INTRODUCTION

IMBD Movie Analysis.

This case study is to analyze series of movies, generate insights for business-driven decision making.

PROCESS

The following processes were followed to prepare this case study:

➢ The raw excel dataset was wrangled using Python.

➢ SQL was used to model and analyze the data.

➢ Power BI was used to present Visualization for the purpose of insights generation for business-driven decision making.

IMBD Movie Analysis

Genres

[All ▾]

Director

[All ▾]

Average Popularity	Average vote	Total votes cast
0.65	5.98	2M

Number of Movies	Unique Genre	Unique Directors	Average Runtime
10.87K	2040	5067	102.07

revenue and budget
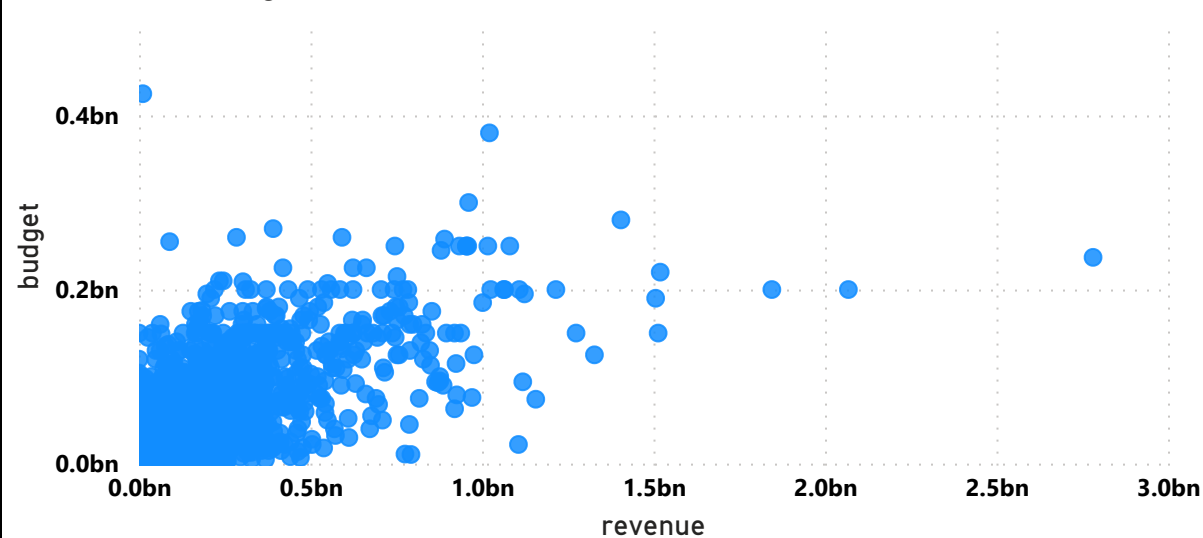
Sum of budget and Sum of revenue by release_year

● **Sum of budget**   ● **Sum of revenue**

Top Best Performing Movies

budget, revenue and profit
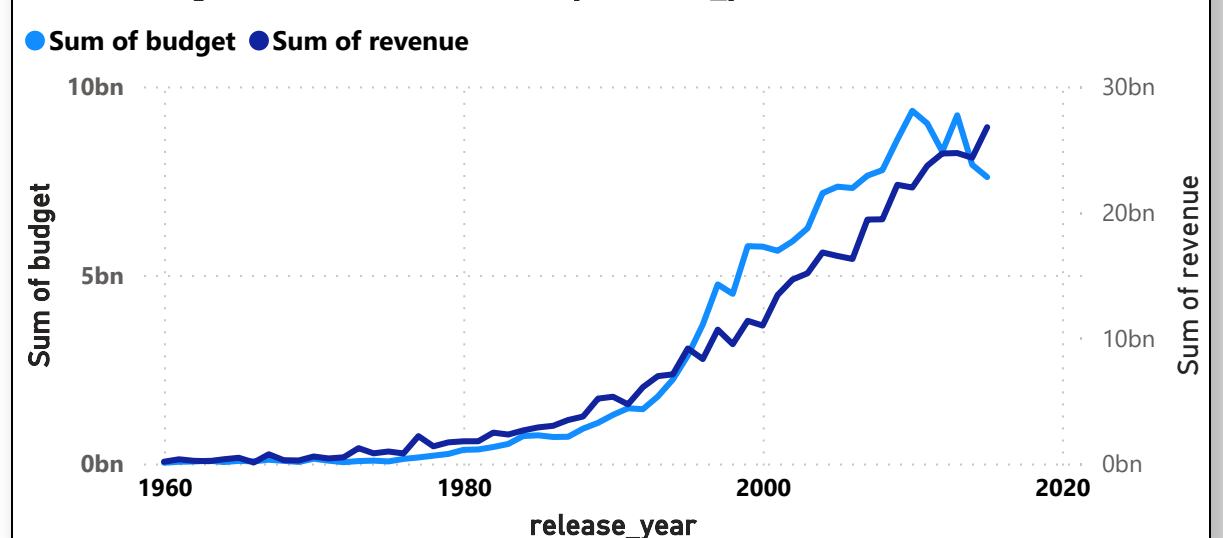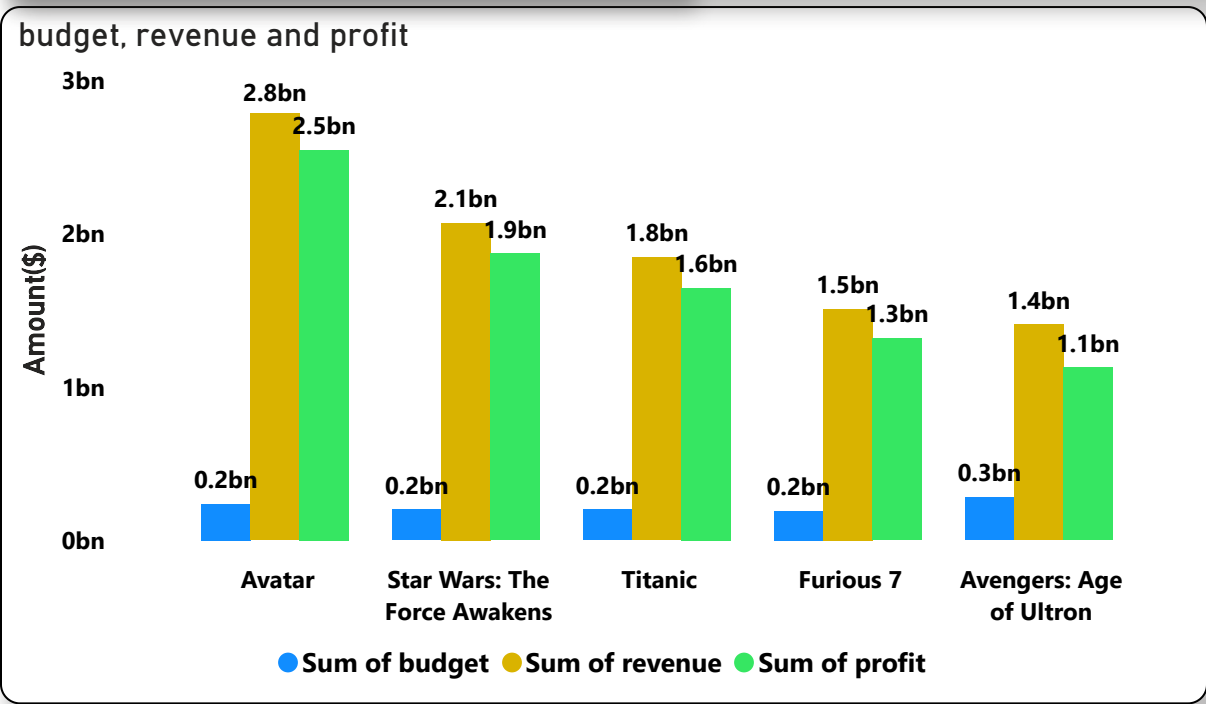
From the visualization, Avatar movie had the highest percentage of profit, followed by Star War and others with good percentage of profit.

The average vote across all best performing movies has been above 7. This means good reviews by users contributed to the success of these movies.

With close average votes, the genres may not be the most important, but the script, cinematography and technology used.

The month each movie is released does not really matter if the reviews are good as those performing well were released in different months of the year.

The production companies and directors must concentrate on customers' satisfaction that will result to high reviews of the movies. The higher the reviews the higher the acceptability which will in turn lead to high revenue.

original_title	release_date	Sum of profit	Sum of % of profit	genres	Sum of vote_average	production_companies
Avatar	October 2009	2,544,505,856.00	1073.63%	Action|Adventure|...	7.10	Ingenious Film Partn...
Star Wars: The For...	December 2015	1,868,178,176.00	934.09%	Action|Adventure|...	7.50	Lucasfilm|Truenorth ...
Titanic	November 1997	1,645,034,240.00	822.52%	Drama|Romance|T...	7.30	Paramount Pictures|T...
Furious 7	January 2015	1,316,249,344.00	692.76%	Action|Crime|Thriller	7.30	Universal Pictures|Ori...
Avengers: Age of ...	April 2015	1,125,035,776.00	401.80%	Action|Adventure|...	7.40	Marvel Studios|Prime...

Top Poor Performing Movies

budget, revenue and profit
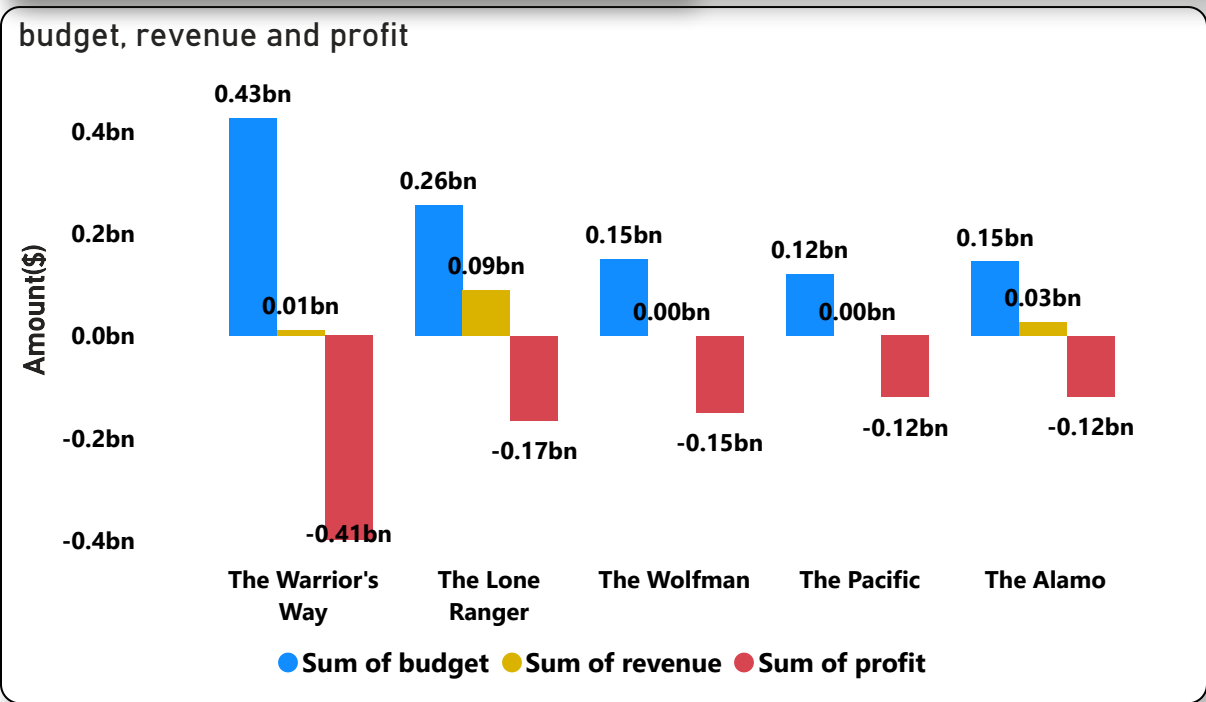
From the Visualization, none of the movies generated profit. All recorded losses. The warrior's way recorded highest loss with 96% loss. The movie only generated 4% of total cost. What could have happened?

From the data, the production companies actually invested heavily on the cost of production, checking the Average votes, they all have poor average votes except **the pacific** which has higher average vote of 7.8 but zero revenue. This is an outlier, though the data did not specify if 7.8 is negative reviews or positive reviews.

The other movies that recorded losses have poor reviews; this shows the reviews of the movies by audience have high impact in the success of the movies.

original_title	release_date	Sum of budget	Sum of revenue	loss	Sum of vote_av...	genres	production_compa...
The Warrior's W...	12 February 2010	425,000,000.00	11,087,569.00	-413,912,416.00	6.40	Adventure|Fant...	Boram Entertainm...
The Lone Ranger	7 March 2013	255,000,000.00	89,289,912.00	-165,710,096.00	6.00	Action|Adventu...	Walt Disney Pictur...
The Wolfman	2 November 2010	150,000,000.00	0.00	-150,000,000.00	5.40	Horror|Thriller|...	Universal Pictures|...
The Pacific	16 May 2010	120,000,000.00	0.00	-120,000,000.00	7.80	War|Drama|Acti...	Playtone|HBO|Dre...
The Alamo	4 July 2004	145,000,000.00	25,819,960.00	-119,180,040.00	5.90	Western|Histor...	Imagine Entertain...

Movies made over time

Movies made per year
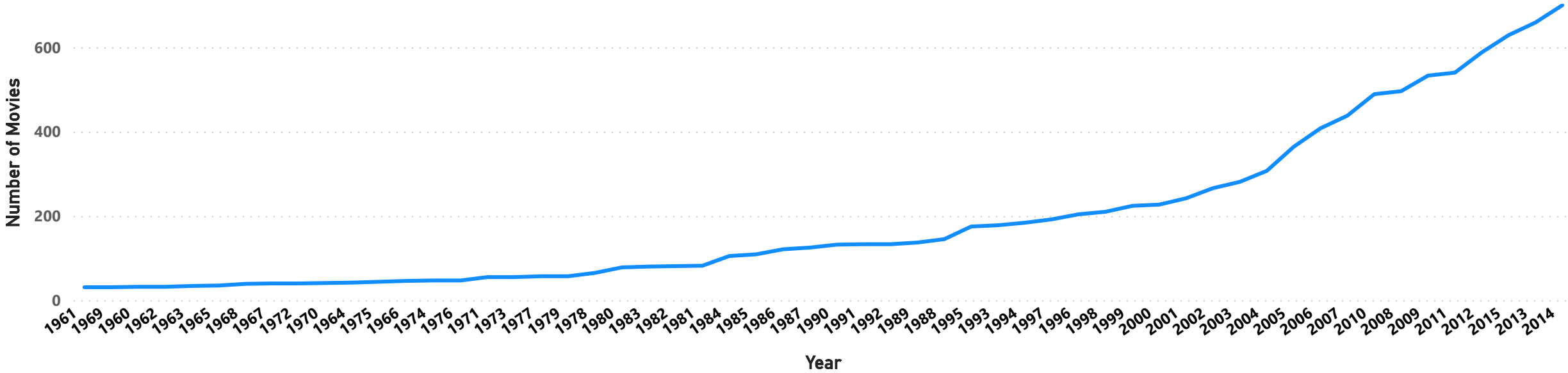
Sum of budget, Sum of revenue and Sum of profit by release_year
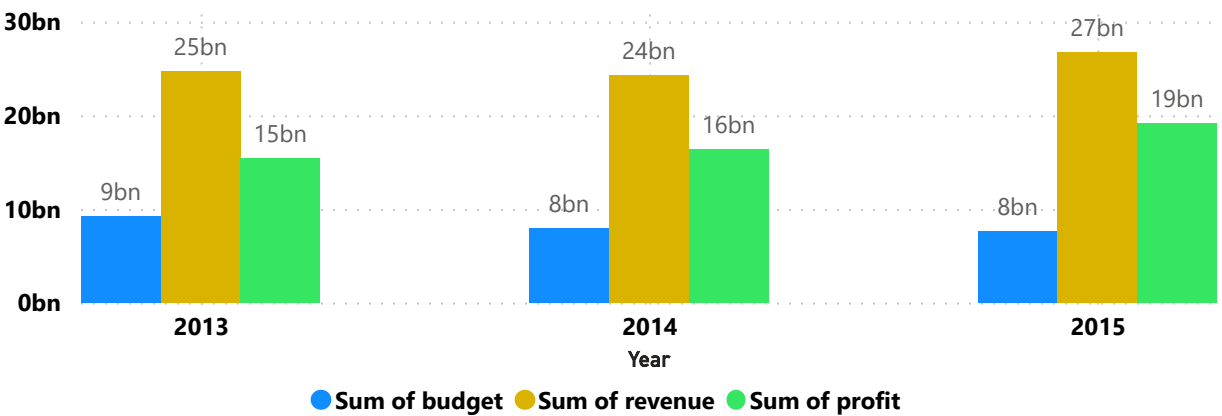
The year with highest movies released was 2014 with 700 movies, followed by 2013 and 2015 with 659 and 629 movies respectively.

2014 alone accounted for 6.44% of movies produced from 1961, this shows there was massive investment in the movie industry which signifies progress. The lowest movies produced was 31 in 1961.

From the graph at the left hand side, it shows not by high volume of movies released that lead to high profit, it is about quality of movies and reviews. 2015 has lowest movies released when compared with 2014 and 2013 but has high revenue and profit of 237.5% followed by 2014 200% while 2013 with highest movies has lowest revenue and profit of 166.67%

Movies made per month

Movies made per month

Number of movies made (y-axis) vs Month (x-axis):
- January: 1245
- September: 1055
- October: 1033
- December: 994
- July: 903
- August: 891
- May: 864
- June: 854
- November: 844
- March: 777
- April: 765
- February: 640

budget, revenue and profit

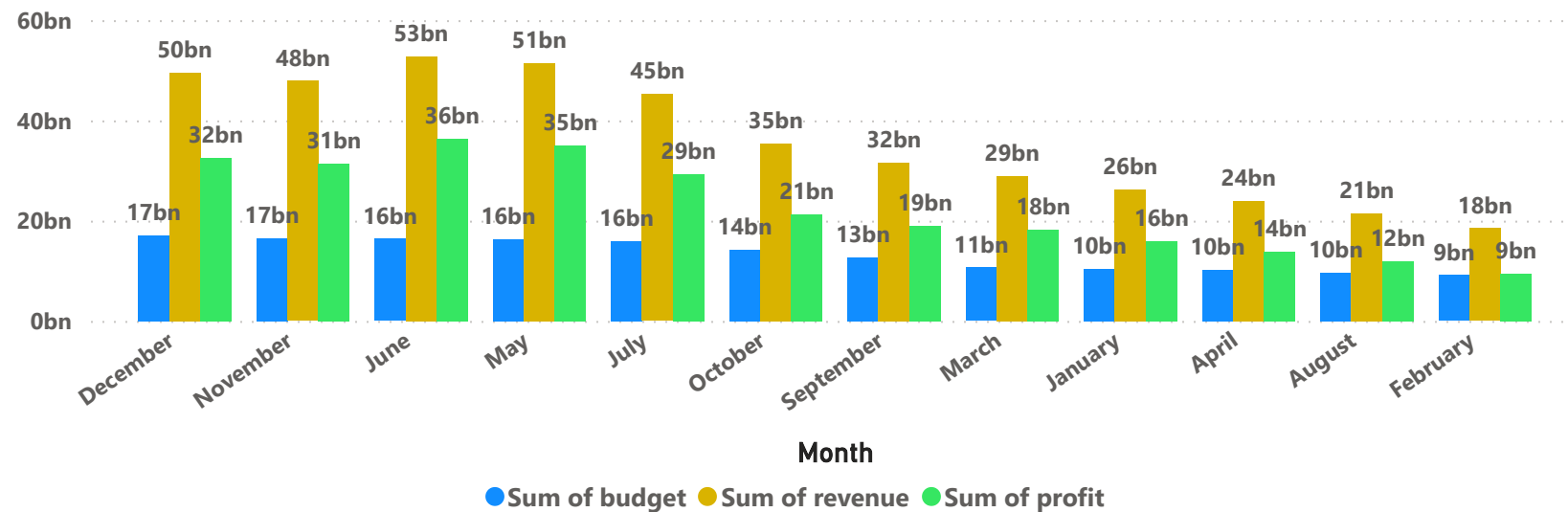| Month	Sum of budget	Sum of revenue	Sum of profit
December	17bn	50bn	32bn
November	17bn	48bn	31bn
June	16bn	53bn	36bn
May	16bn	51bn	35bn
July	16bn	45bn	29bn
October	14bn	35bn	21bn
September	13bn	32bn	19bn
March	11bn	29bn	18bn
January	10bn	26bn	16bn
April	10bn	24bn	14bn
August	10bn	21bn	12bn
February	9bn	18bn	9bn

● Sum of budget ● Sum of revenue ● Sum of profit

From the movies made per month graph, January has the highest number of movies produced, but checking their performance based on budget, revenue and profit made, June and May have the highest with 220% and 218 % profit respectively. The next higher profitable months are December and November while January with highest number of movies produced generated 160% profit.

This shows it is not about the quantity but quality of movies that meet customers' expectations which will lead to high positive reviews

Revenue vs Budget

Revenue vs Budget
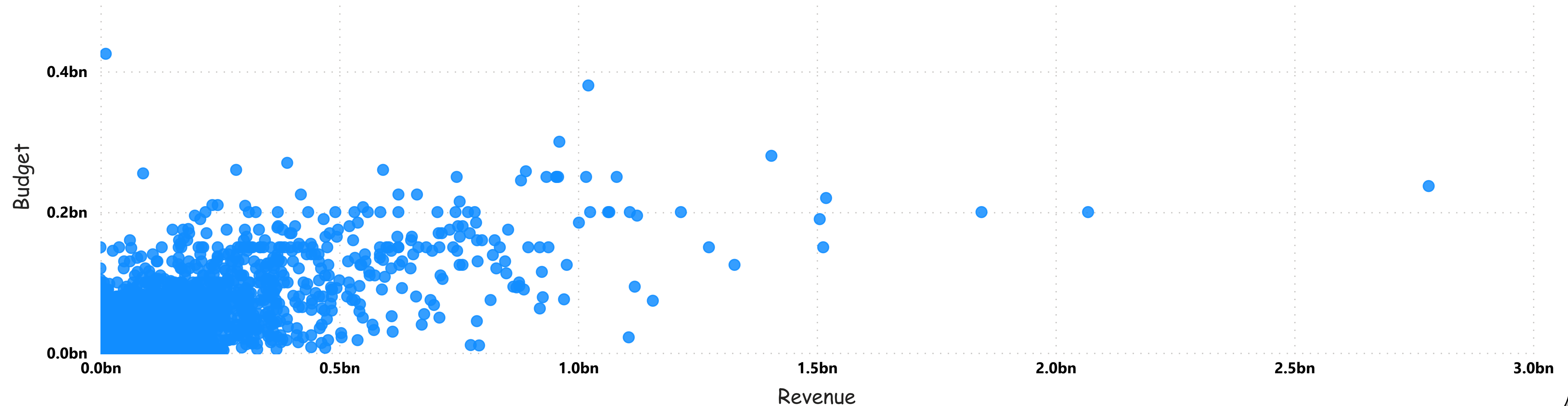
Given the relationship noticed from the chart above, the features, revenue and budget can be said to be highly correlated.

That is to say that if high budget is allocated for the production of a movie, it can lead to production of high quality movies which will in turn lead to good reviews

Top 10 Genres

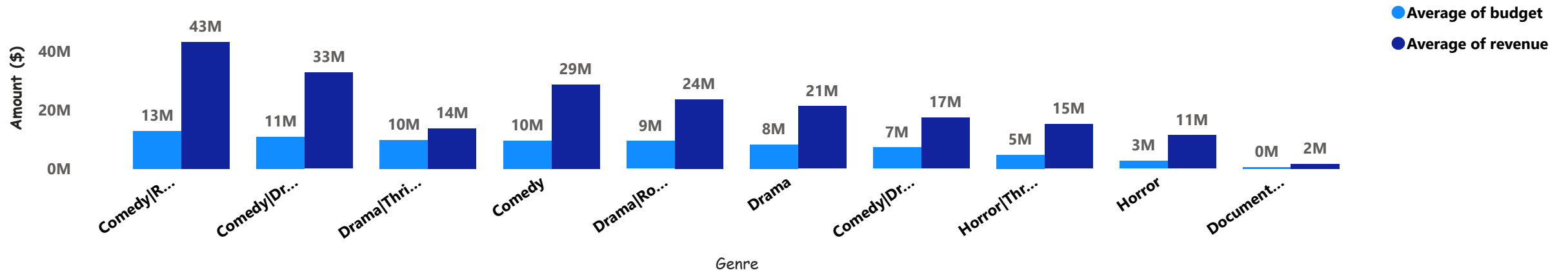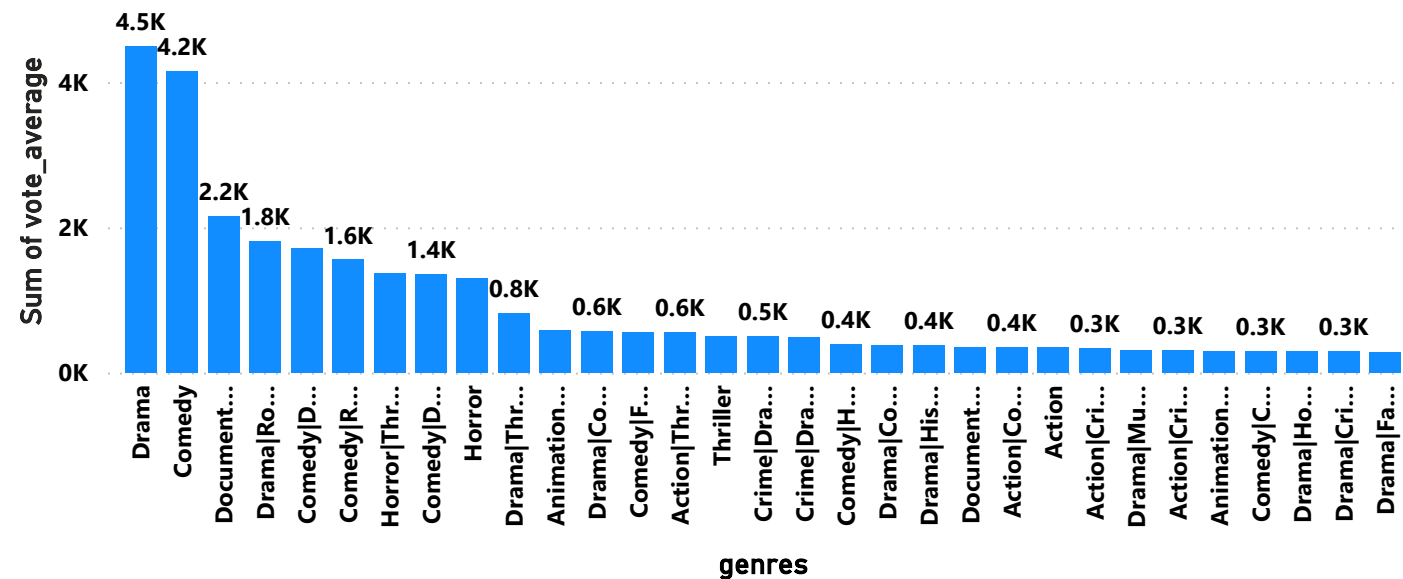## Top performing Genres

Legend:
- ● Average of budget
- ● Average of revenue

Y-axis: Amount ($) — 0M, 20M, 40M
X-axis: Genre

Values (budget / revenue):
- Comedy|R...: 13M / 43M
- Comedy|Dr...: 11M / 33M
- Drama|Thri...: 10M / 14M
- Comedy: 10M / 29M
- Drama|Ro...: 9M / 24M
- Drama: 8M / 21M
- Comedy|Dr...: 7M / 17M
- Horror|Thr...: 5M / 15M
- Horror: 3M / 11M
- Document...: 0M / 2M

Sum of vote_average by genres

Y-axis: Sum of vote_average — 0K, 2K, 4K
X-axis: genres

Values: Drama 4.5K, Comedy 4.2K, Document... 2.2K, Drama|Ro... 1.8K, Comedy|D... 1.6K, Comedy|R... (1.6K), Horror|Thr... 1.4K, Comedy|D... (1.4K), Horror, Drama|Thr... 0.8K, Animation..., Drama|Co... 0.6K, Comedy|F... 0.6K, Action|Thr..., Thriller 0.5K, Crime|Dra..., Crime|Dra..., Comedy|H... 0.4K, Drama|Co..., Drama|His... 0.4K, Document..., Action|Co... 0.4K, Action, Action|Cri... 0.3K, Drama|Mu..., Action|Cri... 0.3K, Animation..., Comedy|C... 0.3K, Drama|Ho..., Drama|Cri... 0.3K, Drama|Fa...
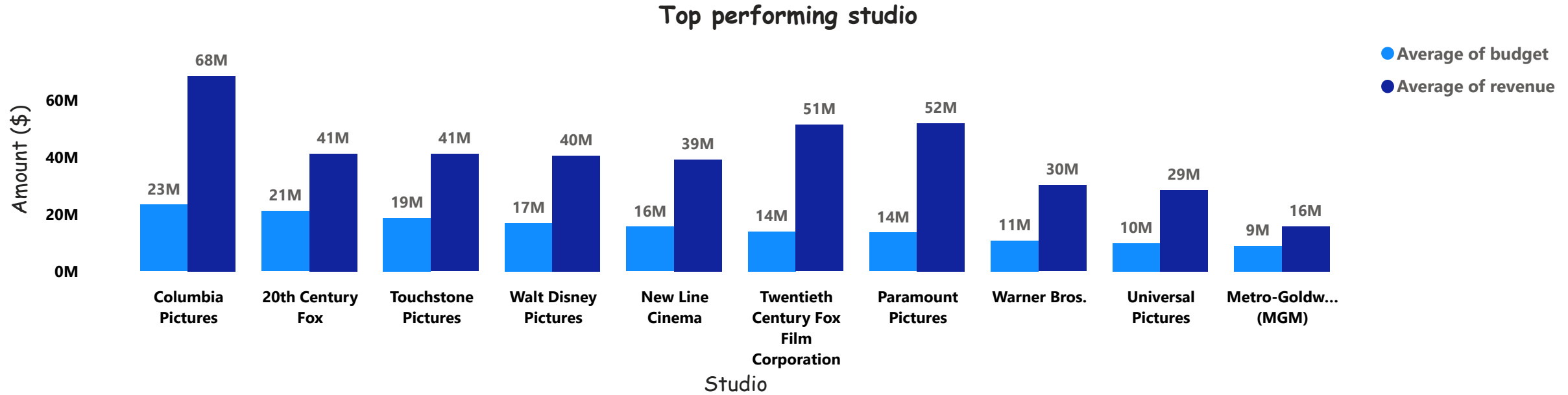
Based on Budget and revenue generated, Horror recorded the highest profit with 266.7%, followed by Comedy with 230.8%. This shows not only high cost makes movie profitable, though good high budget leads to high quality movies. The most critical is the review.

From left hand side, this shows the accumulation of the average votes. The combination of drama and comedy have the highest average votes.

This data does not show the average votes either bad or good reviews

Top 10 Studio

Top performing studio

Legend:
- Average of budget
- Average of revenue

Data (Studio — Average of budget / Average of revenue):
- Columbia Pictures — 23M / 68M
- 20th Century Fox — 21M / 41M
- Touchstone Pictures — 19M / 41M
- Walt Disney Pictures — 17M / 40M
- New Line Cinema — 16M / 39M
- Twentieth Century Fox Film Corporation — 14M / 51M
- Paramount Pictures — 14M / 52M
- Warner Bros. — 11M / 30M
- Universal Pictures — 10M / 29M
- Metro-Goldw... (MGM) — 9M / 16M

Y-axis: Amount ($) — 0M, 20M, 40M, 60M
X-axis: Studio

The top performing studio is paramount pictures which has profit of 271%, followed by columbia pictures which recorded profit of 195.6%.

Comparing Paramount pictures with low budget and columbia with high budget, for movie to be profitable, it does require high budget, but other parameters must be considered such as storylines, acting and cinematography. High budget on poor script will still earn poor reviews which will lead to failure

SUMMARY

- The movie reviews contribute to high rate of return. The higher the positive reviews by users the higher the revenue and also profit.
- Avatar, The Star Wars and Titanic had the highest profit.

- January had the highest number of movies released but June, May, December and November had the highest number of movies with high profit.

- The higher the budget, the higher the good quality of a movie.

The true insight from the data is that for a movie to be successful, the movie must be well-funded (high budget) and meet users' expectations (good users' reviews)

Users' reviews are dependent on the movie meeting user expectations on the storyline, directing, cinematography and acting.

RECOMMENDATIONS

From movies dataset analyzed, the following are recommended:

➢ The movie production house and producer must focus on ways to avoid negative reviews.

➢ The movies must be well funded for good quality which will lead to positive reviews and users' satisfaction.
➢ The movie producer must focus on good storylines, best cinematography, better directing and acting.

LIMITATIONS

- Incomplete data, rows without Id, budget and revenue but have other columns filled are the limitations to the dataset.
- No data to know how much invested in marketing strategy.