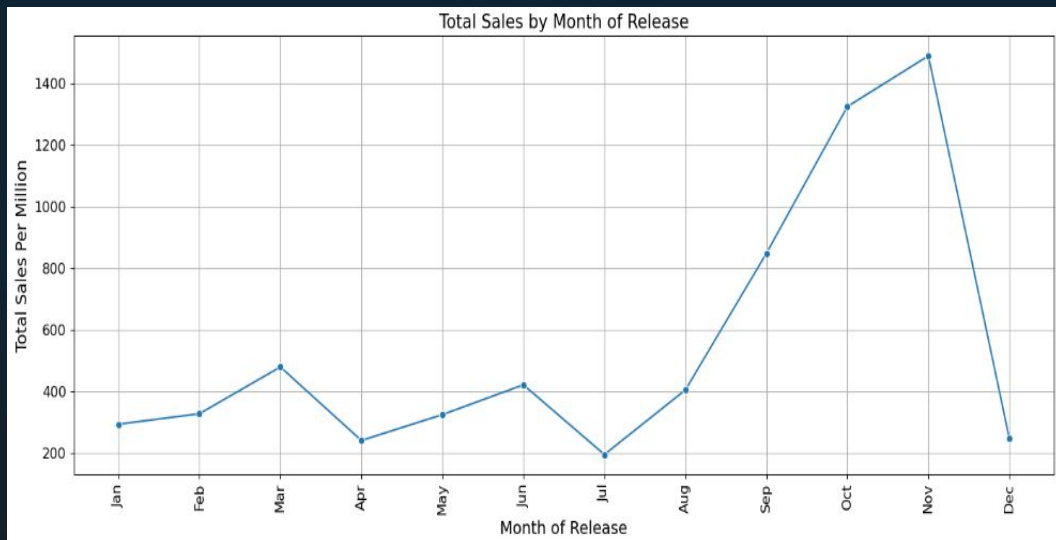
Generation Sales

This plot is showing us the total sales of each generation, allowing us to see the profitability of gaming.

7th Gen is the most popular with 2.9B sales, this would include X360 and PS3, and successful titles such as Call of Duty and Grand Theft Auto.

The 8th Gen seems lower but it is an ongoing generation, if the trend continues, it will break the 3B barrier.

Sum of Total Sales for Each Generation
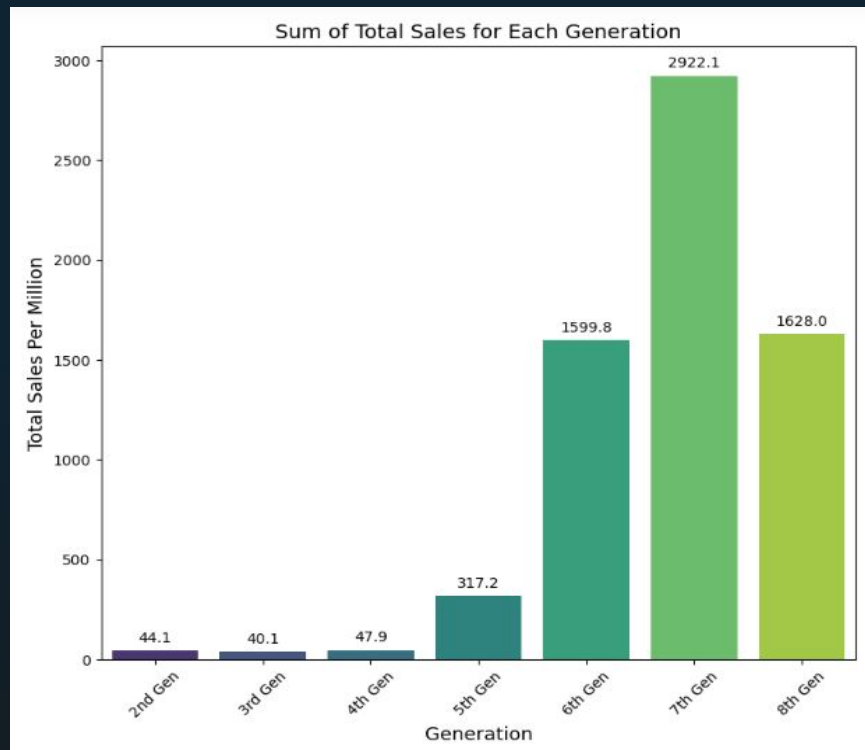
Generation Sales (by Genre)

Here we can see the most popular genres of the generations. Platform appears twice but it is Action that takes the win with 540M sales in the 7th Gen.

Seeing the genre shows the type of games people wanted during these generations or even the outbreak of newer titles for the time. 5th Gen shows Fighting, but this is also the release of genre defining titles like Mortal Kombat and Tekken.

6th Gen is Sports but also the first generation with big budget quality sports games such as FIFA, Madden and Tony Hawk's Pro Skater. Shooters and Action for 7th and 8th Gen would be linked to releases such as Call of Duty, Battlefield and GTA.


Top Sold Genre for Each Generation
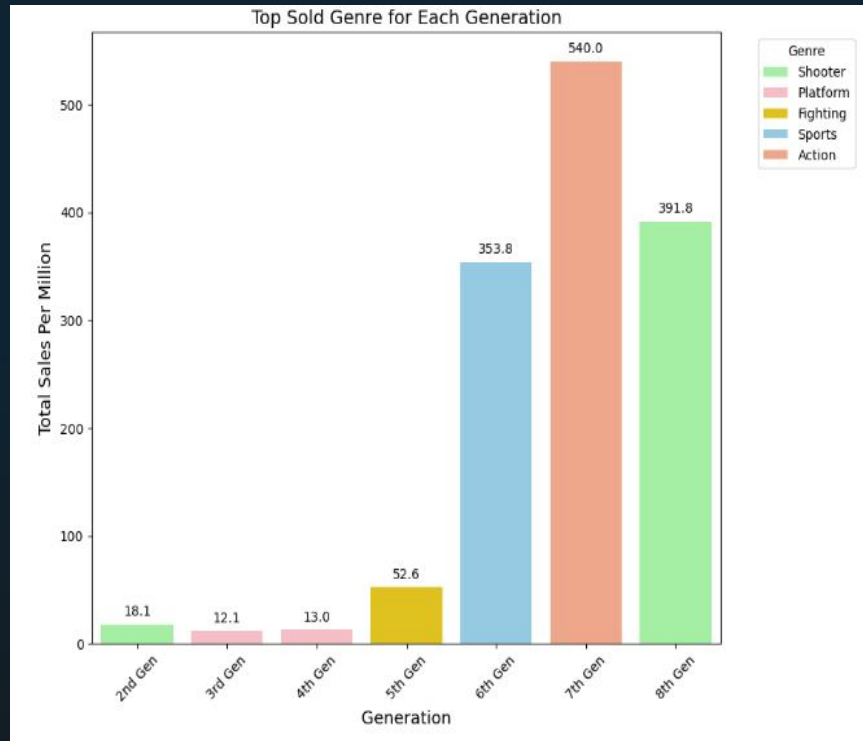
Video Game Crash Of 1983 (Sales)

The Video Game Crash of 1983 was an industry defining time where the business of gaming collapsed. This was due to a number of factors such as competition from PC's, economic factors, but most of all, an oversaturation of poor quality games.

The title linked to the collapse was E.T: The Extra Terrestrial, seeing the plot shows the downfall of sales when this title was released. The games awful quality was the last straw for consumers and resulted in the remaining E.T. cartridges being buried in a desert!

The crash is said to had ended in 1985 when Japan entered the scene with the Nintendo. The following releases from Japan revived the gaming scene: Super Mario Bros and The Legend of Zelda.
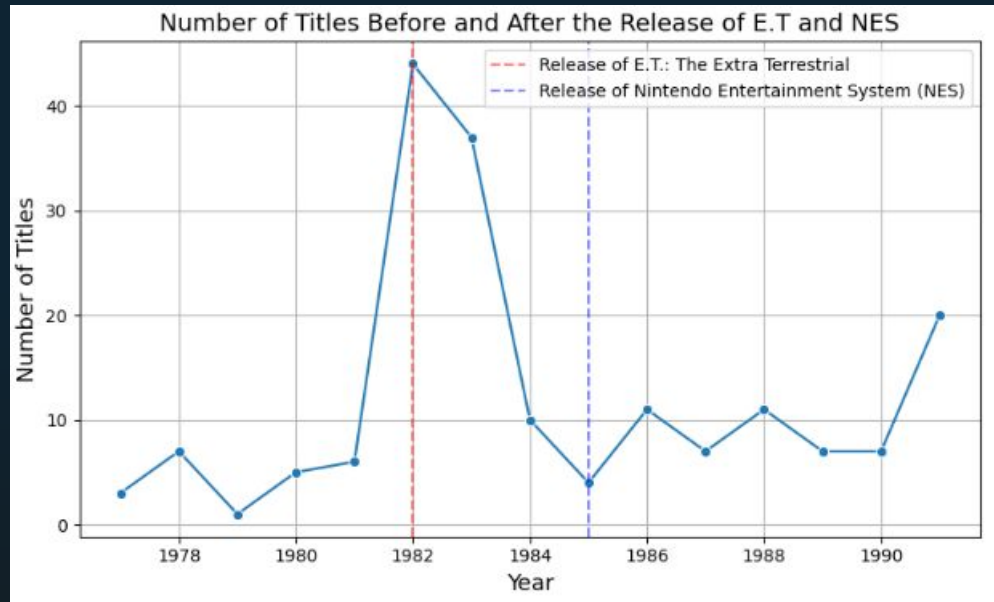

Total Sales Before and After the Release of E.T and NES
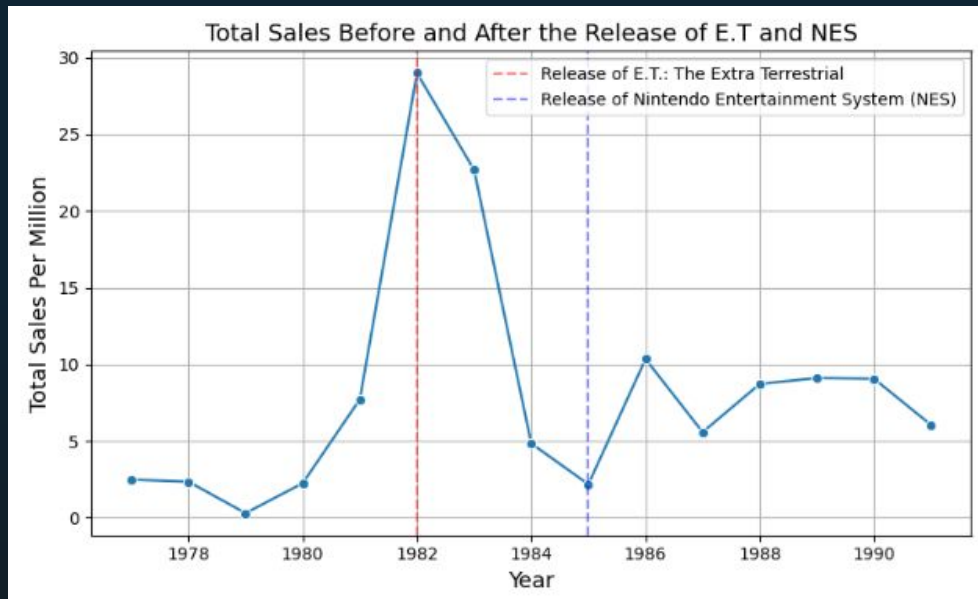
Video Game Crash Of 1983 (Titles)

In this plot we can see the number of titles released around the crash. A factor of the crash was an oversaturation of poor quality titles and this graph proves a huge increase in releases.

At the point before the spike (around 1981), 6 titles were released. In 1982, 44 titles were released, a change of over 630%! By 1985, just before the reviving of the industry, there was 4 releases.

With Japan on the scene from 1985, the game defining releases boosted the industry with 1986 having near triple the releases of 1985 and by the 1990s, titles and sales were booming.


Number of Titles Before and After the Release of E.T and NES
- - - Release of E.T.: The Extra Terrestrial
- - - Release of Nintendo Entertainment System (NES)

Video Game Crash Of 1983 (Region Sales)

Here we can see the impact of sales by region. NA Sales (Blue), JP Sales (Orange), PAL Sales (Green) and Other Sales (Red). PAL is an encoding term for TV's, mainly used outside USA. This will cover Europe, Asia, Africa and Middle East with Other Sales covering the very few regions not using PAL.

As we can see, the crash deeply affected the NA Sales, we can see the popularity gaming had in that region compared to the rest of the world. Going from 27M sales to just over 1M in the span of 2-3 years is catastrophic.

In 1983 we can see a little lift from Japan entering the scene but it is 1985 where they took over the industry and remained dominant until a little blip around 1989-1990 before taking over once more the following year.

Region Sales Before and After Video Game Crash (1977-1992)
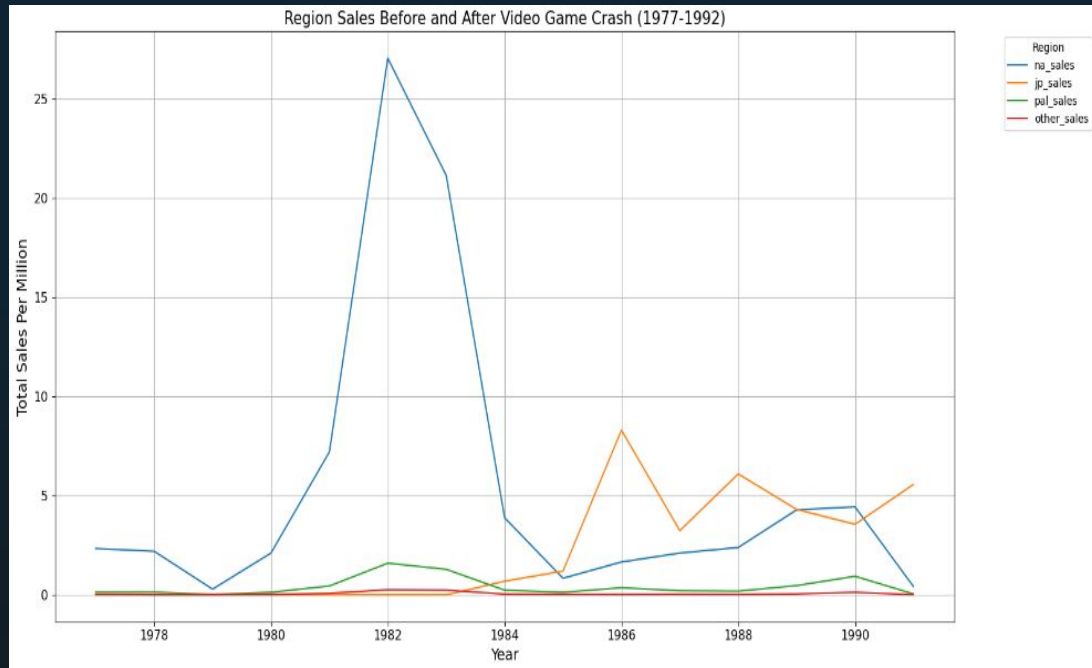
Conclusion

In analysing the video game data between 1977-2020, several findings were emerged:

Best Selling Games
- The best selling game is GTA V with 64.3 million sales.
- The Call of Duty franchise is extremely profitable with 4 out of the top 5 games averaging around 30 million sales.

Most Profitable
- The PS3 and Xbox 360 were identified as the most profitable consoles, highlighting the success of the 7th Generation.
- The 7th Gen was the most profitable Generation with just under 3 Billion sales, but as the 8th Gen is ongoing, it has potential to break this barrier.
- Titles released in the holiday period (Oct-Nov) is strategically advantageous and will maximise sales potential.

Popular Genres and Critic Scores
- The Action genre emerged as the most popular, often featuring the highest rated games.
- Games with critic scores between 7 and 10 shown higher average sales, around 1 million units, and were more likely to achieve significant sales compared to games with scores below 7.

Video Game Crash of 1983
- The data reflects the significant downturn following the release of E.T.: The Extra-Terrestrial in 1982, linked to the video game crash.
- The industry's revival is marked by the release of the Nintendo Entertainment System (NES) in 1985 and Japan's significant entry into the gaming market, leading a new era of growth and defining titles.

Final Thoughts

For further analysis, the following improvements could be considered:

- Extending the dataset beyond 2020 to capture more recent trends and developments.
- Incorporating a cost per title column to evaluate profitability more thoroughly.