



Business Intelligence: An EDA for the new launch of a movie studio

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Date: 23rd June 2020 Instructor: James Irving

Problem Statement

The problem statement is relevant to Microsoft's new endeavor to expand its various business segments. For instance, with years of increasing profits for its Xbox gaming console entertainment division, game development operational segment, movie streaming services, etc. Microsoft has strategized a new project to continue building relationships with its clientele with the launch of grand opening of a film studio.

Microsoft has tasked the data science department to learn about the movie industry, to see what are some of the most popular films that moviegoers would watch, and to provide movie recommendations to meet the audience's film preferences.

In this exploratory data analysis, three questions were answered in that sequential order:

What does the imdb scores and gross revenues say about certain types of films?, How does the duration and the budget play a significant role in the types of movies to produce?, and Does the directors or actors/actresses impact the return on investments (ROI) from the gross revenues, budget, and profits from the box office outcomes?

Methodology

- Problem Statement
- Data Collection
- Data cleaning
- EDA Findings
- Conclusion
- Thank You



Exploratory Data Analysis on the Findings

Movie Titles

Comedy

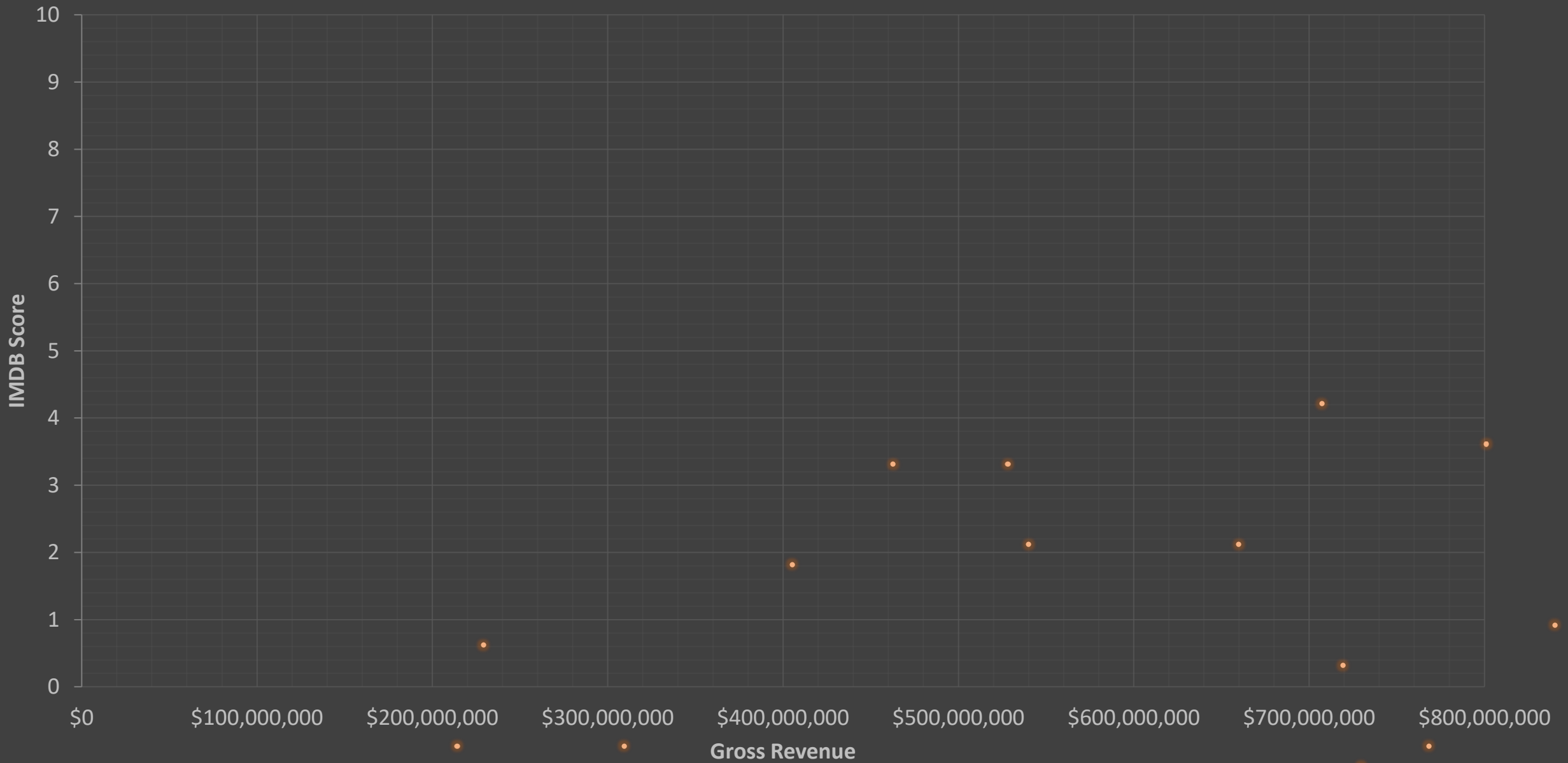
Drama | Horror | Thriller
Horror | Sci-Fi | Thriller
Horror | Mystery | Thriller
Mystery | Thriller
Action | Horror | Sci-Fi | Thriller
Horror | Thriller
Action | Crime | Drama | Romance | Thriller
Action | Adventure | Sci-Fi | Thriller
Action | Adventure | Fantasy
genres
Crime | Thriller
Action | Adventure | Sci-Fi
Drama | Horror | Sci-Fi | Thriller
Action
Comedy | History
Action | Adventure
Drama | Thriller
Adventure | Sci-Fi | Thriller
Action | Comedy | Crime
Action | Crime | Thriller
Fantasy | Horror | Thriller
Horror
Action | Comedy
Crime | Horror | Thriller
Sci-Fi | Thriller
Action | Horror | Thriller
Adventure | Comedy | Sci-Fi
Drama
Action | Adventure | Fantasy | Sci-Fi

movie title

The Exorcist
Grease
Star Wars: Episode V - The Empire Strikes Back
WarGames
Indiana Jones and the Last Crusade
A Few Good Men
Jurassic Park
Twister
Star Wars: Episode III - Revenge of the Sith
The Others
My Big Fat Greek Wedding
The Incredibles
The Da Vinci Code
Avatar
The Last House on the Left
The Avengers
Alice in Wonderland
District 9
Grown Ups
Deadpool
The Conjuring
Cinderella
Despicable Me 2
The Purge
Philomena
Taken 3
Trainwreck
The Visit
The Martian

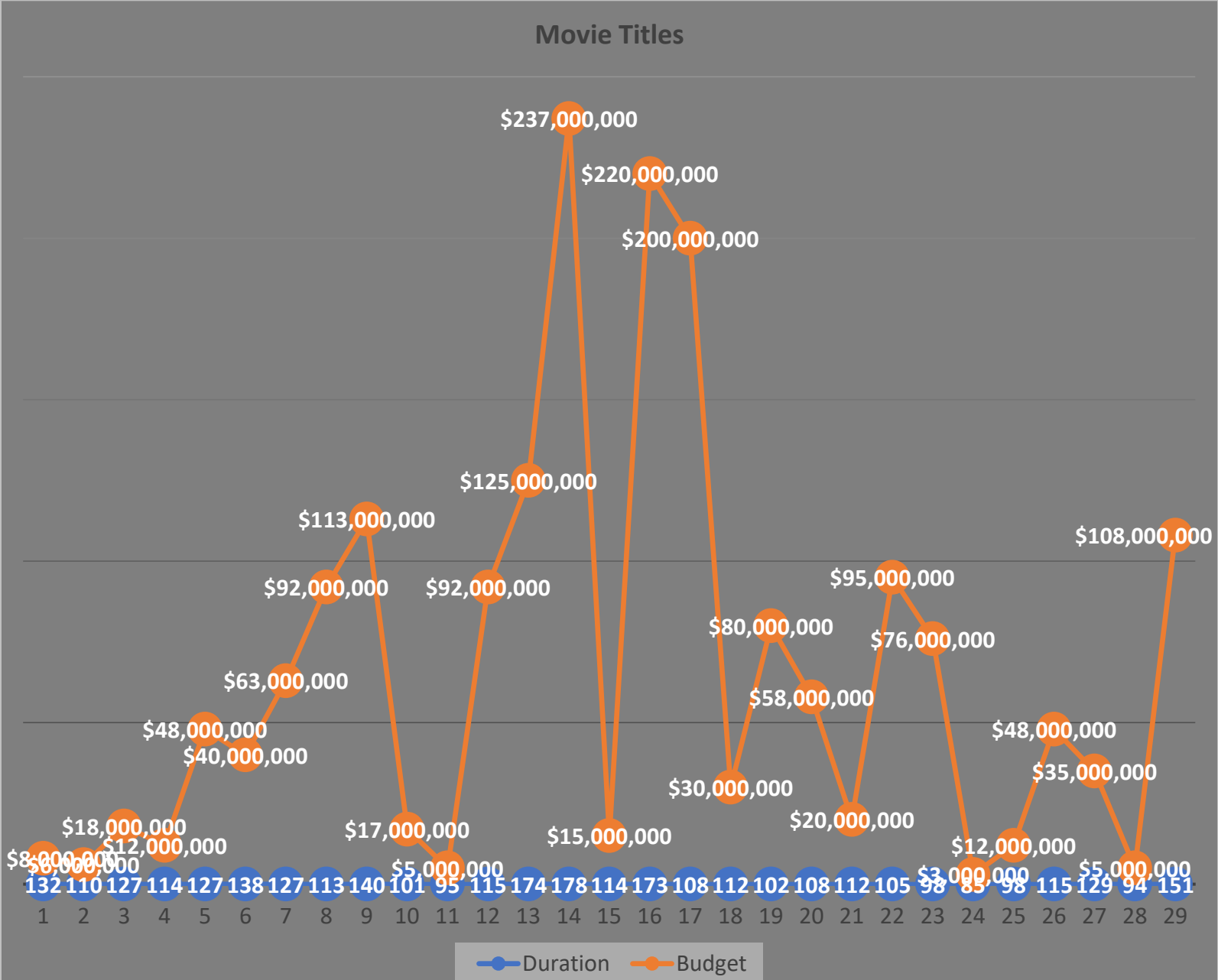
Gross	IMDB Score	movie_title
\$137,387,272	8	The Exorcist
\$241,437,427	7.2	Grease
\$334,185,206	8.8	Star Wars: Episode V - The Empire Strikes Back
\$37,707,719	7.1	WarGames
\$197,171,806	8.3	Indiana Jones and the Last Crusade
\$181,360,000	7.6	A Few Good Men
\$356,784,000	8.1	Jurassic Park
\$241,688,385	6.3	Twister
\$380,262,555	7.6	Star Wars: Episode III - Revenge of the Sith
\$141,340,178	7.6	The Others
\$217,536,138	6.6	My Big Fat Greek Wedding
\$261,437,578	8	The Incredibles
\$64,423,650	6.6	The Da Vinci Code
\$760,505,847	7.9	Avatar
\$32,721,635	6.6	The Last House on the Left
\$623,279,547	8.1	The Avengers
\$204,565,000	6.5	Alice in Wonderland
\$115,646,235	8	District 9
\$162,001,186	6	Grown Ups
\$363,024,263	8.1	Deadpool
\$96,471,845	7.5	The Conjuring
\$201,148,159	7	Cinderella
\$368,049,635	7.5	Despicable Me 2
\$79,568,000	5.7	The Purge
\$290,158,751	7.6	Philomena
\$89,253,340	6	Taken 3
\$110,008,260	6.3	Trainwreck
\$65,069,140	6.2	The Visit
\$228,430,993	8.1	The Martian

Findings



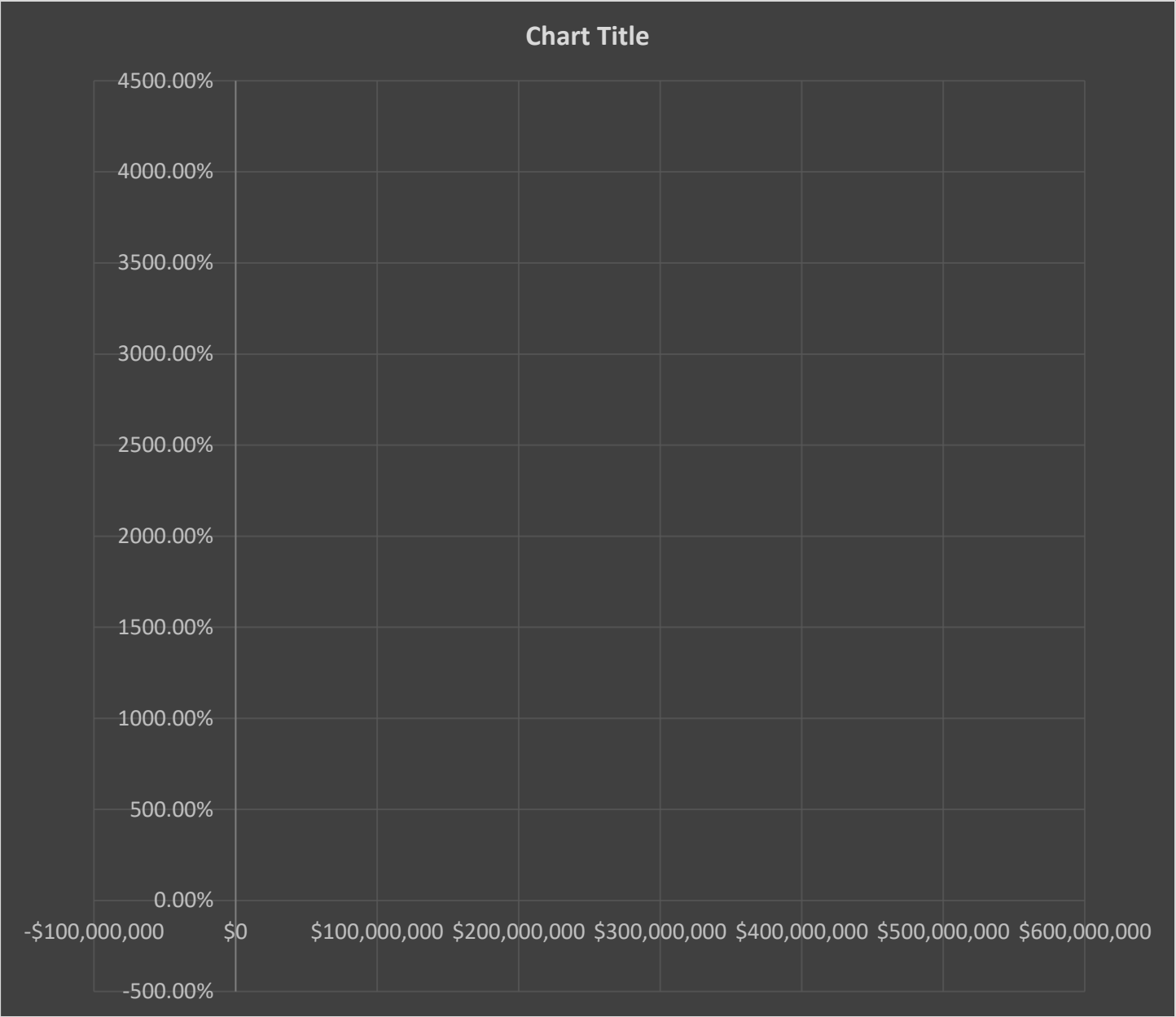
Duration	Budget	movie_title
132	\$8,000,000	The Exorcist
110	\$6,000,000	Grease
		Star Wars: Episode V - The Empire
127	\$18,000,000	Strikes Back
114	\$12,000,000	WarGames
127	\$48,000,000	Indiana Jones and the Last Crusade
138	\$40,000,000	A Few Good Men
127	\$63,000,000	Jurassic Park
113	\$92,000,000	Twister
		Star Wars: Episode III - Revenge of the
140	\$113,000,000	Sith
101	\$17,000,000	The Others
95	\$5,000,000	My Big Fat Greek Wedding
115	\$92,000,000	The Incredibles
174	\$125,000,000	The Da Vinci Code
178	\$237,000,000	Avatar
114	\$15,000,000	The Last House on the Left
173	\$220,000,000	The Avengers
108	\$200,000,000	Alice in Wonderland
112	\$30,000,000	District 9
102	\$80,000,000	Grown Ups
108	\$58,000,000	Deadpool
112	\$20,000,000	The Conjuring
105	\$95,000,000	Cinderella
98	\$76,000,000	Despicable Me 2
85	\$3,000,000	The Purge
98	\$12,000,000	Philomena
115	\$48,000,000	Taken 3
129	\$35,000,000	Trainwreck
94	\$5,000,000	The Visit
151	\$108,000,000	The Martian

Findings

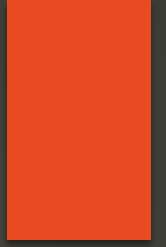


Gross	Budget	Profit	ROI
\$137,387,272	\$8,000,000	\$129,387,272	1617.34%
\$241,437,427	\$6,000,000	\$235,437,427	3923.96%
\$334,185,206	\$18,000,000	\$316,185,206	1756.58%
\$37,707,719	\$12,000,000	\$25,707,719	214.23%
\$197,171,806	\$48,000,000	\$149,171,806	310.77%
\$181,360,000	\$40,000,000	\$141,360,000	353.40%
\$356,784,000	\$63,000,000	\$293,784,000	466.32%
\$241,688,385	\$92,000,000	\$149,688,385	162.70%
\$380,262,555	\$113,000,000	\$267,262,555	236.52%
\$141,340,178	\$17,000,000	\$124,340,178	731.41%
\$217,536,138	\$5,000,000	\$212,536,138	4250.72%
\$261,437,578	\$92,000,000	\$169,437,578	184.17%
\$64,423,650	\$125,000,000	-\$60,576,350	-48.46%
\$760,505,847	\$237,000,000	\$523,505,847	220.89%
\$32,721,635	\$15,000,000	\$17,721,635	118.14%
\$623,279,547	\$220,000,000	\$403,279,547	183.31%
\$204,565,000	\$200,000,000	\$4,565,000	2.28%
\$115,646,235	\$30,000,000	\$85,646,235	285.49%
\$162,001,186	\$80,000,000	\$82,001,186	102.50%
\$363,024,263	\$58,000,000	\$305,024,263	525.90%
\$96,471,845	\$20,000,000	\$76,471,845	382.36%
\$201,148,159	\$95,000,000	\$106,148,159	111.73%
\$368,049,635	\$76,000,000	\$292,049,635	384.28%
\$79,568,000	\$3,000,000	\$76,568,000	2552.27%
\$290,158,751	\$12,000,000	\$278,158,751	2317.99%
\$89,253,340	\$48,000,000	\$41,253,340	85.94%
\$110,008,260	\$35,000,000	\$75,008,260	214.31%
\$65,069,140	\$5,000,000	\$60,069,140	1201.38%
\$228,430,993	\$108,000,000	\$120,430,993	111.51%

Findings



Future Work



Conclusion



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Throughout this new project endeavor, three recommendations have been concluded. This exploratory data analysis conclusion would assist in Microsoft's new opening of a film production studio. In addition, these business recommendations were made possible by a few statistical models and research.

The first recommendation comes from the answer to the first question both the IMDB scores and box office revenues are relevant factors in Microsoft's endeavor. For example, predicting and researching about the preferences and ratings by moviegoers will assist in making strategic decisions about which genre of films to make. Lastly, I recommend that Microsoft gather more data on its own client base from the Xbox gaming console/game development divisions and movie streaming services in order to decide what genres of films will meet its business objectives.

Secondly, in this recommendation, I analyzed the data from the second question. The factors here include budgeting costs, durations, and gross revenues play a major role in the success or failure of a movie. In the production of a film, capital must be distributed to individuals prior to filming. For instance, salary negotiations, wardrobes, filming locations, equipment, machineries, etc. So, even prior to filming scenes and plots, the costs are already lowering the budget to make the movie. Now, in terms of the length of time the movie runs, the time it takes for a movie to finish filming is also a major impact on budgeting as well. This deals with factors such as the scope of the movie script, who the actors/actresses playing in the film, and the director. So, in this business recommendation, I insist that Microsoft should strategize on the screenplay movie script, where the film will be made, how the length of the movie should coincide with the plots in the movie script, and most of all the genre of movie to produce.

Lastly, in this final business recommendation, I utilized the answer from the third question. This entails the variable factors such as box office revenues, budget, profits, and return on investments. Those features are of great importance with regards to Microsoft's business operations and financials as well. For example, in terms of ROI, there is a wider scope regarding Microsoft's annual reports on its business segments. On the other hand, regarding the gross, budget, and profits, those are included in the income statement of Microsoft's financial statements. Whether or not this new business endeavor adds growth or loss to Microsoft's overall business objectives, it has to do with its strategies used in building what it already has established. In saying that, I recommend that Microsoft utilize what they have already established in its business segments such as entertainment, artificial intelligence, services, etc. to form this new film studio as an entry point into the movie industry. In addition, Microsoft must incorporate its financials as well as other research to create a buffer from risk and potential losses as this is new space for Microsoft to enter.

Thank You

Lastly, I want to say, Thank You!!! I appreciate all of you taking the time to be here for the new launch of Microsoft's film production studio division. This new endeavor is due to our continuing success of the Xbox gaming console and game development division, movie streaming services, etc. Today's presentation consists of data that provides information on the genres of films that moviegoers are most likely to watch. In addition, the data is also used for recommending which types of movies to produce. Once again, thank you for time.