

# Exploratory Analysis of Global Video Game Sales and Ratings

Based on Kaggle Video Game Sales Dataset (as of Jan 2017)

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# Motivation & Project Scope

## Why Video Games?

- The video game industry is one of the largest global entertainment markets
- A personal interest in video games motivated the selection of this dataset, enabling a more engaged and meaningful exploration of sales and rating patterns.

## Why This Dataset?

- Includes platform, genre, and publisher information
- Contains critic and user ratings, enabling quality vs sales analysis

## Why Use an Older Dataset?

- Enables analysis of platform life cycles and genre evolution
- Suitable for studying structural patterns in the industry

# Dataset Overview

## Source

Kaggle: Video Game Sales and Ratings (as of January 2017)

## Dataset Size

- 15 columns
- 17,416 rows

## Key Attributes

- Metadata: Platform, Genre, Publisher, Year of Release
- Ratings: Critic Score, User Score, ESRB Rating

# Q1 How have global video game sales evolved over time?

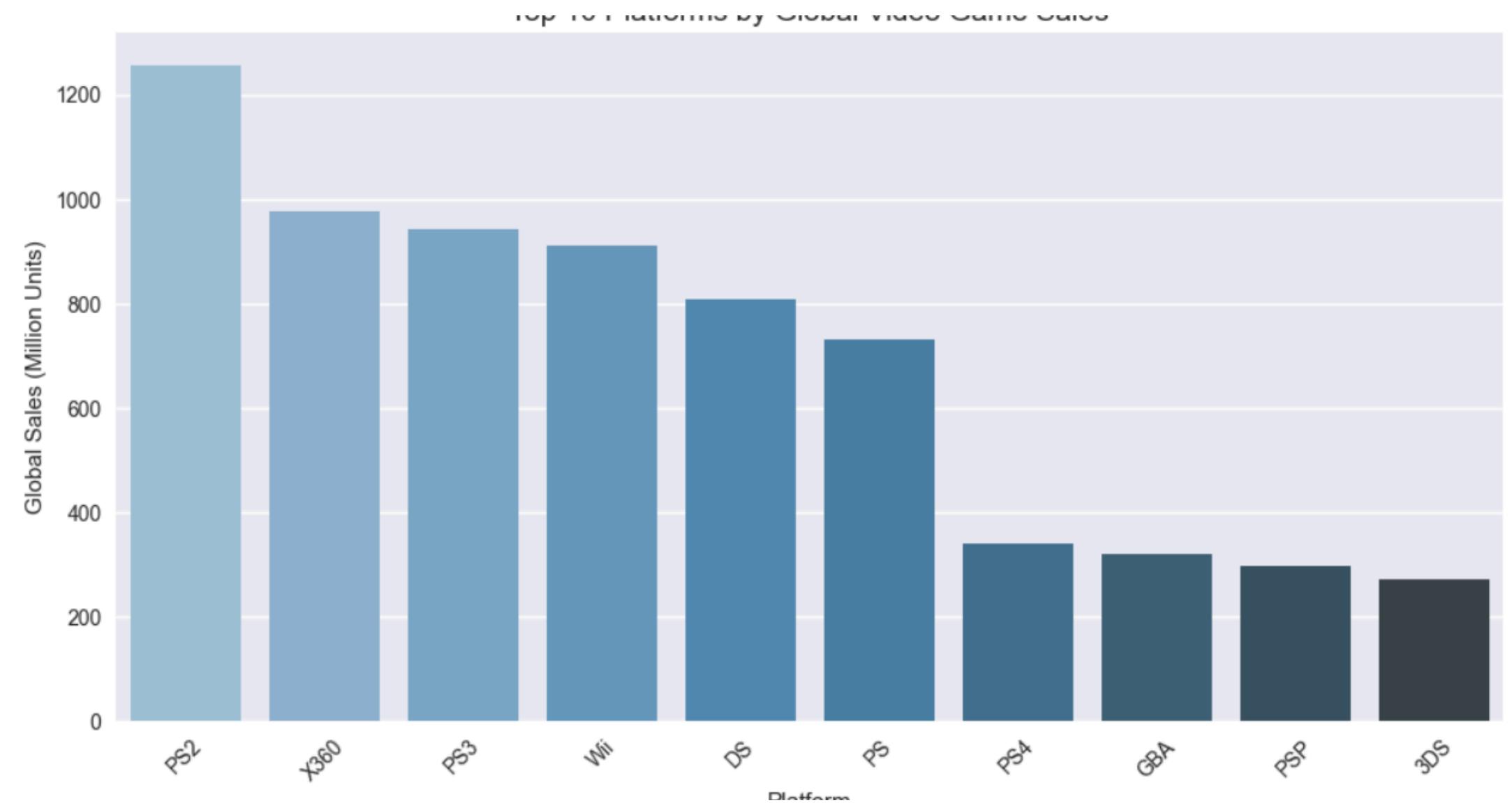
- Global video game sales increased steadily from the late 1970s and accelerated rapidly after the mid-1990s.
- Sales peaked around 2008–2009, corresponding to a major console generation and widespread market adoption.
- A decline in sales is observed after 2010, indicating market saturation and a shift in industry dynamics



**Conclusion** - The video game industry experienced strong long-term growth followed by a peak and gradual decline, reflecting a mature market undergoing structural changes.

## Q2 Which platforms generate the highest total global sales?

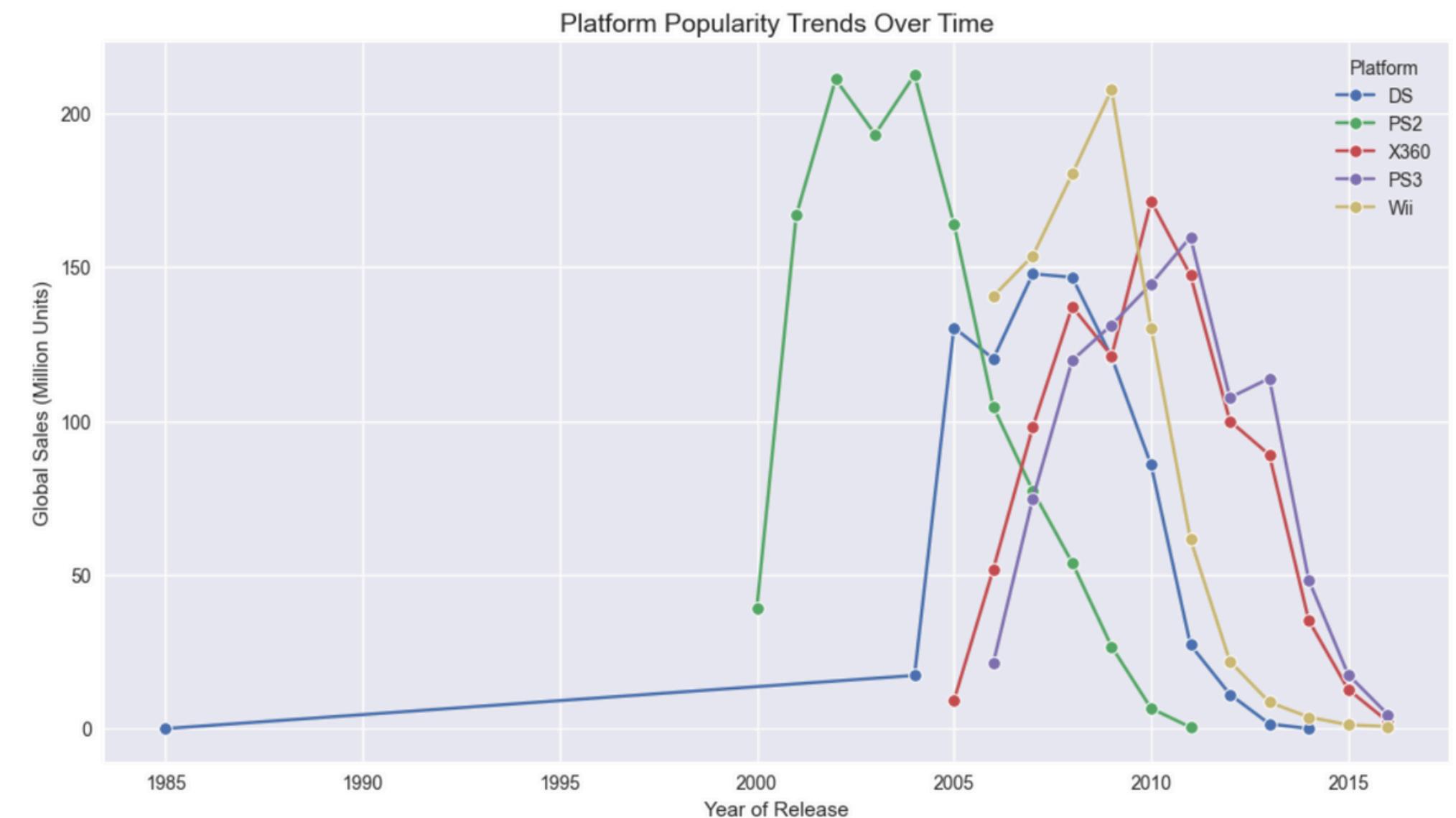
- The PlayStation 2 (PS2) is the highest-selling platform by a clear margin.
- Console platforms dominate the top rankings, while handheld systems contribute in comparatively lower total global sales.



**Conclusion** - Global video game sales are highly concentrated among a small number of console platforms, highlighting the importance of platform longevity and ecosystem strength in steering commercial success.

# Q3 How has platform popularity changed over time?

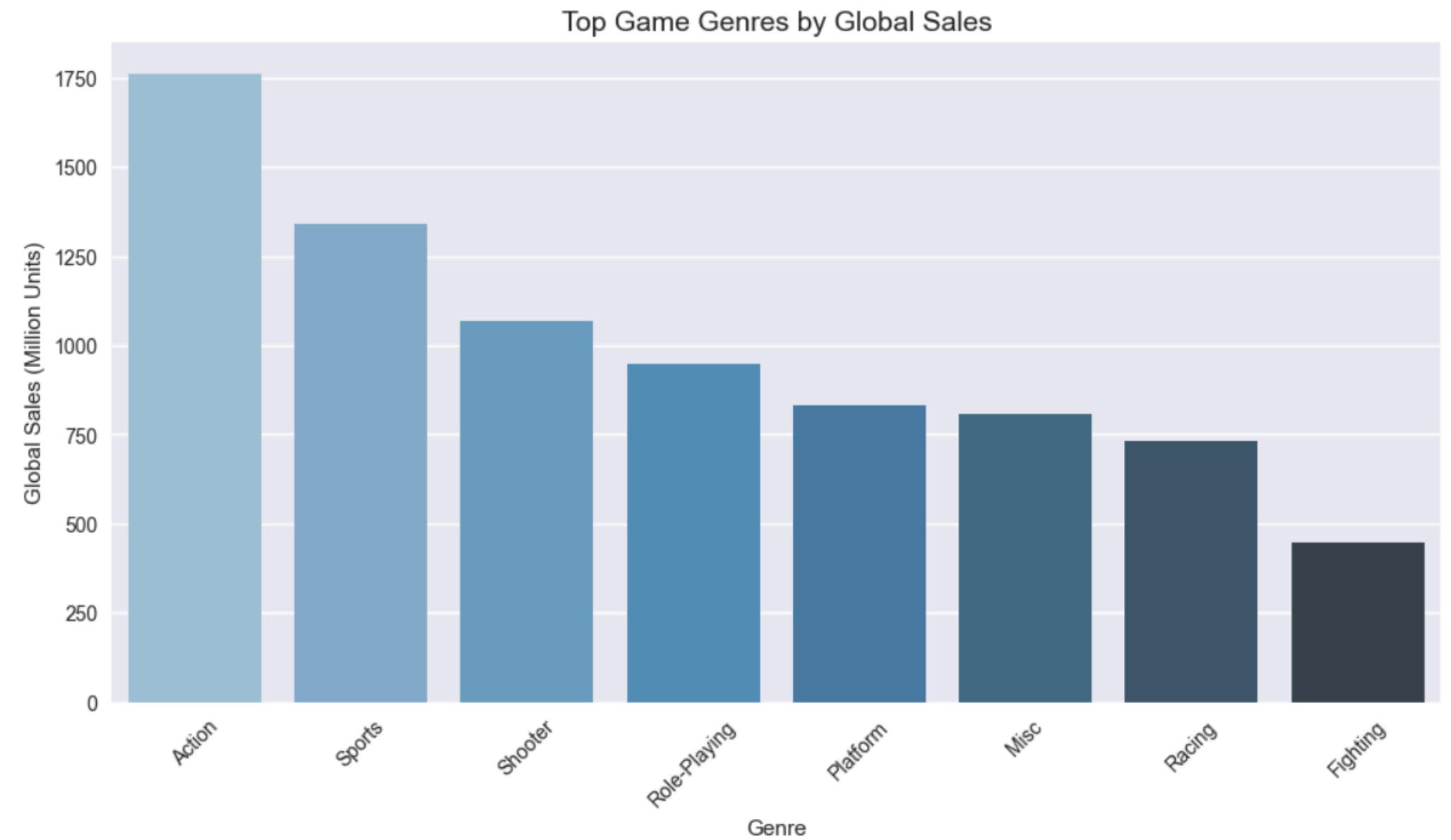
- Each major platform exhibits a clear life cycle, with sales rising rapidly after launch, peaking, and then declining over time.
- Market leadership shifts between platforms across console generations, with PS2 peaking earlier, followed by Wii, Xbox 360, and PS3 in later years.



**Conclusion** - Platform popularity in the video game industry is dynamic, with commercial success driven by generational leaps rather than one single platform dominance.

# Q4 Which game genres generate the highest global sales?

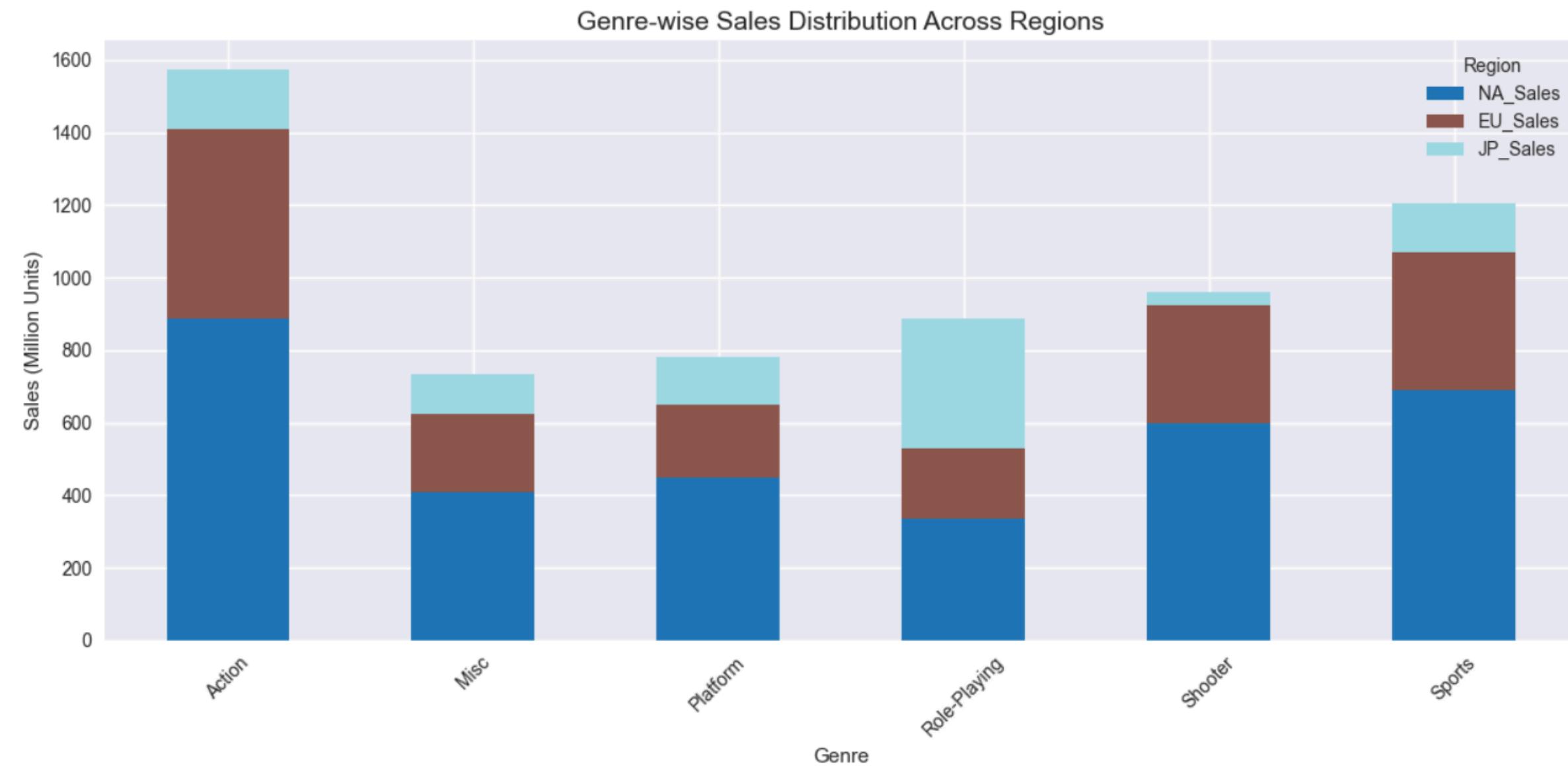
- Action games genre generate the highest global sales, significantly outperforming all other genres.
- Sports and Shooter genres also show strong sales, indicating broad market appeal.



**Conclusion** - Global video game sales are heavily concentrated into a specific set of genres, emphasizing the importance of content type in driving commercial success.

# Q5 How do different game genres perform across regions?

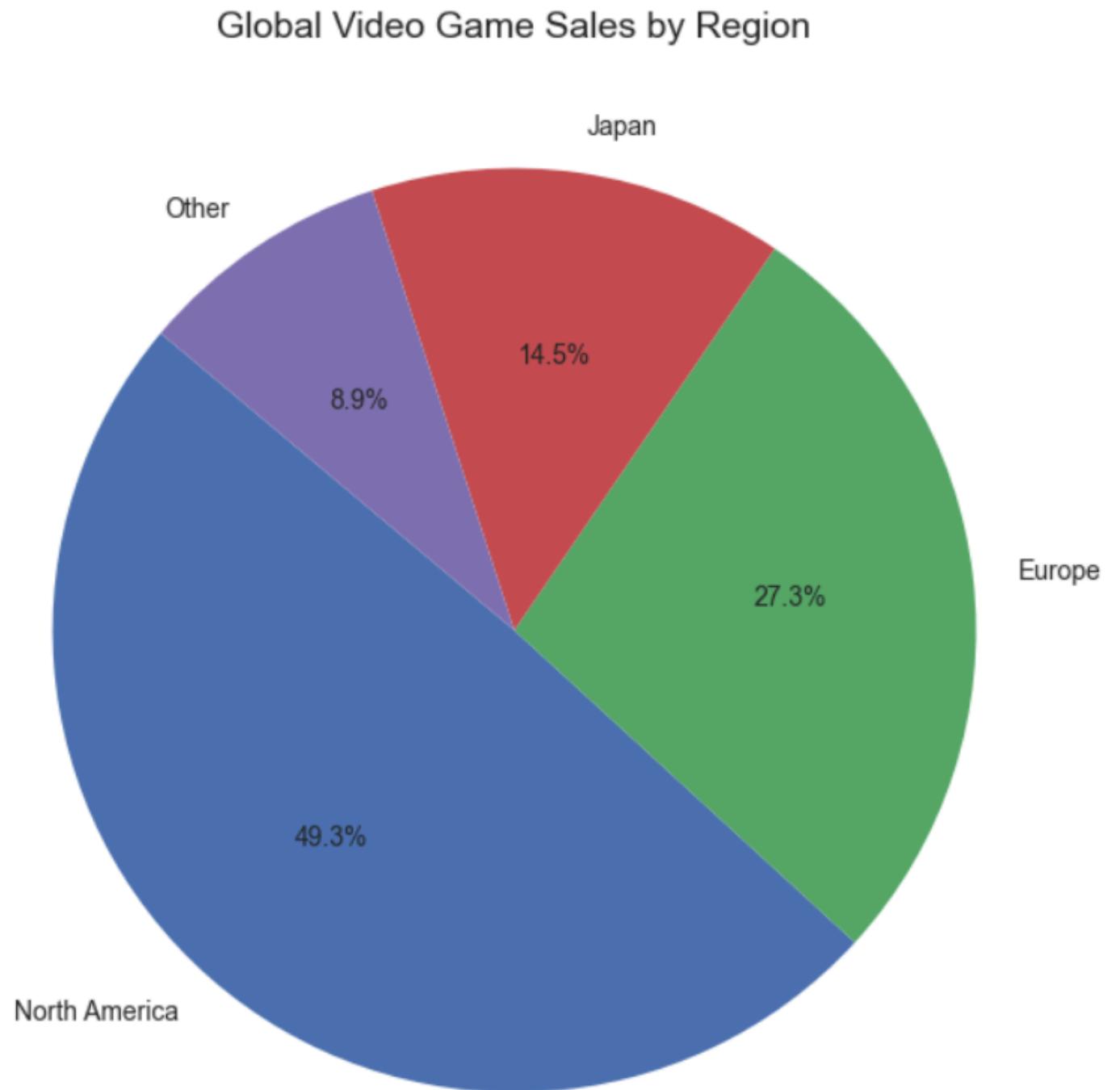
- North America contributes the largest share of sales across all major game genres.
- Europe consistently represents the second-largest market.
- Japan shows a comparatively stronger preference for role-playing games.



**Conclusion** - Video game genre popularity varies by region, with Western markets driving overall sales while Japan exhibits distinct genre preferences like role-playing games.

# Q6 How do regional sales contributions differ globally

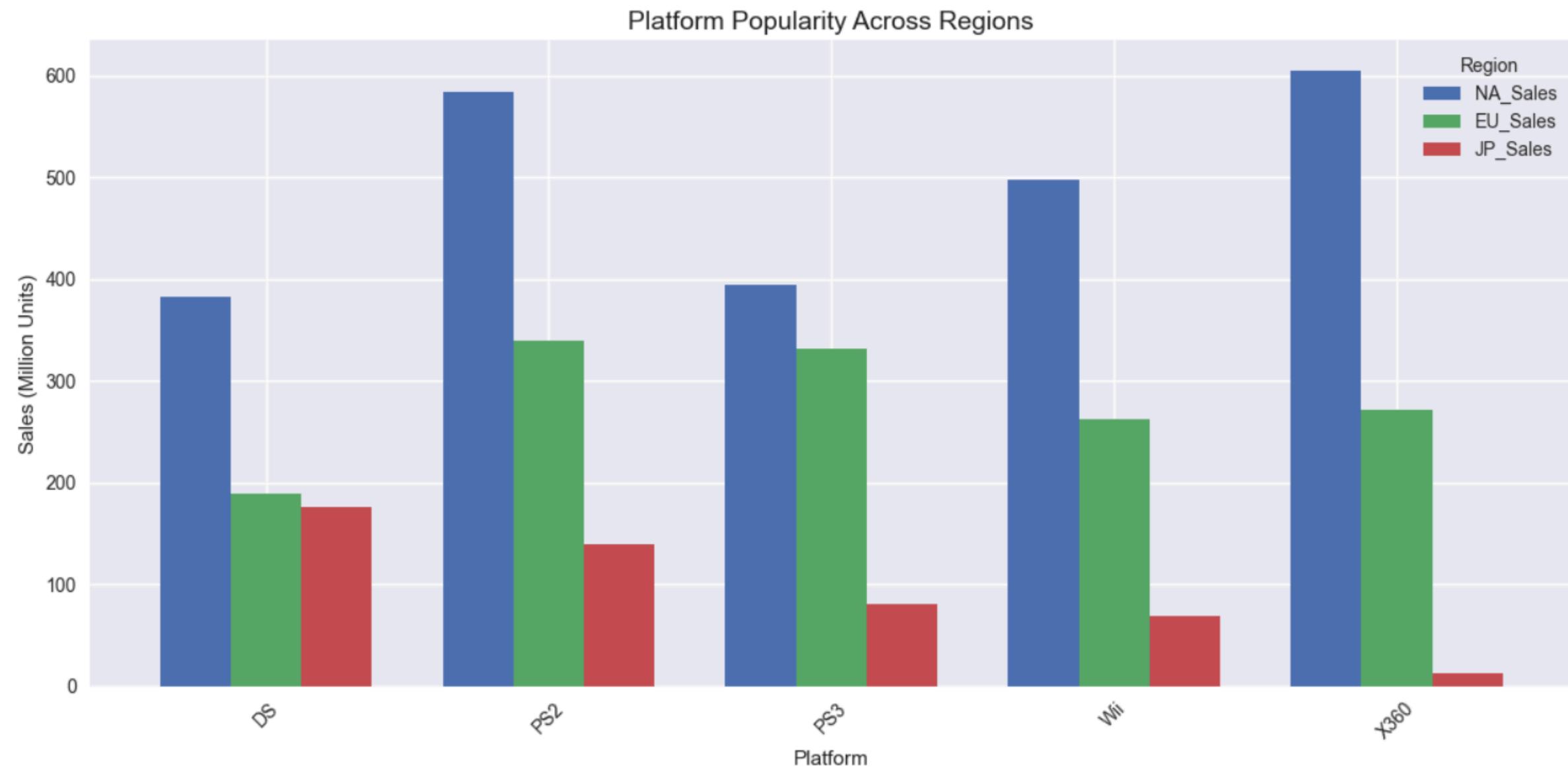
- North America dominates global video game sales, accounting for nearly half of total sales.(49.3%)
- Europe represents the second-largest market, contributing at around 27.3 % of total global sales.
- Japan and other regions together make up less than one quarter of total global sales.



**conclusion** - Global video game sales are heavily concentrated in Western markets during ,late 90s and early 20s with North America and Europe driving the majority of industry revenue.

# Q7 Which platforms are most popular in each region?

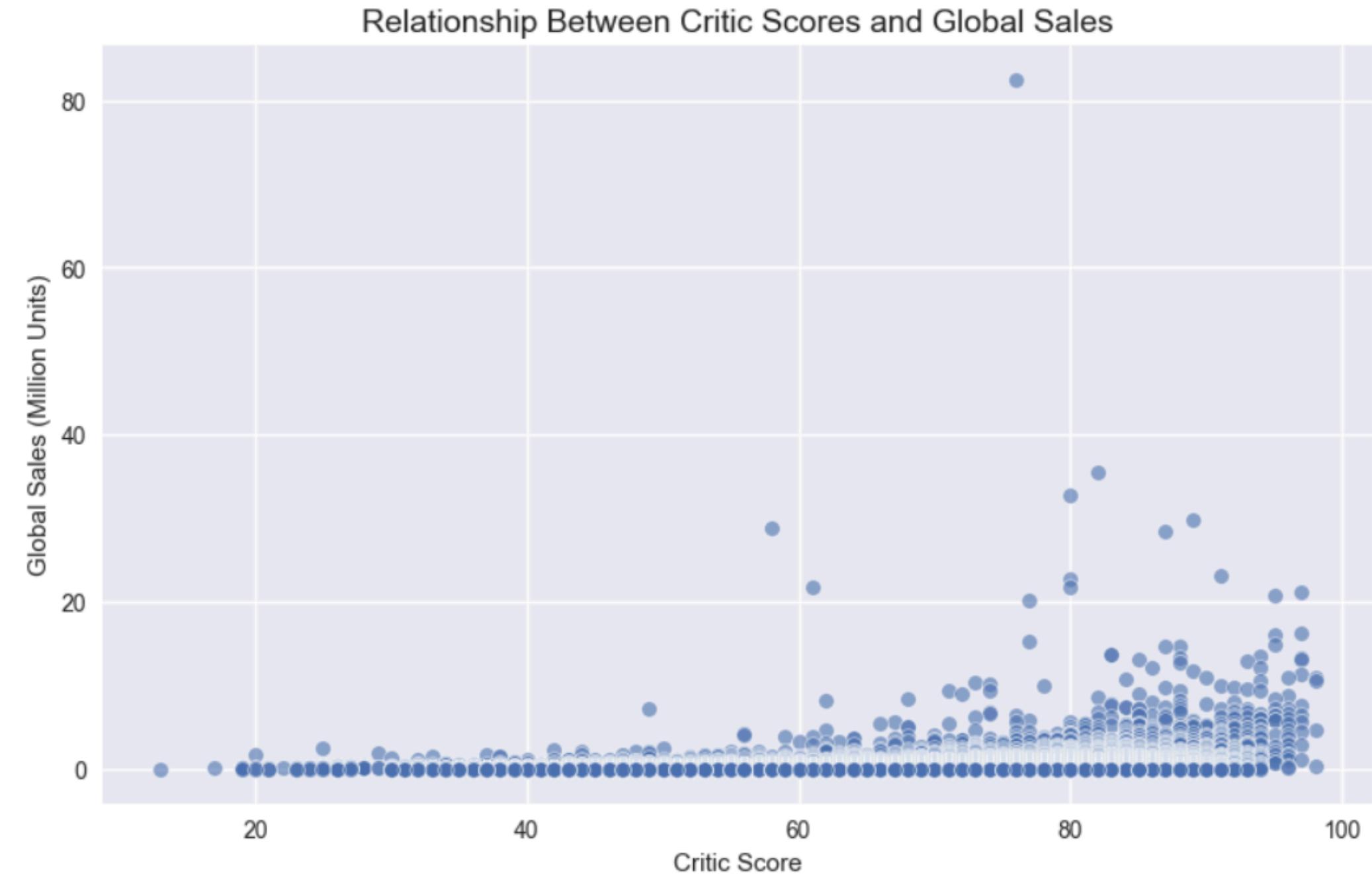
- All the platforms are popular in North America but ps2 and xbox 360 dominates.
- Xbox 360 is least popular in japan region.
- Platforms are also equally popular in Europe but with relatively lower sales.



**Conclusion** - Video game platform popularity varies strongly by region, with Western markets driving platform success while Japan exhibits more selective platform adoption.

# Q8 Is there a relationship between critic scores and global video game sales?

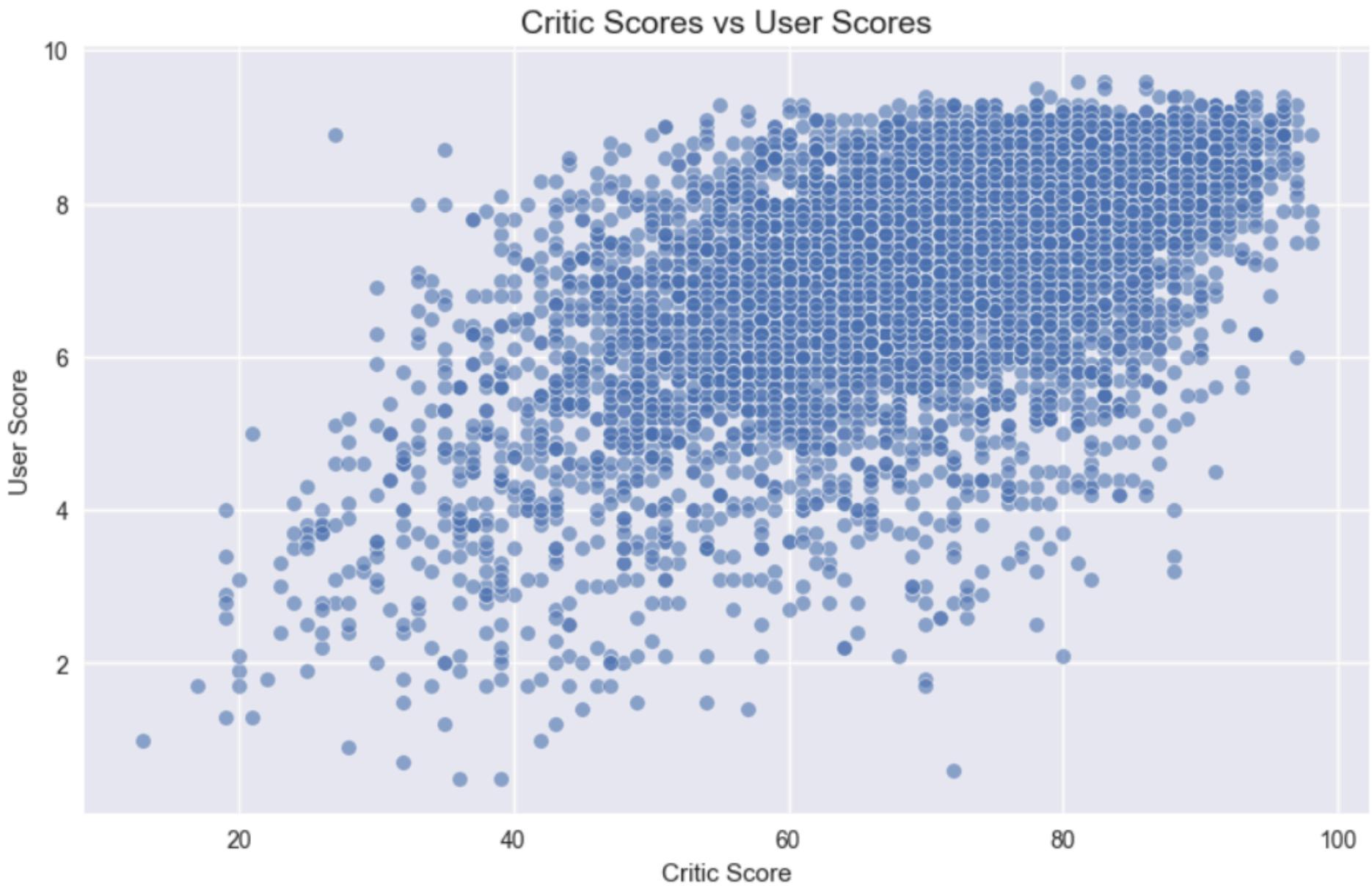
- A weak positive relationship exists between critic scores and global sales.
- Most games achieve low sales regardless of critic score, indicating high market competition.



**Conclusion** - Critic scores alone does not guarantee commercial success

# Q9 Do critic scores and user scores align?

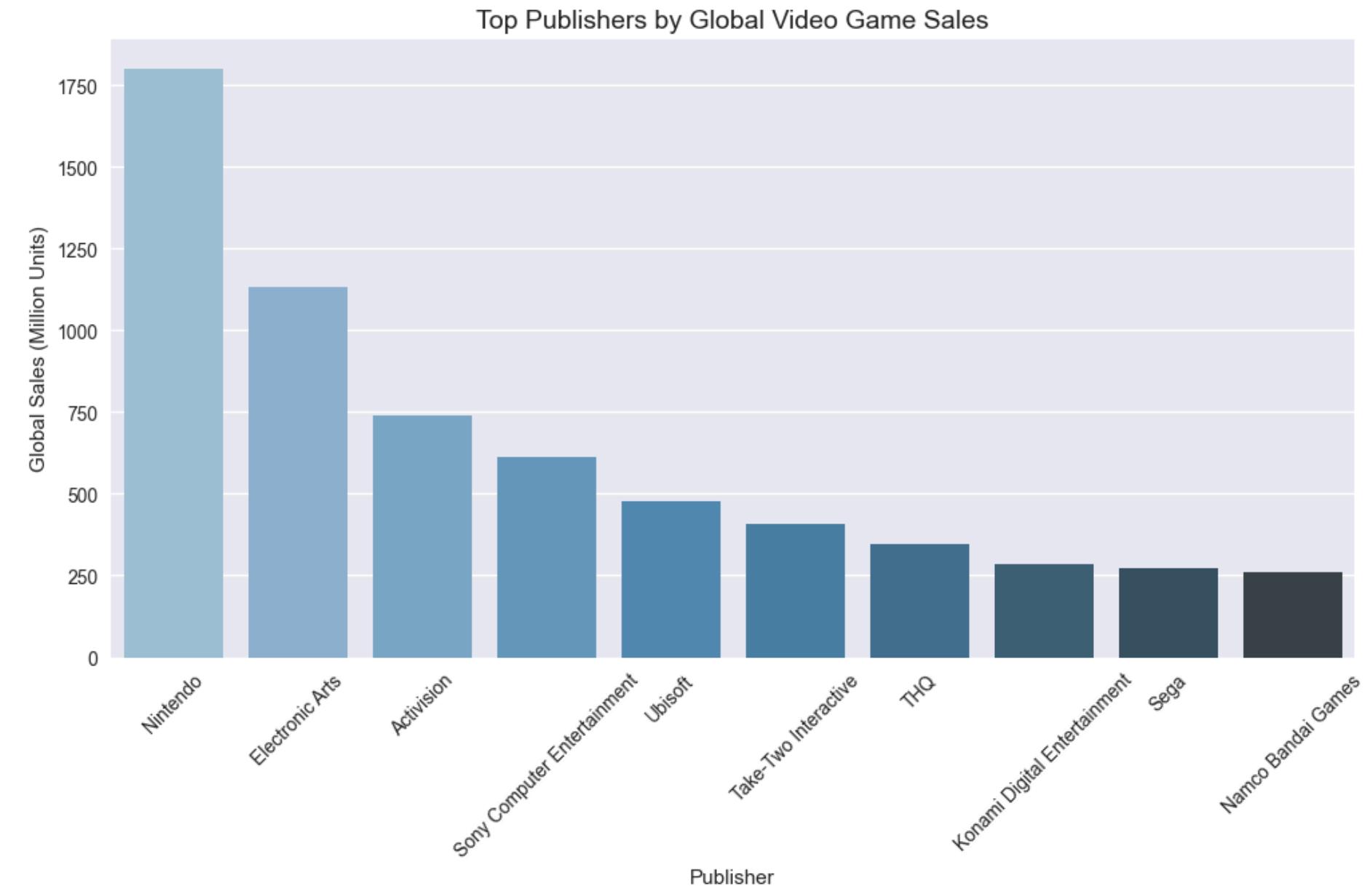
- Critic scores and user scores shows a clear positive relationship.
- User ratings show greater variability at lower critic scores.



**Conclusion** - Critics and users broadly agree on game quality, though subjective player preferences lead to noticeable distortion.

# Q10 Is commercial success driven by a few highly successful publishers?

- Nintendo is the highest-selling publisher by a significant margin, clearly leading the market.
- A small group of publishers (Nintendo, Electronic Arts, Activision, Sony) accounts for the majority of global sales.



**conclusion** - Commercial success in the video game industry is largely driven by a few dominant publishers.

# **Key Takeaways & Limitations**

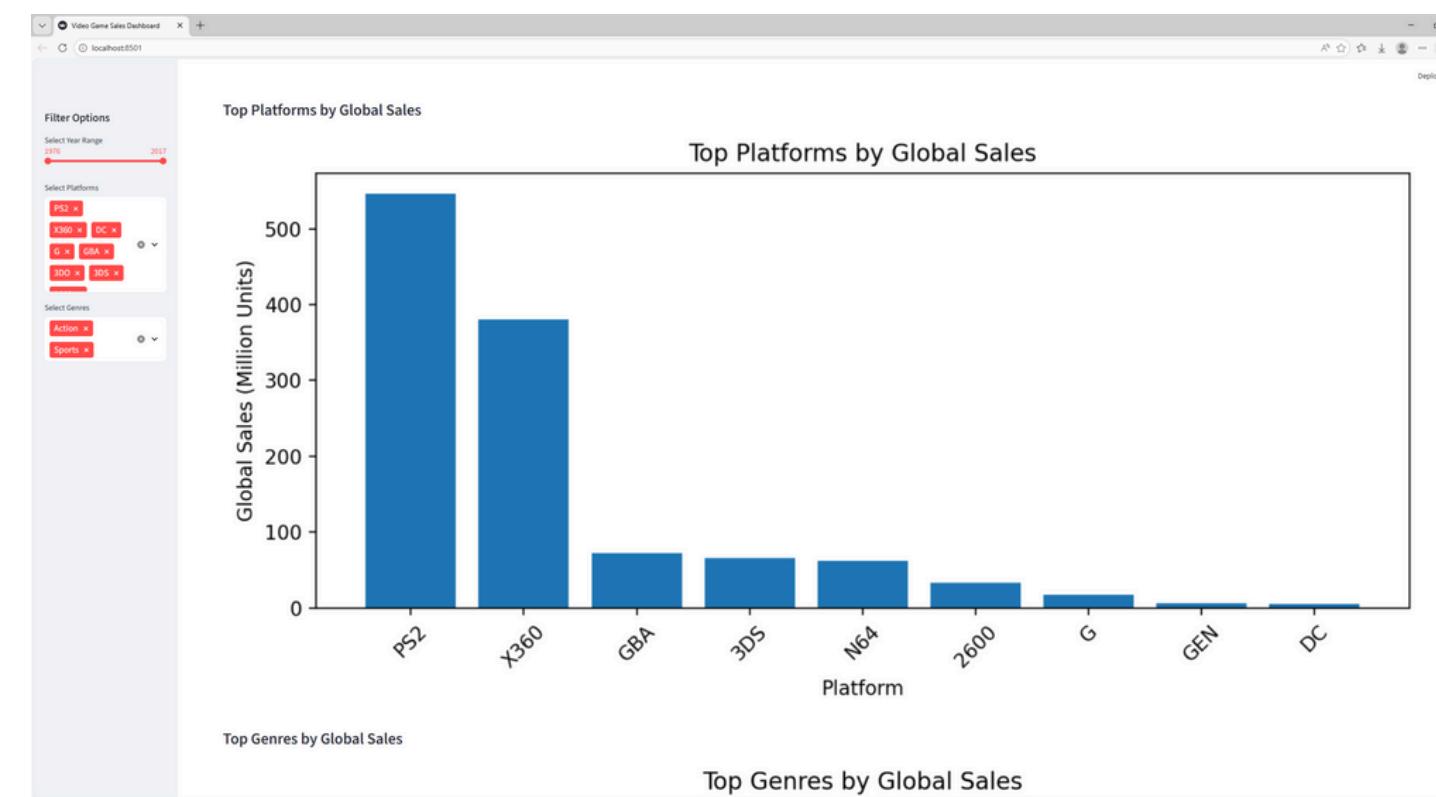
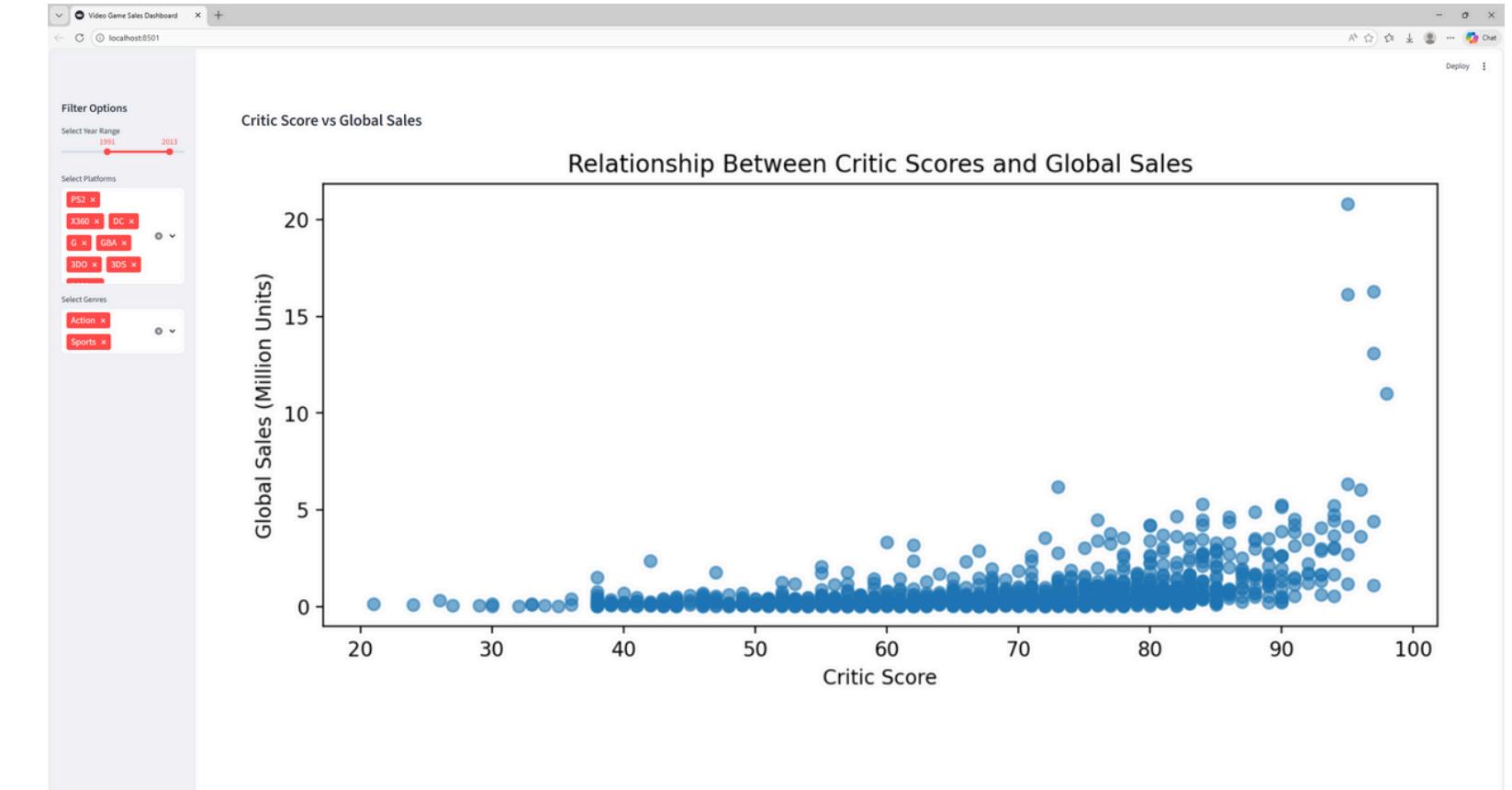
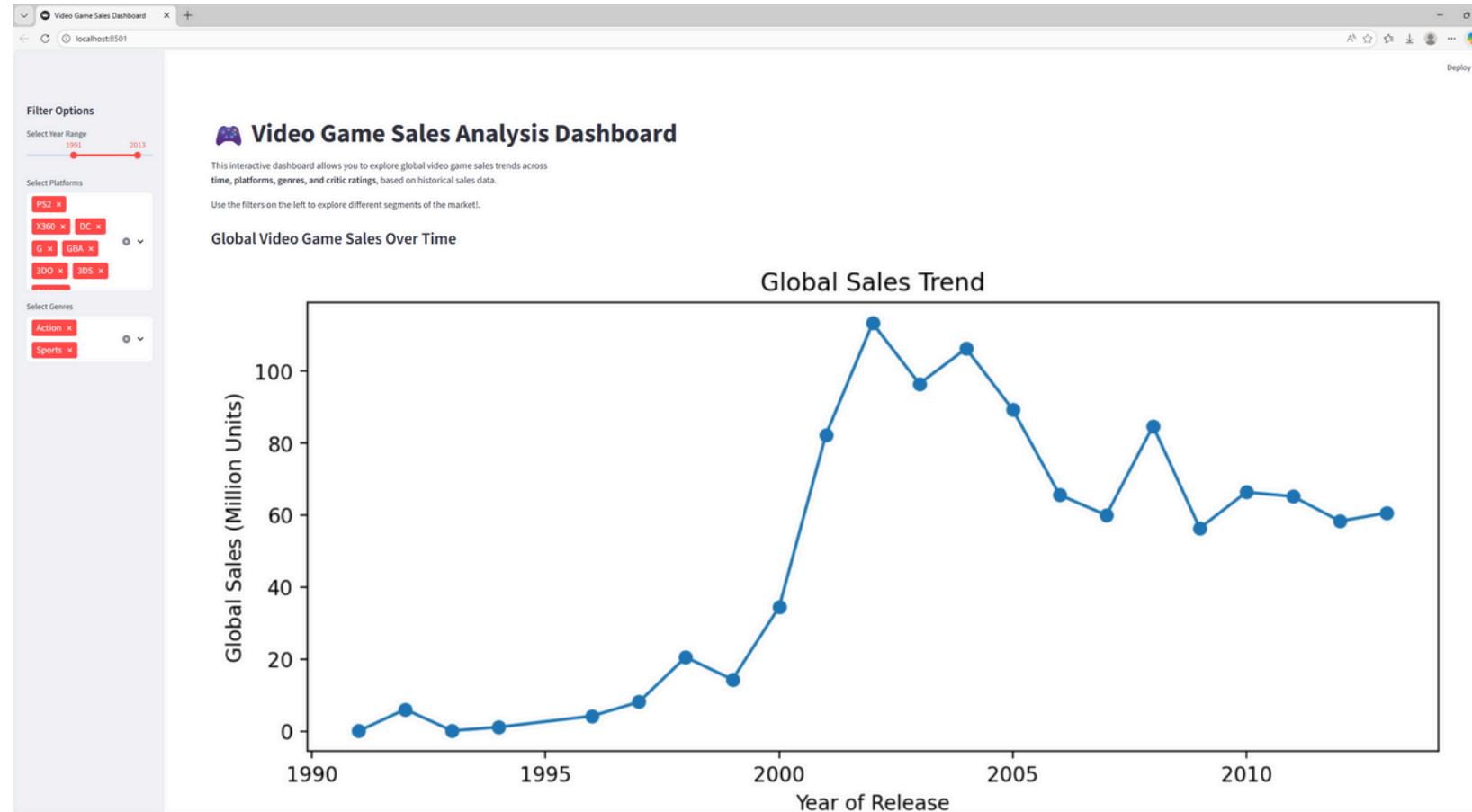
## **Key Takeaways**

- Global video game sales exhibit clear life cycles driven by platform generations and market maturity.
- Sales are concentrated in a small number of platforms, genres, and publishers, indicating a highly competitive and hit-driven industry.
- Regional markets differ significantly, with North America and Europe driving global sales while Japan shows distinct preferences.

## **Limitations**

- The dataset covers sales up to 2017 and does not reflect recent industry shifts such as digital-only distribution and mobile gaming growth.
- Some games lack complete review data, which may limit the strength of perception-based analyses.

# Streamlit Dashboard screenshots



App deployed at -

# Project links

**Github Link - [https://github.com/LevNgx/video\\_game\\_sales\\_and\\_analysis\\_dashboard](https://github.com/LevNgx/video_game_sales_and_analysis_dashboard)**

**Live app- [https://github.com/LevNgx/video\\_game\\_sales\\_and\\_analysis\\_dashboard](https://github.com/LevNgx/video_game_sales_and_analysis_dashboard)**

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