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Using Analytics to Predict Hollywood Blockbusters

by Scott Schlesinger | 10:00 AM October 11, 2012

While summer blockbusters like *The Avengers* (<http://www.themarysue.com/avengers-final-take/>) and *The Dark Knight Rises* (<http://boxofficemojo.com/movies/?id=batman3.htm>) saw record highs, Hollywood recently set a new record — and not one the industry should be proud of. Disney's *John Carter* (<http://www.imdb.com/title/tt0401729/>), which cost close to \$275 million to produce, was tagged as a potentially huge, game-changing film. The marketing budget to cement that perception was nearly \$100 million, but the opening weekend not only missed financial expectations, it flat-lined (<http://www.hollywoodreporter.com/news/john-carter-cost-disney-millions-301704>). Disney admitted its studio would have an operating loss of \$80-\$120 million, making the film arguably the biggest flop of all time (<http://www.economist.com/blogs/prospero/2012/03/disneys-john-carter>).

Following in the formulaic footsteps of its big-budget predecessors, like the *Pirates of the Caribbean* (http://www.cnbc.com/id/40259653/The_Highest_Grossing_Movie_Franchises_of_All_Time?slide=11) franchise (http://www.cnbc.com/id/40259653/The_Highest_Grossing_Movie_Franchises_of_All_Time?slide=11), Disney surmised that the action-packed, special-effects-bedazzled *Carter* would kill at the box office (<http://latimesblogs.latimes.com/movies/2012/03/disney-john-carter-box-office-bomb.html>). It's a great example of how Hollywood has many a time relied on intuition and anecdotal historical data to gauge movie-goer preferences.

But recent advances in digital production and distribution (prompted by companies like Netflix, Hulu, and Redbox) have extended the overall productivity and reach of the film industry. The resulting spike in both supply and demand for movies has created fierce competition for financing. Clearly the thriving film market needs to shift to a culture that bases decisions on data — not gut checks.

The increasing availability of data coupled with the abundance of sophisticated technologies, tools, and applications give filmmakers an opportunity to improve decision making for better forecast revenue before a movie is released. Producers can have a mechanism in place to effectively predict profitability to secure investment capital. Investors can understand the economic consequences and break-even thresholds of films. Sales teams could be equipped with likely sales for a given film to sell appropriately. All of these aspects can be measured by analyzing many different variables such as genre, rating, cast

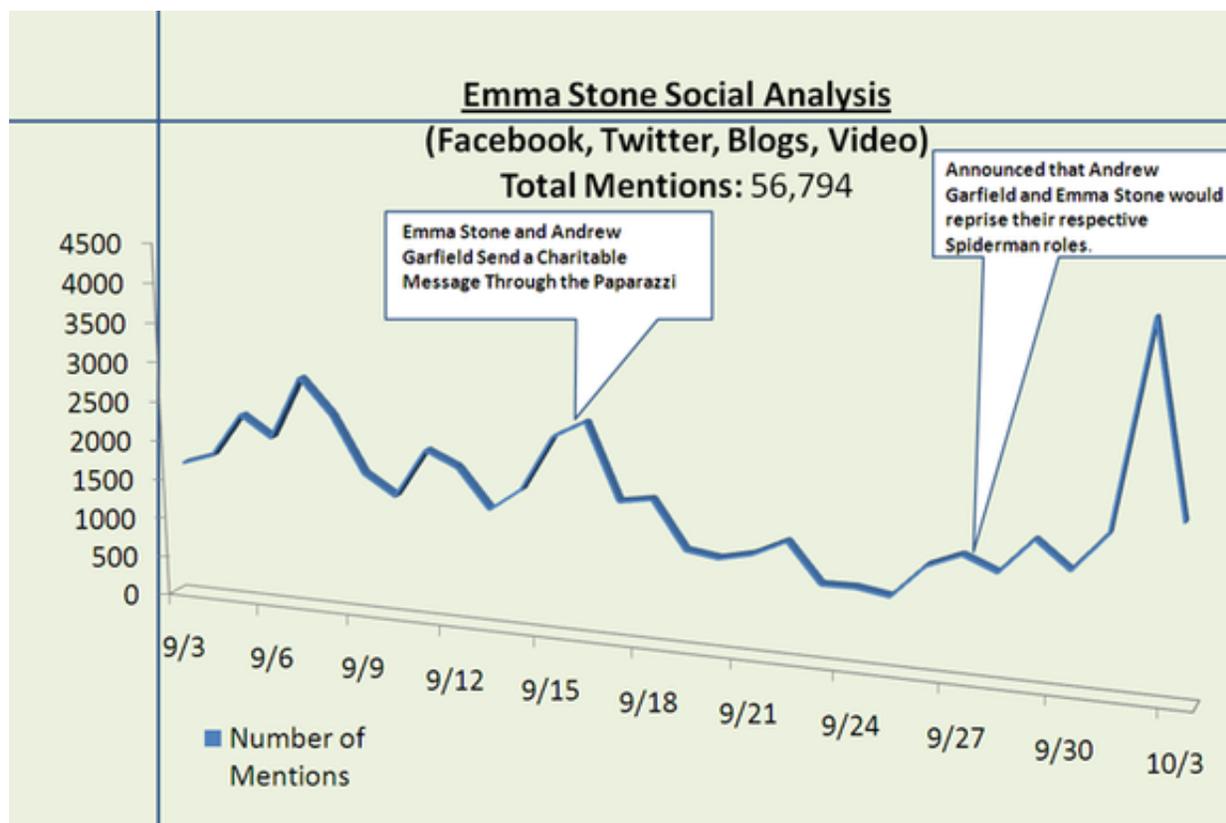
and release date.

Analytics allow studios to go beyond simple focus groups or established financial modeling to determine how audiences might respond to a given film. **It's all about identifying patterns in past data, melding them with current data points that are readily available, and then taking action to improve business performance.** To effectively leverage historical data, it is vital to look at the past performance of a large volume of films as the basis for revenue forecasts and in the development of any forward-looking financial plans for a particular film.

Further, it is important to base any analysis on an unbiased and robust assessment of factors (both quantitative and qualitative) that have been found to be statistically significant in predicting the economic performance of motion pictures. This could include anything from genre to budget, release date, release location, talent, type of marketing and amount of marketing spend, etc. Individually, they could all impact the revenue outcome — and influence each other.

Specifically, a studio might look at all action adventure films released in the two years that featured a star such as Emma Stone (<http://www.imdb.com/name/nm1297015/>) in a leading role, then sort these by release date/season, release location, and time to identify trends. Then, taking into account ancillary factors that have proven relevant to box office sales (such as weather, conflicting events such as sporting events, economic factors such as a recession, etc.), one can create a model that can help predict potential box office revenue based on historical data, current conditions, and social exposure.

Additionally, you could scrape data from social media commentary and reviews of previous films to compare actors, themes, genres, special effects, and current events. This might determine whether audiences have fatigue with an actor (such as Stone, as displayed below) over recent months or weeks, or whether a certain subject matter may fail to gain interest.



(http://blogs.hbr.org/cs/assets_c/2012/10/big_data_schlesinger-2491.html)

For a studio looking to reboot a franchise or remake a film that had potential but wasn't executed well (queue *John Carter*) this

would be highly recommended to help determine precisely how best to remake a film and what return you could expect to gain.

In the future, movie studios will find it a rarity to see their films labeled a "bust" on their quarterly sheet. Instead they'll have constructed the optimal "movie formula," a predictive model leveraging an array of analytics tools (and not solely social analytics tools) to predict revenue accurately and consistently. By planning releases in a more systemic way, predictive analytics will be considered just as important as the producer, director, and actor who make a film a blockbuster.

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