Microsoft Movie Analysis Project

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Summary

- This project analyzes the types of movies that are currently doing the best at the box office.

- The analysis aims at providing insights to Microsoft on the latest trends in the movie industry that will enable them to create movies with high rating, maximum revenue.

- Dataset from popular movie databases such as IMDB and Box Office Mojo were used for the analysis.

- The main objective is to find the trends in movie market by analyzing the average rating,number of votes and revenue generated for the movies releases from the year 2010.

Outline

- Business Problem
- Data
- Methods
- Results
- Conclusions

Business Problem

- To identify the latest trends in the movie industry

- To provide insights on the type of movies that will fetch maximum revenue

- To analyse the genres that gets highest ratings

Data

IMDb being the most popular source for movies and various related contents. We can find ratings and reviews for the newest movies and TV shows. The following datasets of IMDB were used in analysis:

1. **imdb.titles.basics data set** : IMDB Basics data set contains movie records from the year 2010 .Each movie is identified by an index "tconst".The other columns are primary_title,Original title,start_year,runtime minutes and genres.
2. **imdb.titles.ratings data set** : IMDB Ratings data set contains the average ratings and number of votes of each movie title.In this table too a movie/title is identified by the column "tconst".

Box Office Mojo is an American website that tracks box-office revenue generated by a movie domestically and internationally.

1. **Bom.movie_gross dataset** : This dataset has details of the domestic gross and foreign gross earned by each movie and the name of studio which produced the movie along with year in which it was released.

Methods

Below three datasets were merged and conclusions were drawn:

1. IMDB.Titles.Basics

2. IMDB.Titles.Ratings

3. BOM_Movie_gross

- Genres that are getting the highest votes/rating from public
- Genres that are making profit in domestic and international market
- The studios that are making highest revenue in domestic and international markets

Results

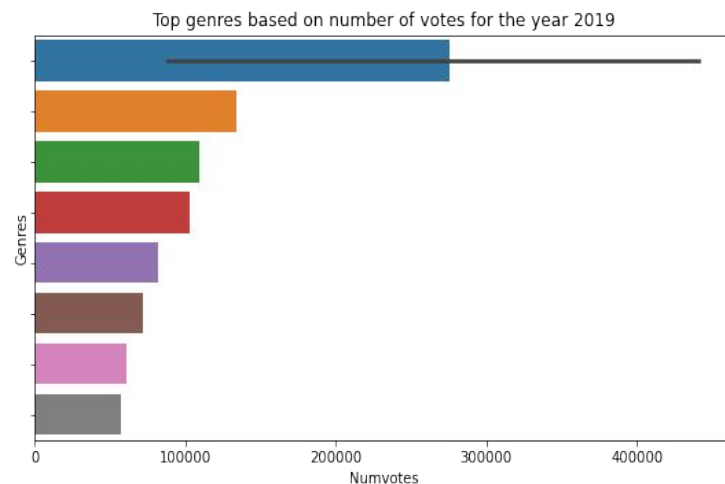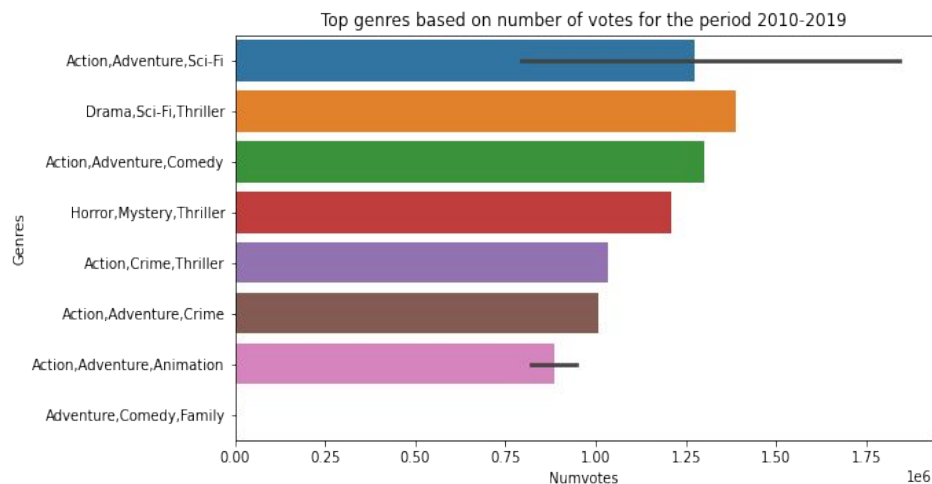1. Short,Documentary,Game-Show are the genres which got high ratings.

Average rating of genres
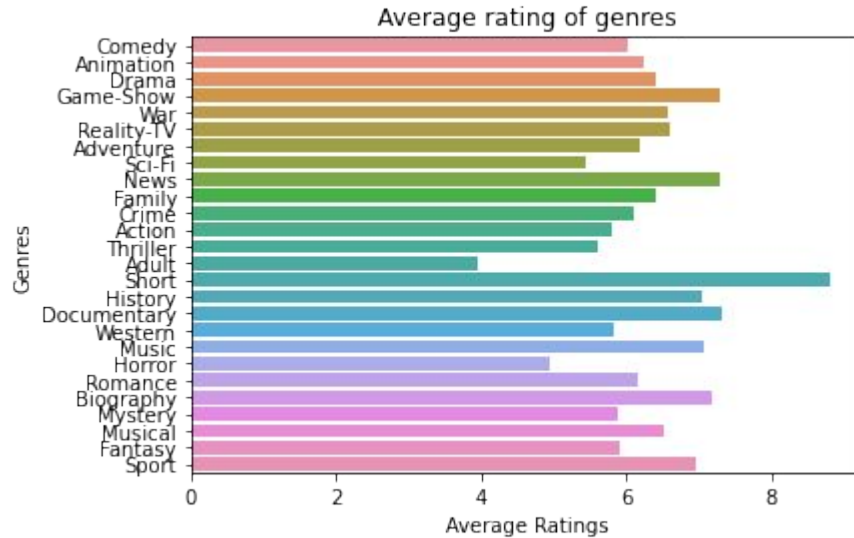
2.Sci-Fi,Adventure,Animation got the maximum gross revenue.

Genres based on Revenue
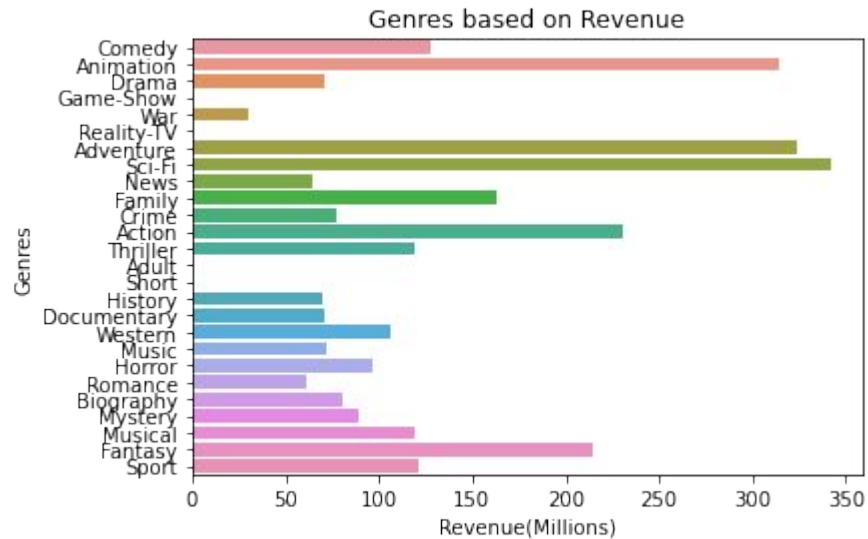
3. Analysis of the trends in top voted movies in the IMDB data Set showed that the top voted movies belonged to genres Action,Adventure,Sci-Fi.

Top 5 movies and genres based on number of votes for the period 2010-2019

Primary_Title	Start_Year	Genres	Numvotes
Inception	2010	Action,Adventure,Sci-Fi	1841066
Shutter Island	2010	Mystery,Thriller	1005960
Toy Story 3	2010	Adventure,Animation,Comedy	682218
Iron Man 2	2010	Action,Adventure,Sci-Fi	657690
Black Swan	2010	Drama,Thriller	648854

Primary_Title	Start_Year	Genres	Numvotes
Harry Potter and the Deathly Hallows: Part 2	2011	Adventure,Drama,Fantasy	691835
Thor	2011	Action,Adventure,Fantasy	683264
The Intouchables	2011	Biography,Comedy,Drama	677343
Captain America: The First Avenger	2011	Action,Adventure,Sci-Fi	668137
X-Men: First Class	2011	Action,Adventure,Sci-Fi	608930

Primary_Title	Start_Year	Genres	Numvotes
The Dark Knight Rises	2012	Action,Thriller	1387769
Django Unchained	2012	Drama,Western	1211405
The Avengers	2012	Action,Adventure,Sci-Fi	1183655
The Hunger Games	2012	Action,Adventure,Sci-Fi	795227
The Hobbit: An Unexpected Journey	2012	Adventure,Family,Fantasy	719629

Primary_Title	Start_Year	Genres	Numvotes
The Wolf of Wall Street	2013	Biography,Crime,Drama	1035358
Gravity	2013	Drama,Sci-Fi,Thriller	710018
Iron Man 3	2013	Action,Adventure,Sci-Fi	692794
Man of Steel	2013	Action,Adventure,Sci-Fi	647288
12 Years a Slave	2013	Biography,Drama,History	577301

Primary_Title	Start_Year	Genres	Numvotes
Interstellar	2014	Adventure,Drama,Sci-Fi	1299334
Guardians of the Galaxy	2014	Action,Adventure,Comedy	948394
Gone Girl	2014	Drama,Mystery,Thriller	761592
Captain America: The Winter Soldier	2014	Action,Adventure,Sci-Fi	666252
The Grand Budapest Hotel	2014	Adventure,Comedy,Crime	633604

Primary_Title	Start_Year	Genres	Numvotes
Star Wars: Episode VII - The Force Awakens	2015	Action,Adventure,Fantasy	784780
Mad Max: Fury Road	2015	Action,Adventure,Sci-Fi	780910
The Martian	2015	Adventure,Drama,Sci-Fi	680116
Avengers: Age of Ultron	2015	Action,Adventure,Sci-Fi	665594
The Revenant	2015	Action,Adventure,Biography	621193

Primary_Title	Start_Year	Genres	Numvotes
Deadpool	2016	Action,Adventure,Comedy	820847
Captain America: Civil War	2016	Action,Adventure,Sci-Fi	583507
Batman v Superman: Dawn of Justice	2016	Action,Adventure,Fantasy	576909
Suicide Squad	2016	Action,Adventure,Fantasy	533039
Arrival	2016	Drama,Mystery,Sci-Fi	515483

Primary_Title	Start_Year	Genres	Numvotes
Logan	2017	Action,Drama,Sci-Fi	560270
Wonder Woman	2017	Action,Adventure,Fantasy	487527
Thor: Ragnarok	2017	Action,Adventure,Comedy	482995
Guardians of the Galaxy Vol. 2	2017	Action,Adventure,Comedy	482917
Dunkirk	2017	Action,Drama,History	466580

Primary_Title	Start_Year	Genres	Numvotes
Avengers: Infinity War	2018	Action,Adventure,Sci-Fi	670926
Black Panther	2018	Action,Adventure,Sci-Fi	516148
Deadpool 2	2018	Action,Adventure,Comedy	391735
Bohemian Rhapsody	2018	Biography,Drama,Music	345466

Primary_Title	Start_Year	Genres	Numvotes
Avengers: Endgame	2019	Action,Adventure,Sci-Fi	441135
Captain Marvel	2019	Action,Adventure,Sci-Fi	296225
Glass	2019	Drama,Sci-Fi,Thriller	133793
Shazam!	2019	Action,Adventure,Comedy	109051
Us	2019	Horror,Mystery,Thriller	102511

Plotting the trends in genres based on top voted movies

Top genres based on number of votes for the period 2010-2019

Genres (top to bottom): Action,Adventure,Sci-Fi; Drama,Sci-Fi,Thriller; Action,Adventure,Comedy; Horror,Mystery,Thriller; Action,Crime,Thriller; Action,Adventure,Crime; Action,Adventure,Animation; Adventure,Comedy,Family

Numvotes axis: 0.00, 0.25, 0.50, 0.75, 1.00, 1.25, 1.50, 1.75 (1e6)

Top genres based on number of votes for the year 2019

Numvotes axis: 0, 100000, 200000, 300000, 400000

Top Movies with highest Domestic Gross

Title	Studio	Domestic_Gross	Year
Star Wars: The Force Awakens	BV	936700000.0	2015
Black Panther	BV	700100000.0	2018
Avengers: Infinity War	BV	678800000.0	2018
Jurassic World	Uni.	652300000.0	2015
Marvel's The Avengers	BV	623400000.0	2012
Star Wars: The Last Jedi	BV	620200000.0	2017
Incredibles 2	BV	608600000.0	2018
Rogue One: A Star Wars Story	BV	532200000.0	2016
Beauty and the Beast (2017)	BV	504000000.0	2017
Finding Dory	BV	486300000.0	2016

BV and Universal studios have created the top movies with highest gross.

Plotting the trends of domestic gross earned by BV and Universal Studio over the years.

4.Analysis of Domestic gross earned by top studios over the years showed that BV studio is earning highest domestic gross consistently.


Trends in domestic gross earned by top studios

Top Movies with highest Foreign Gross

Title	Studio	Foreign_Gross	Year
Harry Potter and the Deathly Hallows Part 2	WB	960500000.0	2011
Avengers: Age of Ultron	BV	946400000.0	2015
Marvel's The Avengers	BV	895500000.0	2012
Jurassic World: Fallen Kingdom	Uni.	891800000.0	2018
Frozen	BV	875700000.0	2013
Wolf Warrior 2	HC	867600000.0	2017
Transformers: Age of Extinction	Par.	858600000.0	2014
Minions	Uni.	823400000.0	2015
Aquaman	WB	812700000.0	2018
Iron Man 3	BV	805800000.0	2013

The top studios which has produced movies with highest foreign gross are Warner Bros.,BV,Universal,HC and Paramount studios.

Plotting the trends of foreign gross earned by Warner Bros.,BV,Universal,HC and Paramount studios over the years.

5.From this plot we can see that even though BV studio has got the highest foreign gross in box office,there has been a dip in its revenue earned in 2018.Whereas WB studio can be seen showing a consistent growth in past few years.
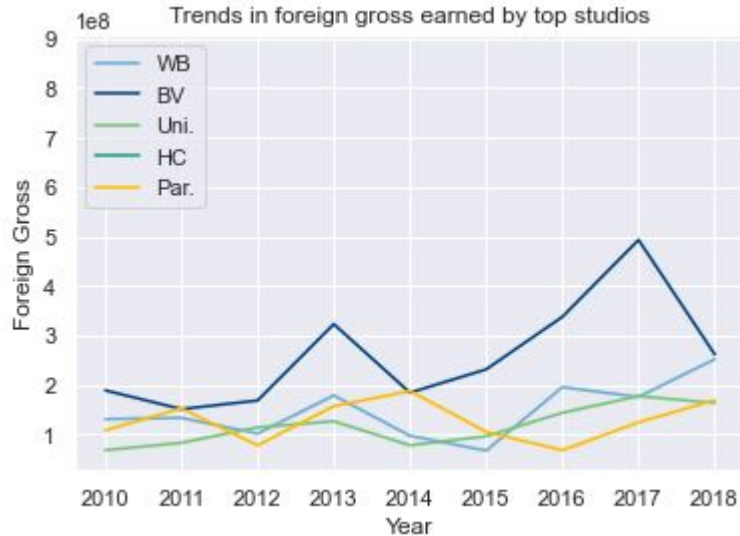
Conclusions

- In order to get maximum revenue genres like Sci-Fi,Adventure,Animation is to be considered

- For getting good rating genres like Short,Documentary,Game-Show is preferrable

- Highest number of votes was obtained for genres like Action, Adventure & Sci-Fi

- For collaboration BV studio can be considered which has performed consistently on the basis of domestic gross earned.WB studio can also be considered as its performance has been improving lately on the basis of foreign gross earned

Limitations

Based on the analysis we were able to understand the current trends at the box office.However the success of a movie depends on multiple factors such as the crew,a bold script, screenplay and the marketing strategies adopted.

Eg: The movie 'Justice League' released in 2017 bombed at the box office despite it's starstudded cast and action sequences ,the movie was criticized for its underdeveloped plot and resulted in studio loosing its money.

Also while analysing the top movies based on number of votes it was found that though every year the top voted movie belonged to the genre Action,Adventure,Sci-Fi.In 2013,the top voted movie was "The Wolf of Wall street" which belonged to genre "Biography,crime" which clearly shows that bold script can definitely make a difference.

Thank You!

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