BUSINESS INTELLIGENCE INSIGHTS OF IMDB MOVIE DATA SET FROM TABLEAU

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ABSTRACT

Insights on influence of KPI's such as profit ratio, content rating, social media influence and directors on revenue of a movie

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ISDS 556 - Data Warehousing and Foundations of Business Intelligence

Introduction:

This report is a draft report to be submitted to the course ISDS 556 - Data Warehousing and Foundations of Business Intelligence. IMDB 5000 Movie Dataset was chosen from Kaggle for this visualization project. Dataset consists of 5044 records and 28 variables which encompasses data from movies across the world. Most of the data set comprises data about the movies from the United States. Tableau Desktop version 10.3.1 was utilized for the project. The project mainly aims to gather insights about the factors or Key Performance Indicators (KPI's) that influence the revenue of movies. The flow of the report is in lines of FAQ to be more intuitive and reader friendly.

a) How the revenue of the movies varies as per genres across the world?

Chart: A dual axis chart of combination filled area map and symbol map. Dataset consists of approximately about 45 different genres of movies. The pie chart illustrates the gross revenue of each genre of movie famous in that country as shown in figure1.
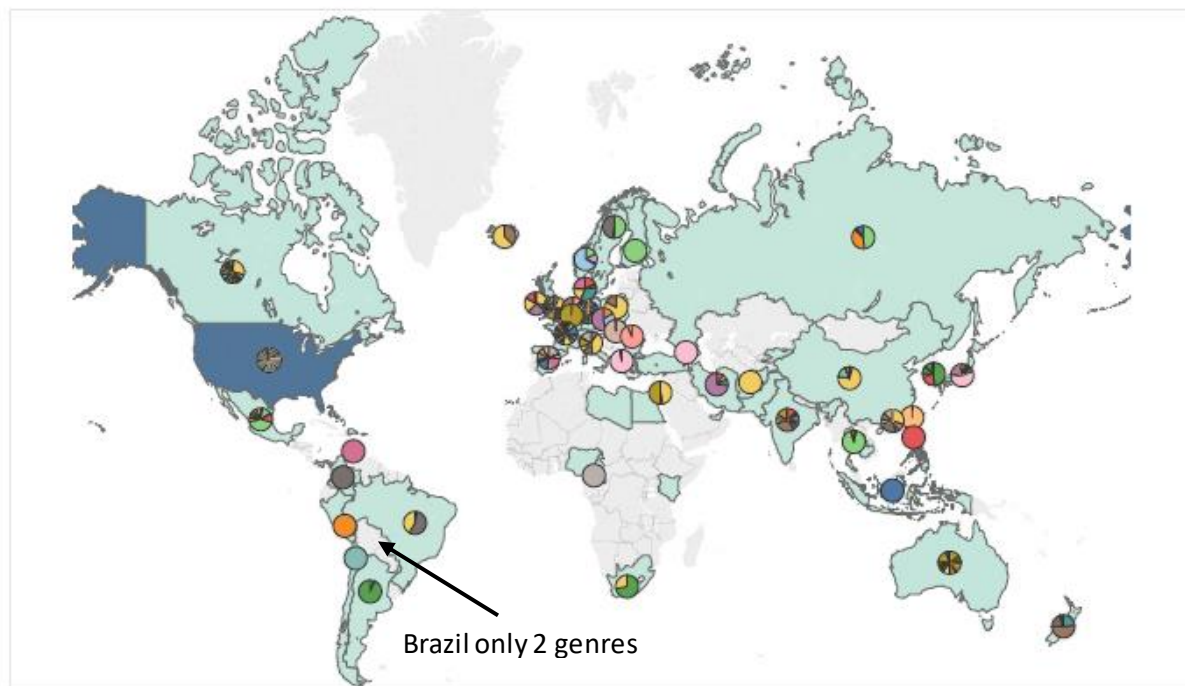

Map based on Longitude (generated) and Longitude (generated) and Latitude (generated). Details are shown for Country. For pane Longitude (generated): Color shows sum of Gross. For pane Longitude (generated) (2): Color shows details about Genres. The view is filtered on Latitude (generated) and Longitude (generated). The Latitude (generated) filter keeps non-Null values only. The Longitude (generated) filter keeps non-Null values only.

Gross
17,149   179B

Genres
- Action
- Action|Adventure
- Action|Adventure|Animation|Comedy|Crime|Family|Fantasy
- Action|Adventure|Animation|Comedy|Drama|Family|Fantasy|Thriller
- Action|Adventure|Animation|Comedy|Drama|Family|Sci-Fi

Fig.1. combination filled area and symbol map

Insight:

1.Colour gradient of the filled map shows the gross revenue of the movies across the world. The USA has earned a gross revenue of approximately 179 billion dollars.

2. From the pie chart, it can be deduced that for example, USA comprises of almost all the genres of movies whereas Brazil has only two genres as shown in figure1. Action|Adventure|Sci-Fi is the most famous genre in the USA with a gross revenue of $9.2 billion as shown in figure 2. Similarly, in Brazil genre Crime|Drama has a revenue of $75,63,297 and genre Drama has a revenue of $56,15,690.
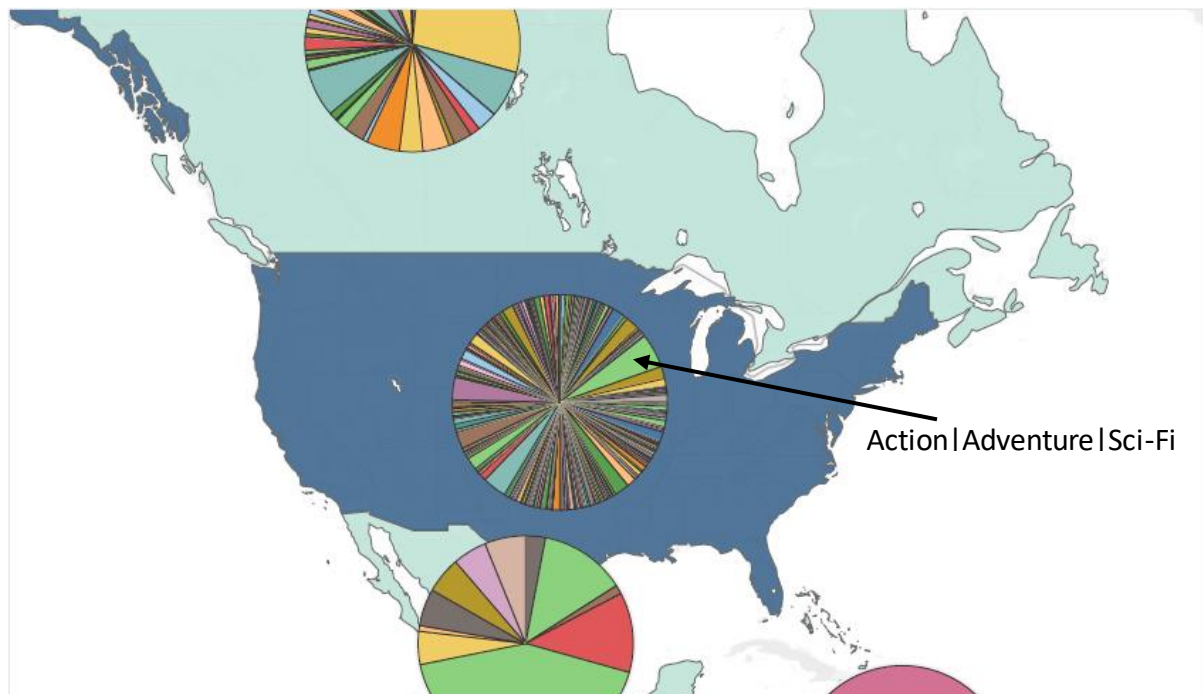

Fig.2. Enlarged pie chart of USA

b) How does gross revenue vary with movie content rating and IMDB scores?

Chart: Bubble chart with labels content rating, sum of IMDB Scores and sum of gross revenue. Radius of the bubble indicates the gross revenue of each content rating.
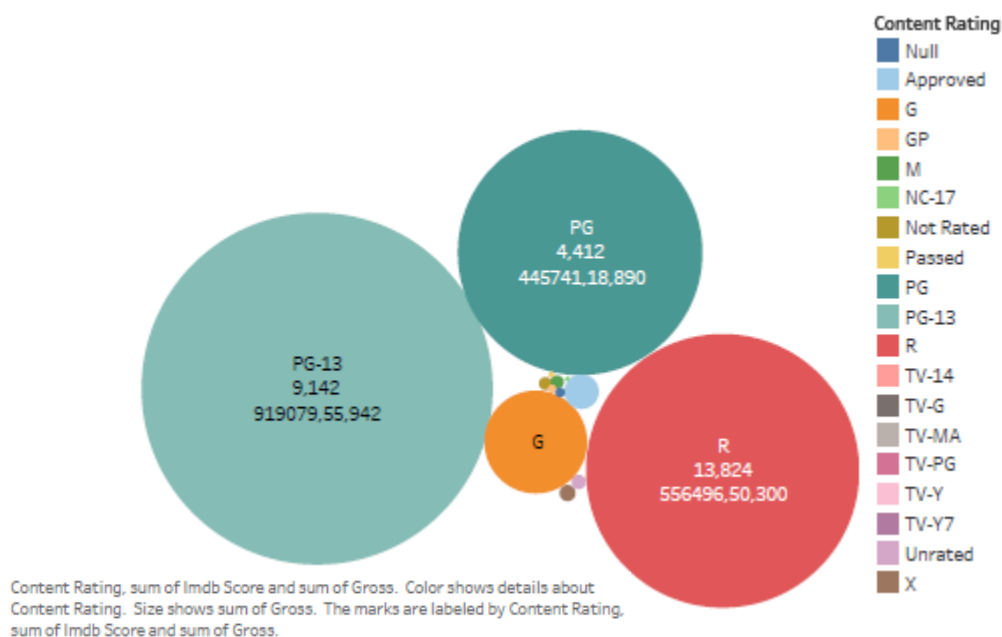

Content Rating, sum of Imdb Score and sum of Gross. Color shows details about Content Rating. Size shows sum of Gross. The marks are labeled by Content Rating, sum of Imdb Score and sum of Gross.

Fig.3. Bubble chart showing gross revenue

Insight: R content movies have the maximum IMDB score followed by PG-13 as shown in figure3. However, Investment in PG-13 movies will yield better revenue for the producers.

c) Which movie is the most successful, does profit ratio affect a movie's position?

Chart: The treemap is utilized to illustrate the movie with highest gross revenue. Measures utilized are gross and profit ratio. Similarly, dimensions used are movie title and title year. Data has been filtered to select movies from the year 2010 to 2016. Profit ratio is one of the Key Performance Indicators (KPI) that measures the success of the movie. A calculated field is created called Profit ratio with the formula gross/budget. Thus, if the ratio is more than one then the movie has achieved its break even and well on its way to earning profit.
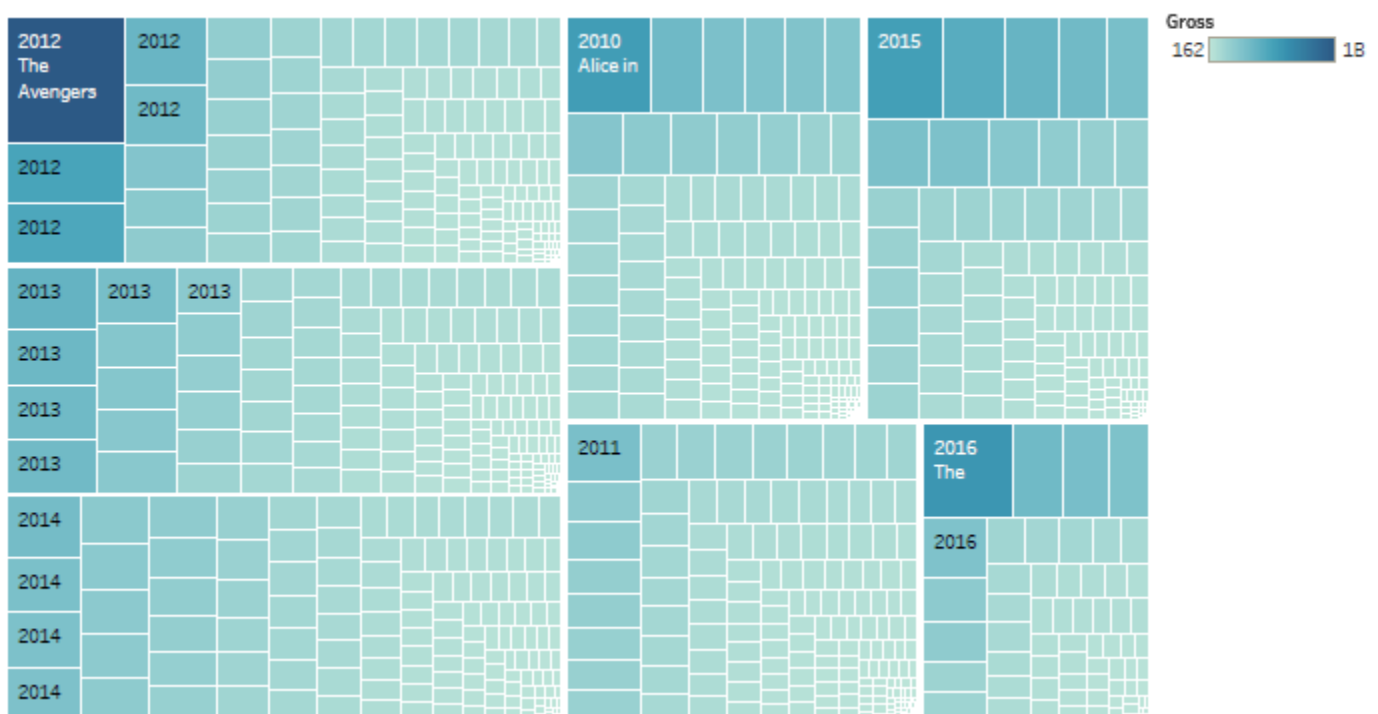

Fig.4. Tree map showing the highest grossing movie

Insight: As per the dataset, The Avengers released in 2012 is the highest grossing movie of this decade with earnings of about $1.2 billion as shown in figure 4. If the tree map is sorted based on the profit ratio as shown in figure 5, then movie The Gallows tops the list. The Gallows has a profit ratio of about 227 compared to 2.8 of The Avengers. Smaller studios can take a leaf out of movies like The Gallows and earn profit from a smaller budget.
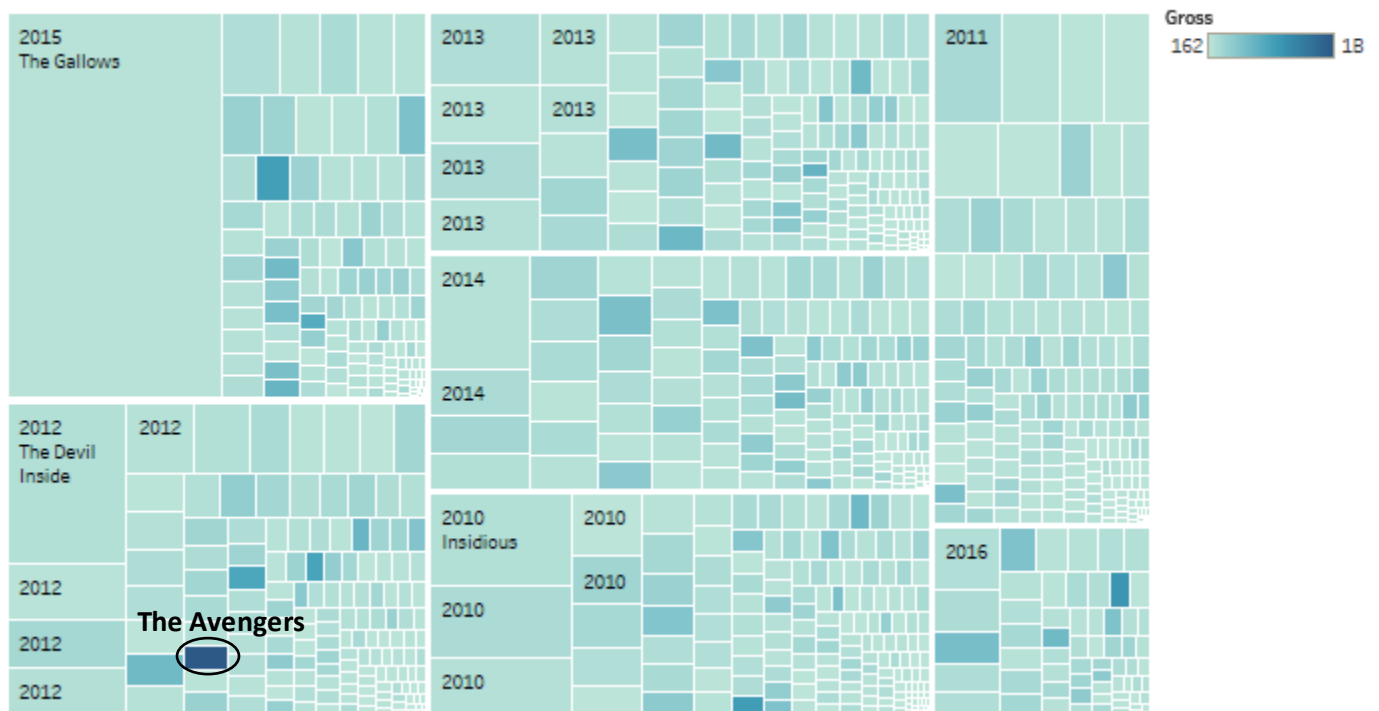
Fig.5. Tree map showing the movie with highest profit ratio

d) Which director is the most successful, does profit ratio affect his position?

Chart: On similar lines of the previous question, the treemap is utilized to illustrate the director with the highest gross revenue of all time. Data has been filtered to select movies from the year 1985 to 2016 for a better clarity of treemap as the result is the same with years included from 1916.
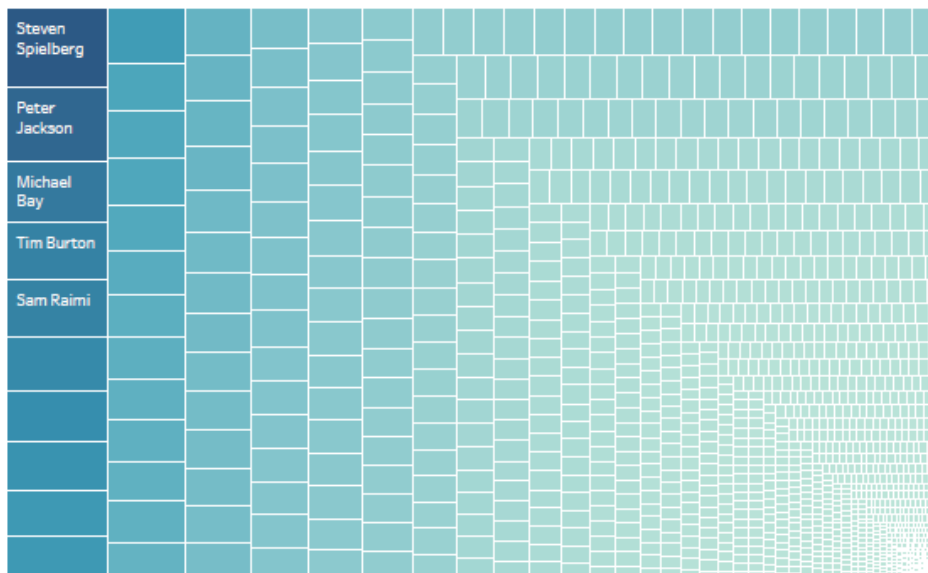

Fig.6. Tree map showing the director with highest gross revenue

Insight: Steven Spielberg is the highest grossing director of all time in terms of revenue at $ 4 billion as shown in figure 6. Similarly, from years 2010 to 2016, Joss Wesdon is the highest

grossing director for The Avengers and Travis Cluff is the director with highest profit ratio for The Gallows.

e) How do director Facebook likes and gross revenue relate?

Chart: Bubble chart varies in size based on a number of Facebook likes and color based on gross revenue.
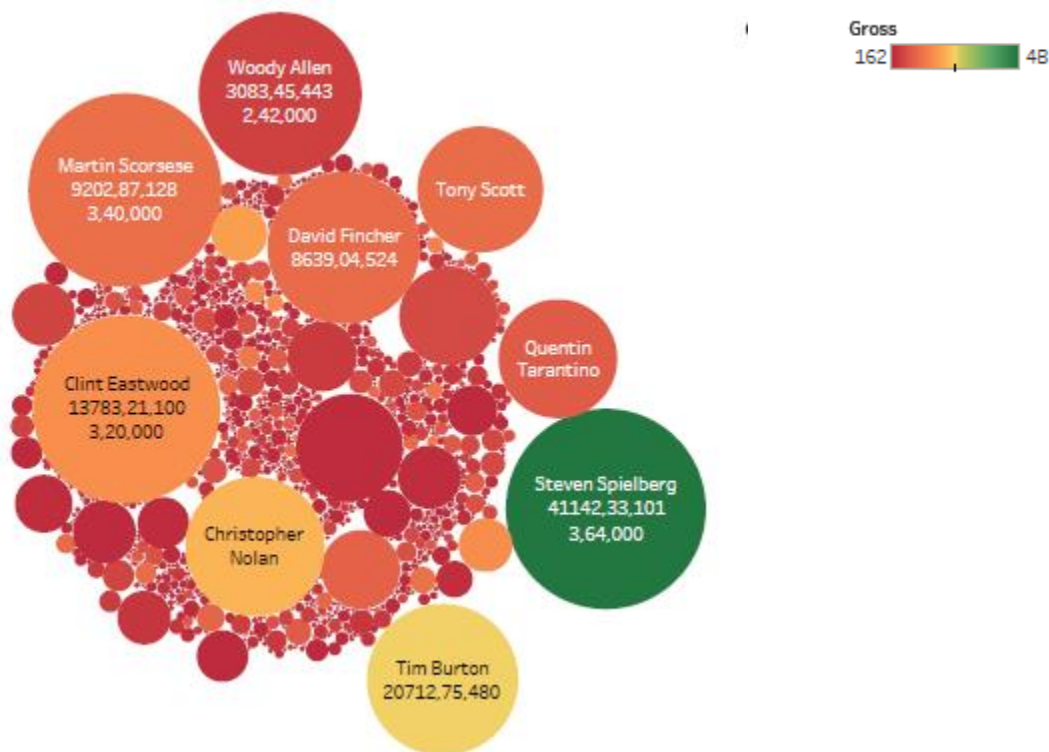

Fig.7. Bubble map showing the director Facebook likes and gross revenue

Insight: No of Facebook likes seems to be an approximate indicator of the movie revenue. Steven Spielberg has the highest number of Facebook likes at 364,000. As mentioned earlier he is the grossing director of all time. Tim Burton is also featured in both the list.

f) How do IMDB scores and gross revenue are related?

Chart: Circle view chart is utilized to show the variation of gross revenue based on IMDB scores. The size of the circle and color gradient of the circle depict the variation of gross.

Insight: As the IMDB score increases by year revenue are also increasing as shown in figure 8 below. Thus, if critics and users post higher IMDB scores revenue of the movie tend to increase.
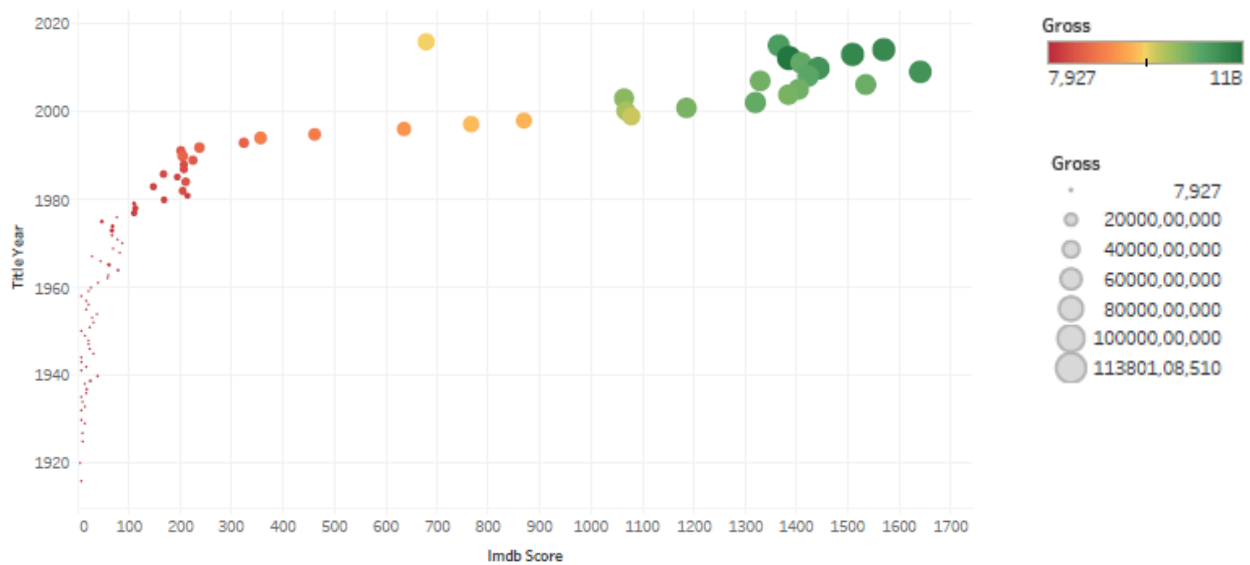
Fig.8. Circle view chart the showing Imdb scores and gross revenue

Conclusion: Insights on influence of KPI's such as profit ratio, content rating, social media influence and directors on revenue of a movie is visualized and discussed. The project has further scope to gather insights about actors, duration of the movie, face number in posters. Tableau is a powerful business intelligence tool which has made data visualization more accessible in a user friendly way.