MGMT 635-101  
Warner Brothers   
Final Project Transcript  
Green Team   
Volney, Aditya, Sreya, Suchita, Thanmai, Mehul  
  
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**Aditya:**

Hello all, I am Aditya Patel and today my team, the Green Team, will be discussing Warner Brothers Studio focusing on its business rating and performances. The discussion has been divided into five key elements. First the data collection, then data exploration, business analysis, theatrical analysis and lastly the key inferences with the real world data. The data collection was performed using a dedicated tool, Webscraper dot IO. Instead of manually copying and pasting, we utilize the state of our tool to scrape all the 40,000 movies by Warner Brothers. Although Web Scrapper might seem like an easy tool, it requires more data cleaning. We transform the data by converting the data types into suitable formats and removing blank and incorrect instances.

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The moment we decided to go with Warner Brothers, the 40,000 movies, we were very clear how to collect the data and usage of this tool was very effective in our business analysis. Finally, we created a new column named Weighted Reading to counter the effect of influenced voting. By influenced I mean scenarios. We're using only 10 to 100 votes. One can project the movie rating high as 9.8 which can be deceiving for someone who is checking the top 10 rated movies because there might be a name of movies which have 10 rating or 9.8 rating out of 10 but the number of vote is only 1000 to 2000. Now coming to the business analysis part. Now using weighted rating, global gross index here and the number of votes, we created a model to identify the 9 jewels of Warner Brothers.

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Similar to the 9 jewels of Mughal Empire, these directors have outperformed others in terms of award, Oscar revenue recognition and combination of all. The list includes great directors such as Michael Bay, Todd Phillips, Christopher Nolan, Anthony Russo, Peter Jackson, James Cameron. Based on the optimized weighted rating, our model assigned weight to all the columns in our data cell and it hyper tuned all the weights over a series of data. And finally, after going through a lot of learning process, our model assigned a static weight to all of the column and based on that weight, a final ranking was created and then the ranking was sorted in the decreasing order and someone who has got the highest rank was supposed to be the best of the director.

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Now coming to the next business analysis, the next business analysis, the source of capital focuses on the money as money is the critical factor in any business. Though a clouder analysis of global and Canadian US grows, our relationship was easily developed. It can be inferred that for a movie to be successful globally, it must be for successful in the US and Canada. Now further analysis would be done by Suchita. Thank you.

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**Suchita:**

In this slide we will talk about the analysis of top five movies since 2000 based on the movie ratings. As you can see, the top one movie is Lord of the Rings, The Return of the Kings Special Extended Edition scenes with rating 9.7. The 2nd is The Lord of the Rings The Two Towers Special Extended Edition scenes with rating 9.5. Third is Dominic Monaghan, interviews with Elijah Wood with 9.5 ratings.

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The 4th is Lord of the Rings, the Fellowship of the Rings Special Extended Edition since weather 9.5 rating and the top fifth movie is the Town Business part three with rating 9.4. Based on the graph, we can see the ratings of the top five Warner Brothers movies since 2000 and the ratings are ranging from 9.4 to 9.7 indicating high critical claim and the highest rated movie reads the other movies.

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**Mehul:**

Hello everyone, I'm Mehul Kapoor from Green Team and my question is how many hits has Warner Bros produced? So here we have a table with rating and their respective counts. Since different number of people voted for the ratings, we had to calculate the weighted average of the ratings. Here we have produced a graph with that data.

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By analyzing the above graph in the table, we concluded that rating between 7:00 and 10:00 would be considered as hits. The total number of hits produced by Warner Bros was 37152, which is approximately 93% of the total count. Rating between five to seven were considered as moderate movies. So the total number of moderate movies produced by Warner Bros was 2407, which is 6% of the total count. And ratings that were below 5 are considered as flops. So the total number of flops produced by them was 356. That is 0.89% of the total count. Moving on to the next question, here we are finding how much content was produced by Warner Bros over the years. So here in the table we have basically divided the dates from 1910 to 2023. This is a decade wise count.

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Using this table we have created this graph which depicts the count for each decade. For example, in 1990s we can see there has been a huge increase in the number of movies or the content produced by Warner Bros. By analyzing the above graph in the table, we have concluded the overall increase in number of content produced by Warner Bros appeared to be linear. During the 90s, the production almost doubled which could be the result of mergers and acquisition of Turner Broadcasting System which had brought additional content into the Warner portfolio. In 2020, we can observe the effects of COVID on the film industry. The count has significantly reduced due to COVID production was suspended, worldwide release dates were delayed and rise of streaming services had affected these traditional media houses.

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**Thanmai:**

So let us look at the trend analysis for real time correlation. If we observe here, we'll be taking the time period in two spans, which is like five years and 10 years. These time frames are chosen to capture both short term fluctuations and long term. The purpose of this time frames is to help us understand immediate impacts and gradual shifts in viewer trends over a decade. Let's see the correlation coefficients. We observe two correlation coefficients of 0.73 and 0.65 for five and 10 years respectively. These numbers indicate a moderate to strong correlation between time and viewership trends if we see the decline in viewership, I mean if we observe in 2020, there is a particular interest in the decline in viewership. This could this could be attributed to factors like changing viewing habits or external events which are impacting media consumption. And let's take a look at the highest and lowest rated TV episodes. This table shows that we have Prey as highest rating with 9.8 and Person of Interest with 9.8. And if then it's also 9.8. While several episodes of The Rosy O'Donnell Show are tied at the lowest rating 1.0, if we see the graph by analyzing this, it shows the average annual ratings of TV episodes from 1999 to 2020. If we notice the trend of fluctuating ratings with an interesting peak, the average rating suggesting a shift in either content quality or viewer being rating behavior.

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So we also studied how average ratings correlate with time in real time, revealing that while there is a general trend of increasing ratings, it is not uniformly consistent across all ears. So, it's important to consider that there are several factors that are affecting trends. They might not be directly captured in our data set, like socio cultural changes or technological advancements in media consumption. We can say that the average annual rating of TV episodes is displayed by the trend, and to summarize this, we can say that the information indicates that although TV episode ratings have been rising over time, this trend has not been steady throughout all years and may be impacted by other variables.

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**Volney:**

So here's what I did. I wanted to model for return on investment. I wanted to look at what variables would affect the gross for a film worldwide growth. Well, that's an important question, right, because we look at data, we want to get something useful out of it, something we can monetize. So here we have something pondering these questions, right.

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What can we do with this data? How can we get money? How can we, we we've felt, OK. So I'm going to walk you through what I did. First step was I had to put out a job posting. I hired an engineer to scrape IMDb for me because I didn't have the time to do it. And this is a management class, right. So we're looking at we can business, right. So part of business is contracting with independent contractor. So on the left hand side here I put out a job posting, found somebody, hired him and all he did was he took, he put together a scraper and the scraper pulled the data from IMDb and populated a spreadsheet for me. The data was kind of sloppy. Some of the things were out of alignment and what I did was I went through and I compiled what he provided. Special shout out to Doug Maui because it's crucial I'm going to walk through what I did. So what I needed to do is I needed to index the values for qualitative variables, right? So actors, directors, ratings, genre.

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And then I also calculated an ensemble score which was an average of each individual actor that was in the top 10 build roles. So I created the index and then I was able to populate an input for a regression right? So everything here is a numerical value. So this is my regression input and then this is what I want that list. OK. So I got some insights. Insights we've talked about, right, top 20 Oscar winners, top 20 highest grossing directors, opening weekend gross by genre. I was able to put together a little correlation graph, which showed me that there's correlation between lead and year, between growth and opening, between US, Canada and worldwide growth, which obviously makes sense, right? You're making good money right out of the gate. You're probably going to make good money overall. So that's an important indicator. If you're doing well. Opening weekends, it indicated that you're going to do well in total. OK, so here's what I have. I tried one regression for opening weekend where I modeled only for opening weekend, but that only had a 20% correlation. So I scratched that.

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And then I went for worldwide growth based on a couple less variables and I took out US, Canada. I took out a couple things or I reordered them. But when I did that for just worldwide growth, I went up with the 20% correlation which was. So put everything back in. I tinkered a little bit more and I found something with a 94% correlation that was super helpful. So what I did was I made a little box where you can input variables and the variables that are inputted gives you an output. Now it starts right here at 144 million because that's our intercept, which makes sense. I have all this in a spreadsheet if anybody wants to take a look at my input. And then right here. Right. So I did. I did one here where I modeled a film for 2023 with it's a it's a crime mystery lead is Ben Affleck. Rating is PG13 directors, Clint Eastwood 9 awards, 1 Oscar estimated the opening based on the comparable film, estimated US Canada by comparable film and the ensemble score. Right.

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And they want to make back 100%. So in order to do that they're going to be at around 42,000,000. Is there estimated worldwide for us? OK. And so why is this information important? Well, firms are looking at the data because they need to know what their customers are doing. And based on what their customers are doing, they can optimize and produce original content. Netflix is looking at data points that are as narrow as minute by minute analysis, right. And because they're looking at minute by minute stuff. And this is a report that was published yesterday. And there's sort of breaking news headlines all over the place because we're looking at each minute they're able to get, they're able to model for minute by minute consumer interest or consumer desire, what people want to watch, what people want to engage with and what they're doing. This is relevant because Netflix is a massive firm. And This is why, because they handle their data well. All right, I'm going to pass it off to my colleague and they're going to talk some more about what we found. Thank you.

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**Sreya:**  
Hi everyone.

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My name is Srey Mukherjee and for my portion of the presentation, I would like to take a step back from all the data that we have been discussing as a team to kind of hone in on what IMDb really is all about. As you might have already gathered, IMDb is Internet Movie Database. Its sole purpose is to have information about TV programs, home videos, video games and streaming content. It was launched in the year 1990. Its content includes cast and crew credits, plus summaries, user ratings and reviews for comprehensiveness. There's a wide range of movies, TV shows, and media that you can search through. As I said, search. You can also search for specific titles, actors and directors for industrial significance, It's widely used by industrial professionals and casual movie enthusiasts For features. It provides a platform for users to rate and review for accessibility. Almost everything is free. However, you can always purchase additional premium features.

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So to get into it, I want to discuss Amazon's involvement with IMDb. IMDb was founded, as I mentioned, in 1990, however it changed hands in terms of ownership several times. In 1998, Amazon acquired IMDb and has been the owner since then. It garnered the access to all this data. As you might know, Amazon also did something similar with Hoodies and Essentials. And now if you go on Amazon, you'll find Amazon Essentials, so that a much cheaper price. So what it does is it gathers all this data to see what the consumer most is enjoying and makes it a monopoly in the market by taking it over. So in 2023, Amazon Prime is the most successful streaming site and it has become this way from using the data from IMDb to monopolize the market. So how can we say, how does this tie in one with Warner Brothers?

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So Warner Brothers, as you can see, doesn't really have that much of a focus on a sports genre. As discussed by my teammates, their more critically acclaimed movies are in different genres and not so much so in sports. However, since 2015 when the movie Space Jam came out, they realized through the data gathered by Amazon that a sports genre was a new hot market and they wanted to expand to see how they could improve. So in 2020, in 2015, they had the movie Space Jams, which was a billion dollar movie. And then as you can see in this graph here, there was a movie called The Way Back by Ben Affleck in 2020 which was nominated for an Oscar. But it did not win and it was nominated for many awards and it did win almost 10 awards.

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And the one that I think is the most impressive is Ronaldo Marcus Green with over 50 awards and won Oscar win for his movie King Richard about Serena Williams. And this shows a shift because this movie came out in 2021 after the purchase of NFL Thursdays, which I will get into this shortly. So Warner Brothers saw from Amazon, the owner of IMDb, that sports genre was a new market that they need to embark on. Here I have another analysis of the worldwide gross by directors in terms of revenue for sports. Here we can see that it's close to $3 billion worth of a market. So NFL Thursdays. NFL Thursdays was a purchase made by Amazon for $13.2 billion with an 11 year exclusive rights deal with NFL for Thursday games that began March 2021.

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By having this access, what it did is that no one can stream the NFL game on Thursday nights except for Amazon. So if you were to walk into Buffalo Wild Wings and they don't have the Thursday night game on, most likely they don't have a subscription for Amazon Prime. The 1st 15 games averaged about 9.6 million viewers, which if we see in the years 20/15/2016 and 2017, it was around 2 million to 5 million at most. In terms of viewership. 11.3 million, with Amazon's internal data included, showed how much revenue it produced of the viewers that were watching NFL Thursdays. TNF averaged about 2.1 million viewers initially and now it's doing 11% better than Thursday nights in 2021. This Thursday with the Seahawks game A broke 12.5 million viewers last Thursday.

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The shift from the different genres to a focus on sports is mainly because from market study from IMD BS study we can see what is the most popular. We can see that sports genre may might not have been popular before but is now garnering a new set of consumers who really want to be able to stream this in real time. So Warner Brothers have now shifted gears and have been producing lots of movies such as Air Jordan to kind of get in this same audience to become better in this genre. So as a team to conclude, we produced a collection of data using web scraping, weighted rating calculations to analyze this data. Appropriately, we deduced from this data that an increase in number of content produced per decade is linear.

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We also highlighted significant trends and correlations in data such as in theatrics, genres, directors and now NFL Thursdays with Amazon. Thank you so much for watching.

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