Recommendations for Microsoft's New Movie Studio

Project for Flatiron's Data Science Bootcamp
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Overview

Microsoft is launching a new movie studio, and the company's executives asked us to analyze movie industry data to help them decide what sort of movies they should put their resources into developing.

Our analysis focuses on high-level recommendations regarding genres and budgets.

Preview of Results

Based on popularity, enthusiasm, profitability, and annual trends, Microsoft should focus most on developing movies in the following genres:

- Action
- Adventure
- Fantasy
- Comedy

To achieve the highest likely returns on investment, the studio should expect to spend between $100 and $200 million per film.

Sources Used

We used data from:

- The Internet Movie Database (IMDB)
- The Movie Database (TMDB)
- Box Office Mojo

We filtered genre data to only include US movies. Financial data considers both US and international markets.

# Insights

Popular Genres

We looked at individual films in TMDB and grouped them by genre. As the next visualization shows, we found that the top seven popular genres are:

1. Adventure
2. Science Fiction
3. War
4. Fantasy
5. Action
6. Animation
7. Family

How is popularity measured?

Popularity is a proprietary TMDB metric. According to its website, it entails:

- Number of votes for the day
- Number of views for the day
- Number of users who marked it as a "favourite" for the day
- Number of users who added it to their "watchlist" for the day
- Release date
- Number of total votes
- Previous days score

Popularity per Genre
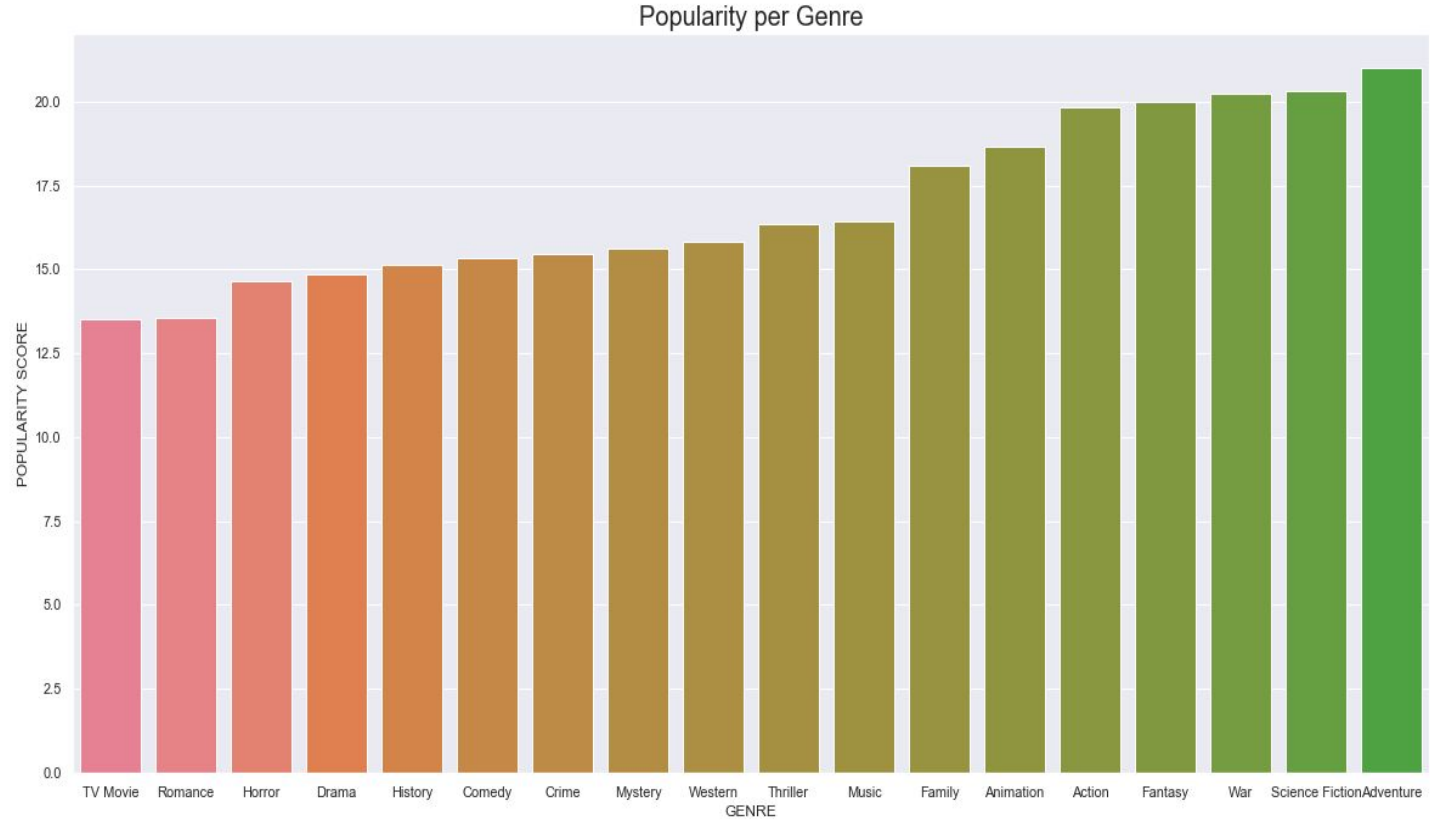
Genres with Enthusiastic Fans

We used individual film data in IMDB to find genres with the most enthusiastic fans. As the next visualization shows, we found that these top seven genres are:

1. Adventure
2. Action
3. Comedy
4. Crime
5. Biography
6. Horror
7. Romance

How is enthusiasm measured?

Enthusiasm is a metric engineered for this report. It plots the number of user-submitted votes for films in a genre against the total number films made in that genre.

So even if the votes aren't necessary positive for a particular film, users are more inclined to cast votes for films in these genres. In other words, these genres have enthusiastic fans.

Enthusiasm per Genre
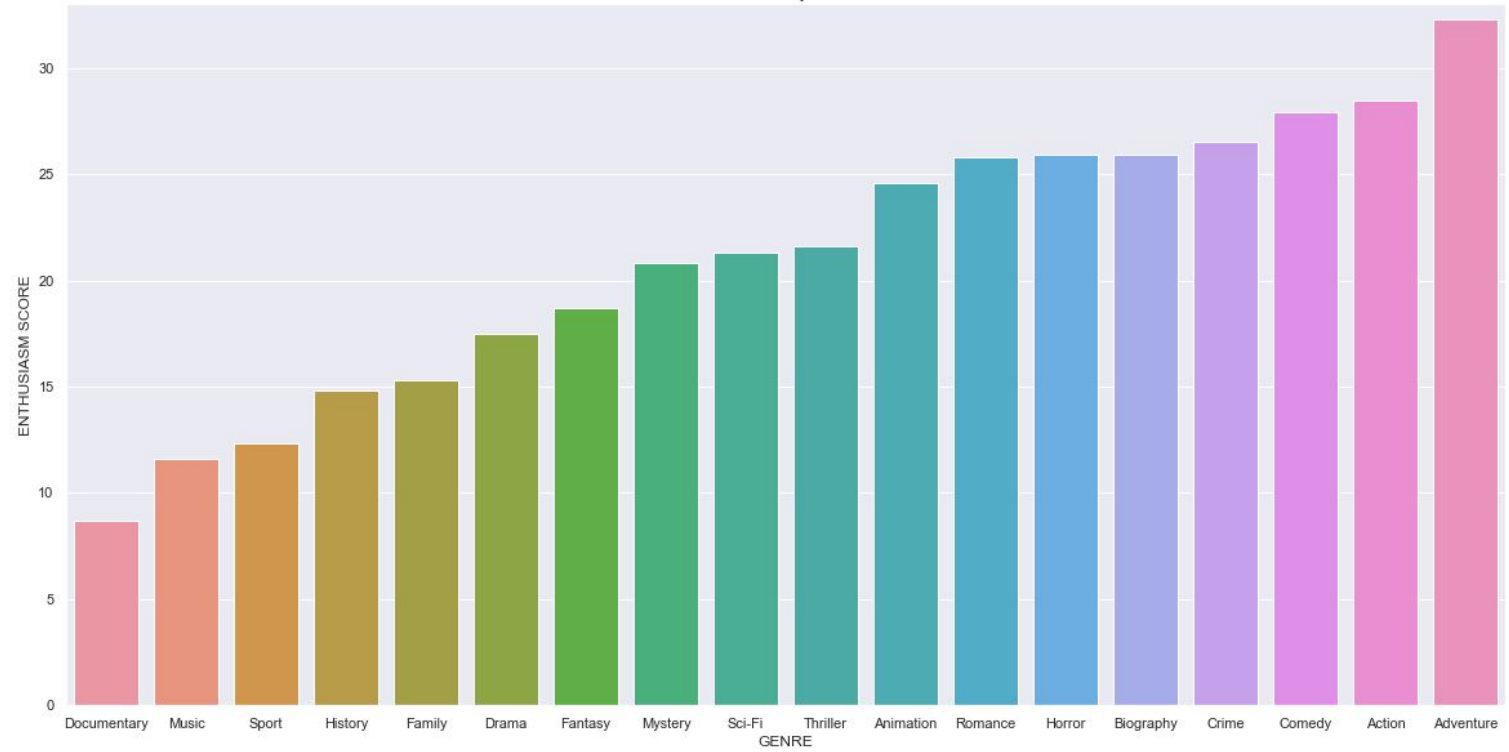
Annual Trends in Movie Genres

We looked at the total quantity of movies made per year from 2010 - 2019 (the years provided by IMDB) and checked them against the quantities of movies within a genre that were made per year. That way, we determined the percentage of films in each genre made per year and can see overall trends of what genres are in favor (or in disfavor) in the industry.

While the data found fluctuations in genre percentages from year to year, Microsoft should focus on genres with overall rising trend lines and avoid genres with falling ones. (See following chart.)
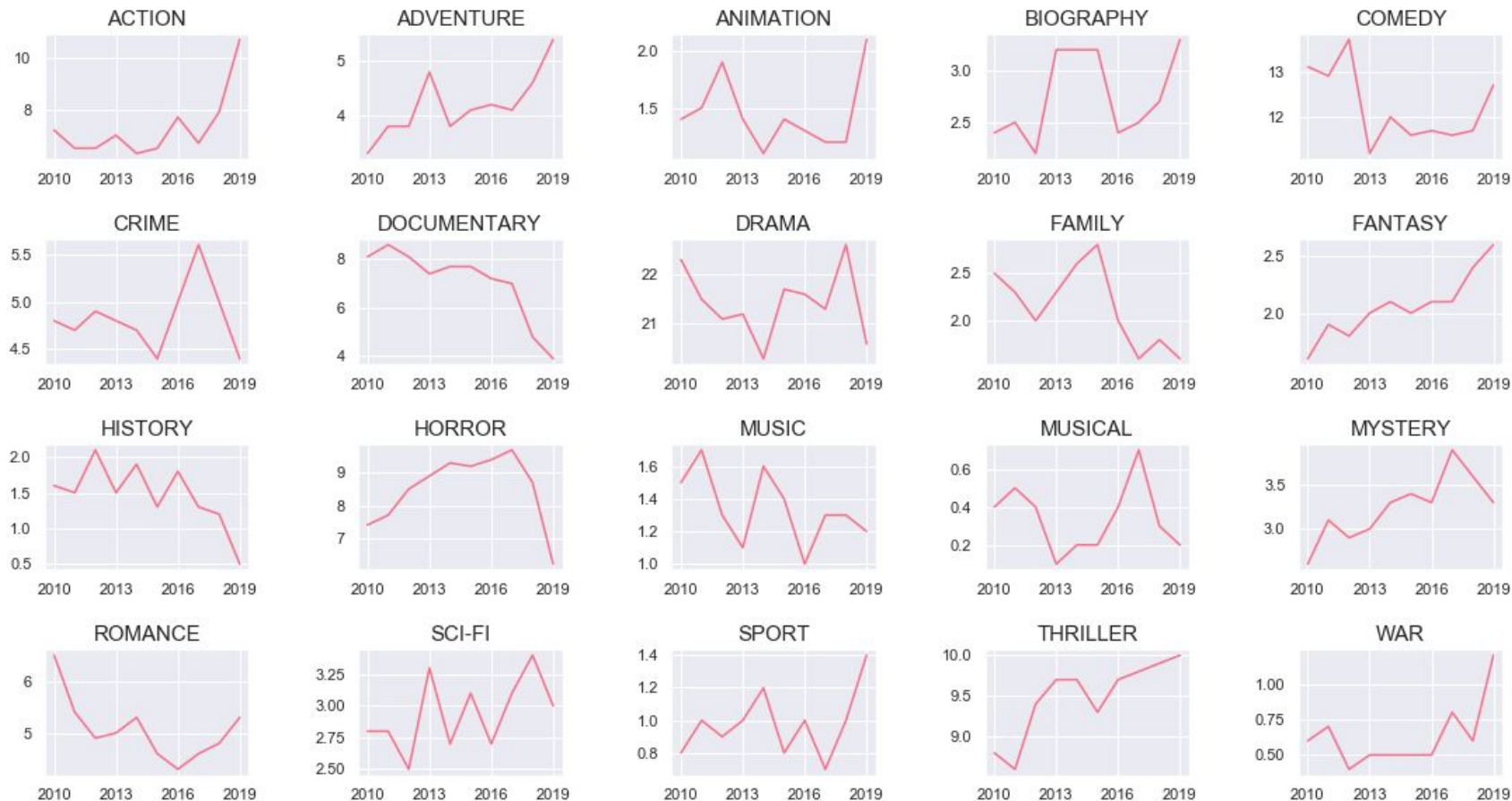
Genres with rising trends:

- Action
- Adventure
- Fantasy
- Thriller
- War

Genres with falling trends:

- Documentary
- Family
- History
- Horror
- Musical

PERCENT OF GENRE MOVIES MADE PER YEAR

# Genres with the Highest Vote Averages

IMDB users are allowed to award up to 10 stars to any film. We consolidated each film's vote score in all the genres to find which genres earned the most stars on average.

The top five genres with the highest number of stars on average are:

1. Music
2. History
3. War
4. Animation
5. Drama

How should Microsoft use these averages?

The top three high-voted genres--Music, History, and War--often do poorly in other metrics and trends. Microsoft should use the following visualization to get ideas of which genres to focus on to gain a reputation with critics and discerning filmgoers. But the company should be aware that these top-ranked genres might not have a broad appeal with the public at large.

Vote Averages per Genre
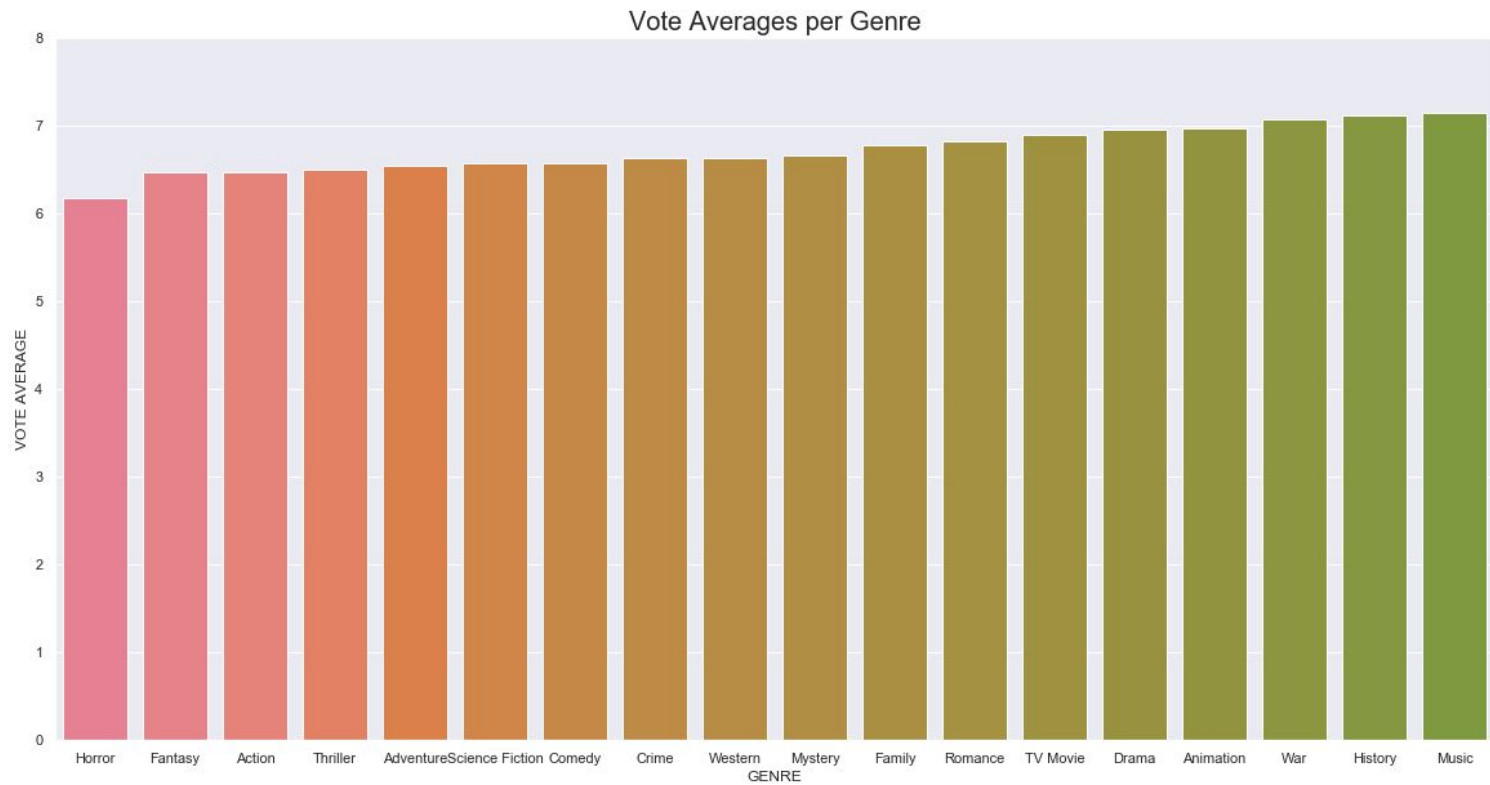
Production Budgets and Profitability

We used Box Office Mojo's financial data to discover the correlation between movies' production budgets and their profitability.

The general trend suggests that the higher the production budget, the higher the profitability. However, movies with a production budget between 100 million and 200 million tend to have the highest profitability.

How did we measure profitability?

Profitability is a metric engineered for this report. We added the domestic and foreign grosses for each movie and then subtracted the production budget from the sum.

The following page contains a distplot showing the relationship between profitability and production budgets.

Production Budget VS Profitability
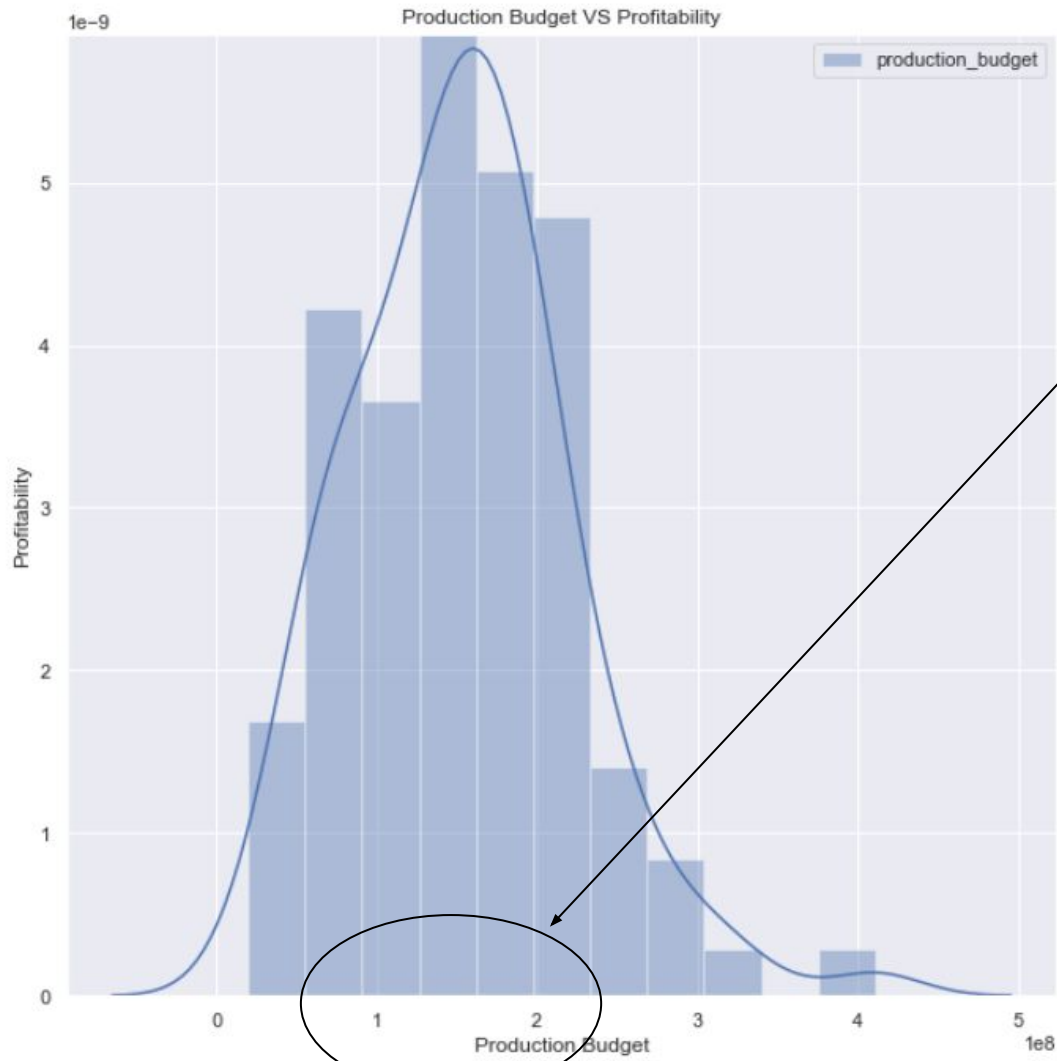
Here you can see the "sweet spot" where movies are most profitable.

Genre Profitability

Films in certain genres are more likely to offer a better return on investment than films in other genres. From our analysis of ten years' worth of data, we found films in the following genres have typically been the most profitable:

- Adventure
- Action
- Comedy
- Science Fiction
- Drama
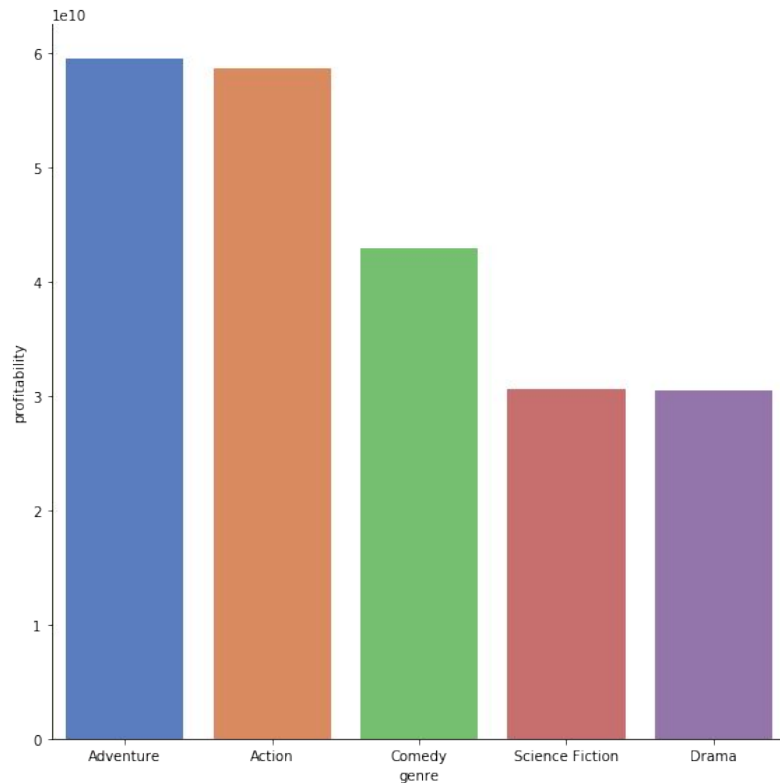
Most Profitable Movie Studios

As Microsoft launches its movie studio, it needs to know its competition.

The chart to the right shows the top ten most profitable movie studios along with their gross revenue in both domestic and foreign markets over the last ten years. Microsoft's top five competitors will be:

1. Buena Vista (Disney)
2. Fox
3. WB
4. Universal
5. Sony
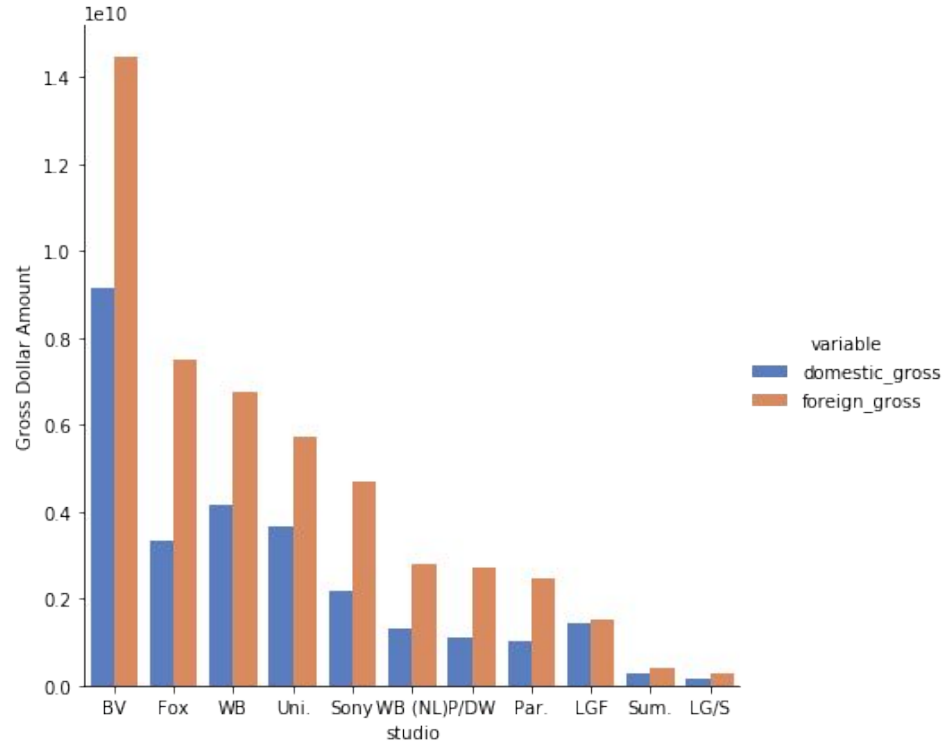
Next Steps
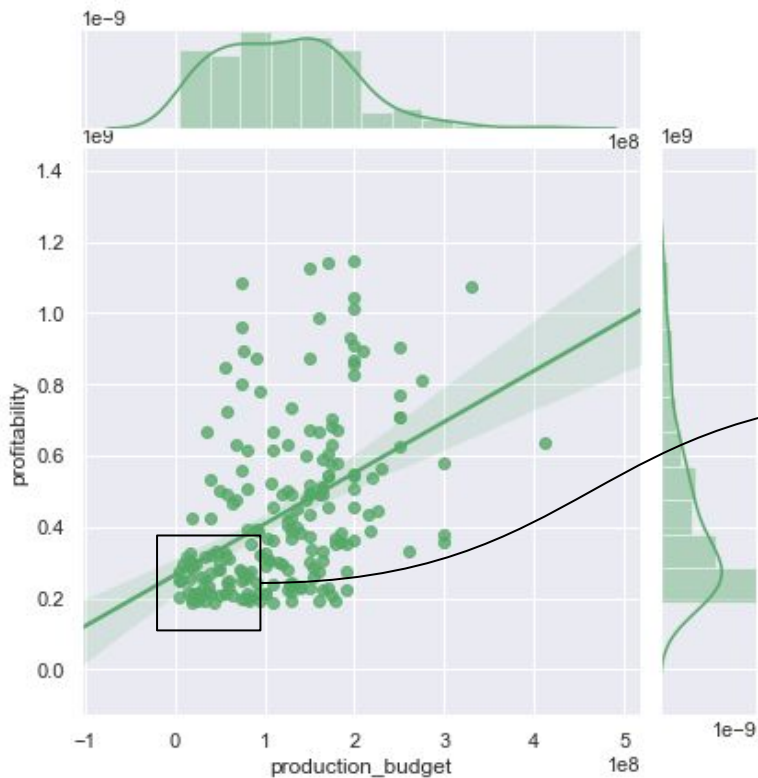
We would like to further investigate this lower portion of the production budget-profitability distribution.

This area plots movies that made more than $200 million in profit with production budgets of less than $50 million. Once we connect these data points to their respective genres, we can suggest which genres are typically the most profitable at low budgets.

Conclusions

Launching a movie studio is a complex endeavor that requires numerous decisions. Microsoft could choose to develop summer popcorn fare and holiday crowd-pleasers, or instead it could focus on cultivating a discerning audience and winning Oscars.

Microsoft's business strategy is, naturally, for the company management to decide. Using our research and this report, Microsoft executives have hopefully developed an understanding of genre trends, financial considerations, and its competition as it launches its new movie studio.

See you at the movies!