W201-5: Scientific Movie Making

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## **Introduction: The Current State of Data Science in Movie Industry**

The movie industry is beginning to use Data Science to produce more successful movies, better market its movies to different segments and channels (box office, DVD, TV, internet, merchandise) and maximize profits. While the criteria for success of a movie can be defined in multiple ways, thus far most applications of data science aim to improve a movie’s commercial success i.e. maximize revenue and profit generated. Success via artistic acclaim or originality has been less of an objective.

Specific examples of the application of data science include:

1. Understanding the Audience:
2. Analyzing consumer cultures, sensitivities, preferences and tastes to design movies [1]
3. Tailoring movies to specific demographic groups [2]
4. Using IoT/wearable technology to track audience emotional response during screening in order to improve future movies [3]
5. Prediction of attributes:
6. Predicting whether a movie will win an Oscar [4]
7. Predicting movie attendance and box office trend [5]
8. Analyzing movie scripts to identify winners [6]
9. Designing Better Marketing:
10. Using social media data for promotional strategy [7]
11. Deep sentiment and segmentation analysis to find optimal marketing strategies

In order to achieve these goals, the industry uses techniques such as predictive analytics, machine learning, and deep sentiment analysis. Data used in the analysis include proprietary information such as sales, costs, consumer surveys, social media data such as facebook, twitter, and etc., and historical data of consumer movie preferences from the Internet Movie Database (IMDB).

Although the leaders of the industry recognize that applying big data technology can be the potential game-changer for the movie business, data science based decision making faces opposition from many who are concerned about artistic purity and creativity. Data science in this industry, particularly its use to tailor movies to customer preferences, is controversial.

## **Challenges: Key Decisions Facing Industry**

The movie industry in the US faces several challenges:

1. Increasing reliance on sequels and summer blockbusters for revenue
2. Marketing a movie in an increasingly segmented marketplace, especially if the goal is to create a blockbuster
3. Technological disruption from Internet and mobile media
4. Piracy and illegal screenings that take away revenue
5. Intense competition from non-traditional content providers such as Amazon, Netflix, HBO, and Youtube

Major movie studios view their most important challenge as producing a “blockbuster” movie - that is, a movie that will appeal to as many people as possible, which should translate into maximum revenue and ultimately profits. [8] This entails figuring out what makes a movie successful or appealing to a wide and general audience. Conversely, studios are desperately trying to avoid box office flops.

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## **Research Question**

*“To enable movie studios to produce a portfolio of movies - inclusive of small and medium productions along with blockbuster productions - that will be marketed to different segments; this strategy should be superior than just relying on blockbusters and should increase total profits. ”*

Our belief is that if a studio can produce a few successful and profitable smaller releases in a year, they do not have to depend on blockbusters, superstars or grand movie sets for delivering towards profit goals. If successful, we expect to see higher overall profits, generated by both blockbusters but also by small to mediumproductions.

References:

1. <http://www.theatlantic.com/sponsored/ibm-transformation-of-business/big-data-and-hollywood-a-love-story/277/>
2. <http://www.bbc.co.uk/news/business-35461075>
3. <http://www.psfk.com/2016/02/the-revenant-leonardo-dicaprio-emotion-tracking-lightwave.html>
4. <http://fivethirtyeight.com/features/fivethirtyeights-guide-to-predicting-the-oscars/>
5. <http://www.hollywoodreporter.com/news/google-unveils-model-predict-box-563660>
6. <http://www.nytimes.com/2013/05/06/business/media/solving-equation-of-a-hit-film-script-with-data.html>
7. <http://www.tintup.com/blog/movies-and-social-media-marketing-films-with-new-media/>

1. <http://www.theatlantic.com/entertainment/archive/2014/05/hollywoods-real-superhero-problem/370785/>

Notes:

1. Peter: be brief in presentation, only have 7 minutes in final
2. Eliminate at least 3 of the challenges on earlier slide
3. Focus on one challenge. We have 9 bullet points, reduce to one
4. Studios receive scripts (1000s of them) : How do you analyze and create a script profile
5. What data would you collect for an unsolicited script that comes in through the door?