

# Visual Exploration Exercise

## : Video Game Market Analysis Derived from Spotfire Visualization

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### 1. Visualization tool description

I used Spotfire as a visualization tool since the tool is very easy to use and the interface is convenient. In Spotfire, I could adopt many visualizing methods functions such as scatterplot, stacked bar chart, and line chart.

### 2. Dataset description

The source of the exercise is from Kaggle. It describes the video game sales information over time. It has 16720 rows and each row represents an information of a game title. The size of the dataset is about 1MB. It has 16 columns which are 'Name', 'Platform', 'Year of release', 'Genre', 'Publisher', 'North America sales', 'European Union sales', 'Japan sales', 'Other nations sales', 'Global sales', 'Critic score', 'Critic count', 'User score', 'User count', 'Developer', 'Rating'. In the dataset, 'Rating' refers to audience class enable to watch. From the source, I tried to find some meaningful insights when preparing for publishing new games. The user candidate of this analysis is those who are about to enter video game market (novice entrepreneurs) and are developing new games now.

Video\_Games\_Sales\_as\_at\_22\_Dec\_2016

Name	Platform	Year_of_Relea...	Genre	Publisher	NA_Sales	EU_Sales	JP_Sales	Other_Sales	Global_Sales	Critic_Score	Critic_Count	User_Score	User_Count	Developer	Rating
Wii Sports	Wii	2006	Sports	Nintendo	41.36	28.96	3.77	8.45	82.53	76	51	8.00	322	Nintendo	E
Super Mario B...	NES	1985	Platform	Nintendo	29.08	3.58	6.81	0.77	40.24						
Mario Kart Wii	Wii	2008	Racing	Nintendo	15.68	12.76	3.79	3.29	35.52	82	73	8.30	709	Nintendo	E
Wii Sports Res...	Wii	2009	Sports	Nintendo	15.61	10.93	3.28	2.95	32.77	80	73	8.00	192	Nintendo	E
Pokemon Red...	GB	1996	Role-Playing	Nintendo	11.27	8.89	10.22	1.00	31.37						
Tetris	GB	1989	Puzzle	Nintendo	23.20	2.26	4.22	0.58	30.26						
New Super M...	DS	2006	Platform	Nintendo	11.28	9.14	6.50	2.88	29.80	89	65	8.50	431	Nintendo	E
Wii Play	Wii	2006	Misc	Nintendo	13.96	9.18	2.93	2.84	28.92	58	41	6.60	129	Nintendo	E
New Super M...	Wii	2009	Platform	Nintendo	14.44	6.94	4.70	2.24	28.32	87	80	8.40	594	Nintendo	E

Figure 1. Raw dataset table with 16 columns

### 3. Informative displays & interesting findings

By filtering few columns and visualizing them, I could get several findings which could be valuable when analyzing video game market. The insights are followed: First, bestseller video games are coherently the ones which get good reviews from both critics and audience. Also, the opinion of critics and those from users are not very different when reviewing bestsellers. In other words, good games offer satisfying entertainment experience for almost everyone (larger audience). On Figure 2, the dots represent game titles and colored ones are bestseller pieces. What we can find from the plot is that all the popular titles have user score higher than 5 (half) and critic score higher than 50 (half). In addition, one more interesting feature of them is that their user score and critic score is almost similar (diagonal shape).

Critic's Score, User's Score and Sales

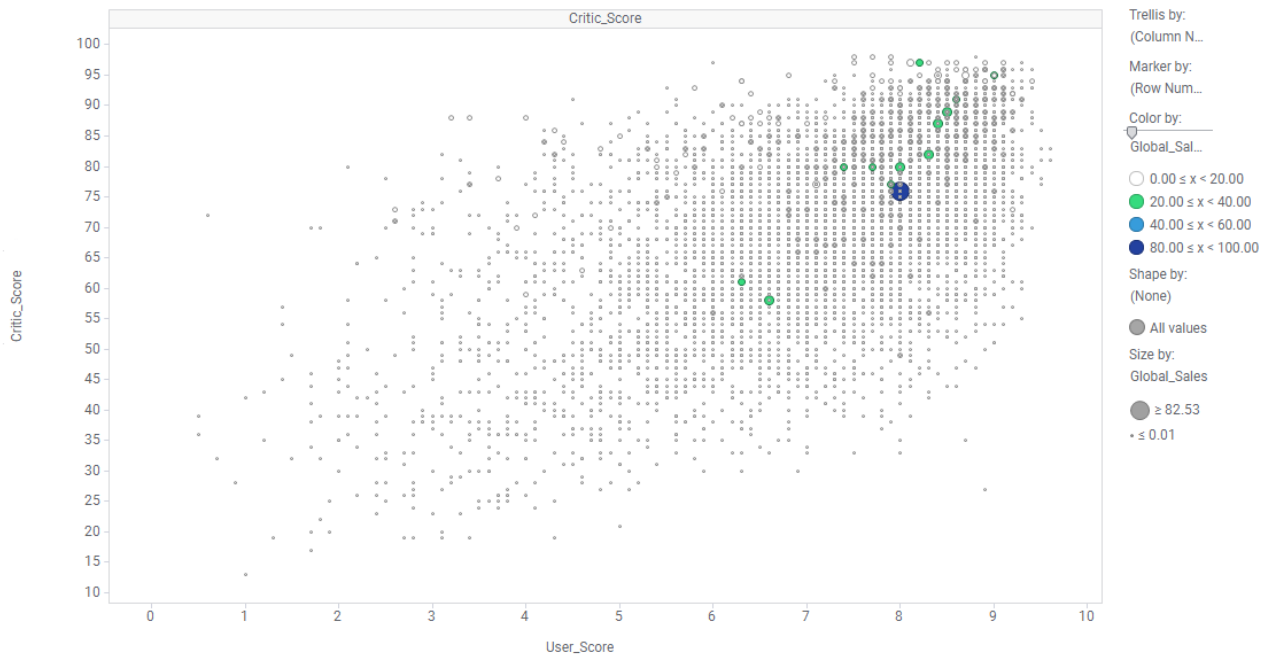


Figure 2. User-critic score distribution of the video game titles (color & shape highlight bestsellers)

Second, Japanese video game market does not get much impact from world trend, but the size of the North American market is very fluctuating otherwise. We can find which market outputs stable turnover by visualizing the market sales of several big markets in the world. Although global video game market got expanded from 2005 to 2010, market size of Japan has not been changed a lot since 1995. However, market size of North America in 2009 is about 6 times bigger than 1996. As time goes by, it shrinks to less than half in 2015.

Overall Game Sales

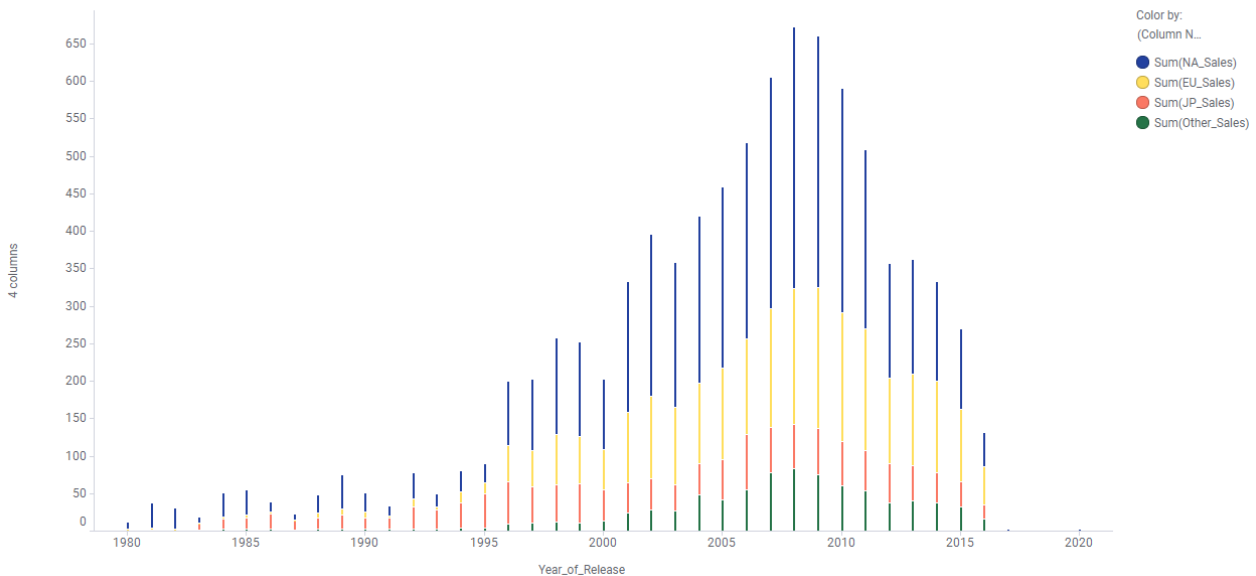


Figure 3. Big market sales transition over time

Third, EA games and Nintendo are two big giants in the video game market. But between the two, Nintendo gets more sales with less amount of pieces and overwhelms the performance of Electric Arts. Nintendo is a top player in the scene.

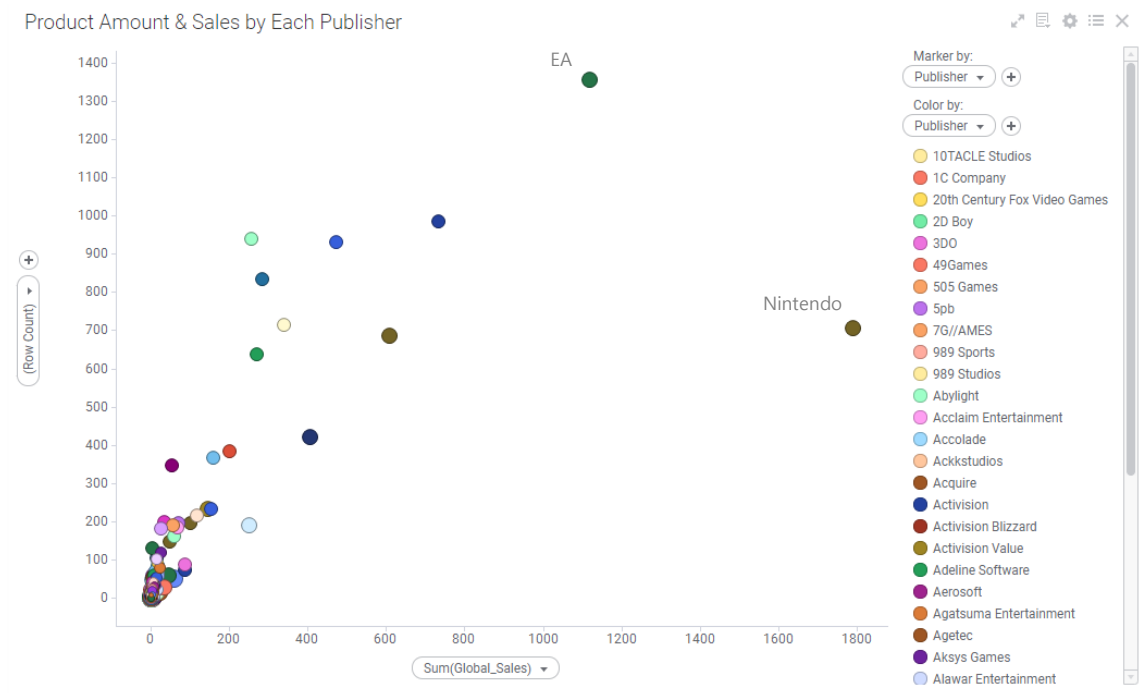


Figure 4. Product amount and sales by each publisher in the global market

Fourth, investing on action video game would rarely disappoint you. Action is the biggest genre in video market, and it is also the hottest genre which earns the most. Sports and shooter genres follow. Racing is a relatively small genre field, but racing games get good reviews than fields with similar size.

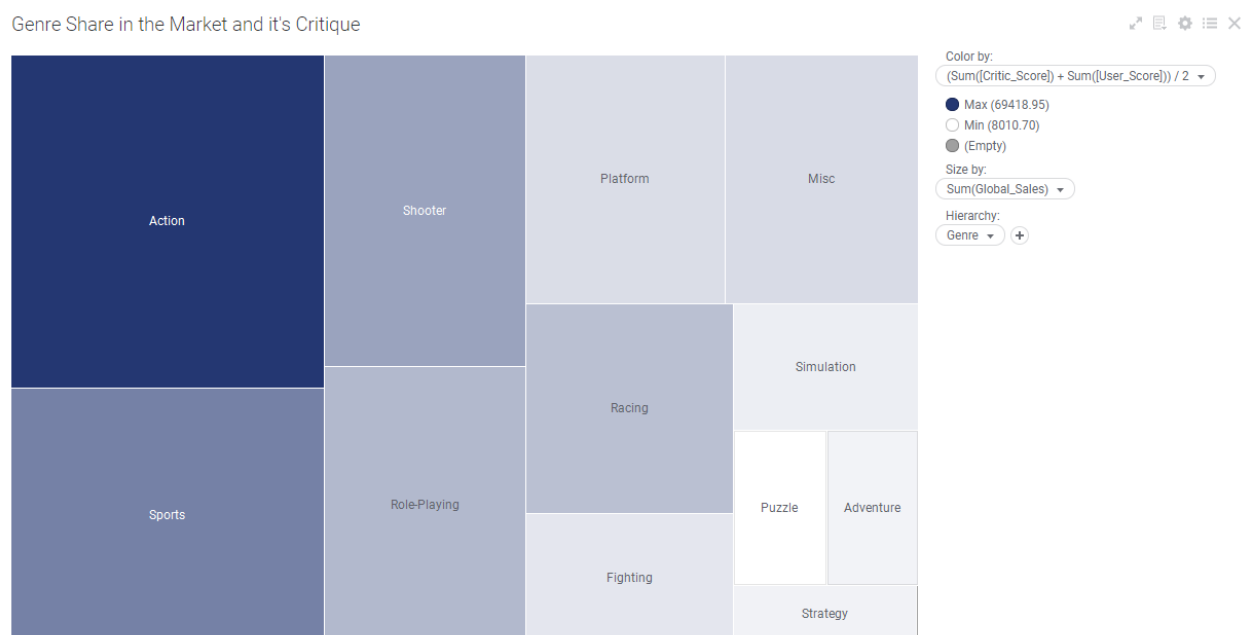


Figure 5. Genre share in the market and its review score

#### **4. How the visualization tool helped you make such finds and its critique**

In case of Spotfire, I got helped from the tool in various ways. First, it recommends me appropriate visualization methods for given columns I want to see. Since I am not accustomed to visualizing data, I did not have any insight on what method is good for specific data. With the help of the tool, I could choose suitable plotting method.

Second, I could exploit meaningful insight from the dataset. I am not a big fan of video game and I have shallow knowledge on the market. However, the tool helped me to find which genre is popular, which companies are giants, which makes the titles hot, and which market is stable.

As a critique, I would like to suggest the tool to have more flexibility on choosing plotting method. To meticulously control the data, I should write a formula, but it was not easy and intuitive. If controlling what to display gets easier and visible, it will encourage users to have more creative trials on visualization.