

Big Data: Frame the Cinema from Viewership to Projection

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Abstract

In these twenty years, every aspect of human life is all in great changes from social, cultural to technological. Science play key role with its innovative digital technologies which changes all the communicative mediums. These communicative mediums change consumer attitudes, consumption patterns and a consumer groups which effect on communication and entertainment industry. This paper gives a deep insight on the role of big data in film industry and especially how it can frame future of the industry. Globally, film industry has 103 bn dollar market in which value of Indian film industry has 182.2 bn INR. There are million people engaging in the industry and on other hand cinema is the most powerful medium of social change. Thus, it is clear how much it is important to understand all the phenomenon of film making to marketing and review to revenue.

In today's digital world, only big data encountered these challenges and plays constructive role in strategies making for the practitioners in the film industry of all aspects. In this explanatory research review literature is main mothed of collecting data as explanatory research is all about analysis exist literature. this paper analysis three prospective: big data, film industry and future.

First, It searches what is the big data in films, how does it collected and analyzed. There is discussion on constructive role of big data in film industry in which mapping big data functions into film industry in terms of film making and investing, publicity and distribution, film broadcasting and audience. Conclusion come out the big data provides quantitative basis and decision reference for the film industry which used and should be used wisely to create limitless revenue and make it social change stimulator.

INTRODUCTION

Cinema is an industrial art. It is like a coin which has two sides one artistic images and other side has value of coin in numeric or text same as cinema has two sides one its creative storytelling other side its commercial outlook. Both are interrelated. Thus, art and business both are essential aspect of cinema. It is art, by the people for the people. Direction, script, cinematography, chorography, acting, editing all are creative field of cinema but a film cannot be possible without producer, financiers, distributors, marketing network which are handle matters like budgets, planning, resources, broadcasting and its all others

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financial matters. Most special thing in cinema every single part in it has entrepreneur in itself.

Here between art and business, there is third aspect of cinema which is made a bridge and base for both, it is the technology. Technology is similar to the metal of a coin as coin cannot be possible without metal, cinema cannot be possible without technology. Camera, sets with lighting, filters, cranes and other, recordings, storage, editing software, projectors and broadcasting platforms, these all are technologies of creative side of filmmaking. As it change cinema also come in new way. On other side planning, budgets, resources management, marketing also has its own technology like budgeting software, resource management system and marketing tech such as media channels, internet, and social media other.

As before said technology makes a bridge between art and commerce, the one technology which makes really sense of it that is computer and internet, it is big data science. Now days, we can connect and collect information digitally anytime from everywhere to anywhere. This digital mechanism of information working as a personal communication medium to professional medium. This digital mechanism has enormous data which circulate and store globally in a second. Every click generates data. When a user clicks or do surfing on net or any other activity on computer or mobile that all are generate data saved by data providers and software companies. Terabytes of terabytes saved data have used to understand users' attitudes and attributes to promote the products or message. Today, this big data network used form planning to distribution in most of industries. Slowly and steadily film industry also starts exercise this big data from prototypes idea, planning, filmmaking, marketing to broadcasting. Big data entrepreneur companies provide these facilities to filmmakers.

Objective of Research

Main objective of this explanatory research is given deep insight in role of big data in film industry. Sub objectives of this study are found out the concept, process and future of big data in prospective of film industry.

Methodology

In this explanatory research review literature is main method of collecting data as explanatory research is all about analysis exist literature (questionPro.com, 2021). this paper analysis three prospective: big data, film industry and future. First, it searches what is the big data in films, how does it collected and analysed. There is discussion on constructive role of big data in film industry in which mapping big data functions into film industry in terms of film making and investing, publicity and distribution, film broadcasting and audience.

Film Industry and Big Data

Film industry has limitless possibilities in this big data world. In year 2018, world largest internet service provider Google publishes a report of a survey with Google search on big data and film industry. This survey took hundreds of film box office prediction model, including the search volume of movie, characteristics of the film box office prediction model, including the search volume of movie, characteristics of the film schedule and each type had index had numbers of sub indices. The survey proposed model enabled to predict a movie's box office result month before with 94% accuracy. Google's this initiative recommends optimize film marketing strategies by searching data. (Wang *et al*, 2016)

So big data, analytics and AI, one is digital technology, second is Human Intelligence and third is Artificial Intelligence, this trio are gradually changing filmmaking process with creating entrepreneur opportunities. Globally film industry has around 50-billion-dollar revenue in which America and Canada are largest network with 11.4 billion dollars in 2019, China has 9.6 billion dollar and India made highest number of films even then he is third on his revenue. It is clear that film industry invested immense money as other industries, but uncertainty and risk are very high in it. So it becomes necessity to adopt a system which can give some amount of surety.

Netflix, world known American-Canada, China and Netflix are prominent film industries, OTT and channel which use wisely big data especially Netflix



bring these trends with analysis its viewers flow on its shows. India makes largest number of films and it is third largest market in the world however India still far away from deep and widely use of big data science. Here we can take example of Netflix which access user data to generate more viewership and profit. It keeps eyes on consumer behaviour, what audiences are watching, how long they are watching, when they are watching, and how often they are watching. This big data system is the reason behind the Netflix air most of the horror, crime, suspense, and thriller shows like Games of thorn, sacred games, Delhi Crime, etc.

A film has three parts: pre-production, production and post production. Pre-production include Script, budgeting, casting, location finalize, set designing, date, work permissions and all decision-making face when all things are decided then production will be start. After the production face most important phase comes that is post production which includes editing, marketing and distributions of film. To understand the role of big data in film industry first should know about big data in movies point of views.

BIG DATA

Big data system is process of collection, analysis and present to help in planning, filmmaking, and marketing. Doug laney define big data as three Vs: Volume, Velocity and Varsity (Shukha *et al*, 2015). These three Vs develop in four and many according to researcher's perspective. When we talk about big data there should have four V characteristics which make data more valuable as their scales are high Volume, Velocity, Variety and Veracity.

Analysis Prospective Techniques

Debbie Stephenson write about big data analysis prospective to get valuable insight and answer from data in its blog '7 Big Data Techniques That Create Business Value' (retrieved, 2020). These analysis prospective techniques can map viewers' interest, desires, sentiments and new viewers. These analysis techniques are association rule learning, classification tree analysis, genetic algorithms, machine learning, regression analysis, sentiment analysis, social network analysis.

Variables of Film Industry

Big data analytics is the art or science of using sophisticated computer software to identify patterns in large datasets. (largofilms, 2019) Here first we look at big data variables' matrix of bollynalyticism. Data of these variables are collected, analysed, and find their correlations. In film data mechanism it divided in two parts one is related to content and second one is related to users' attitudes matrix. So, six film content elements' variables are:

Story

It is most important variable to understand which type of movies liked or not and why. We can't forget that cinema is a business for producer and distributors and all so there should be data which gives clear picture which story gives profit or not. Netflix OTT is good example for use of big data in chooses a story. As Netflix use viewing data and it most of the web series are suspense, action and sexual.

Image

Image is very important element to attract public. Every actor, director, music composer, dancer and other artist has their particular image in public through big data producers acknowledge it and use it in upcoming movie. They try not to make mistaken to use an artist if he or she able to do job.

Director

Cinema is an art of director who has its thought on film as auteur theory said director is the film. What the public thoughts for director must be know, it help in planning and making as every director has his/her own style.

Performance

Acting is one thing which make story more influential, real, and heart touching. A movie is nothing without good acting. Today, OTT platforms bring new concepts stories which needs real and natural acting not over dramatic acting. So performance is all about reorganization. Rajkumar Roa, Viky Koshal, Kangna Ranawat, Tabsi Pannu and more names are making their stardom on own performance and people wait for their movies.

Sound

Music, songs and sound effect create viewers' interest in films. Some films are known for its sound and music such as 'Gang of Vasyapur', 'Gost Story' and more. In big data analysis sound mapping is important because today sound craft create emotional bounding with viewers. If it can map out what type of sound and in what limit is sound and music should used.

Visuals

Cinema is all about visuals, what is camera recorded and what is projected on screen! Every single shot and sequence make a mark on viewer's mind and heart. There should be track visuals which give public interested visuals and they want some kind of them in most of the movies.

There are users' attitude analysis variables are:

User basic characteristic data

User basic data are related to user's gender, education, rural or urban, like or dislike.

User social generated data

Internet gives public a platform where they publish, upload videos-audios, recordings, blogging, vlogs, and more. This called user social generated data and it represent users interest and attributes.

Use online interactive data

Internet user do many activity online like search, downloads, watching videos, listen, share, likes, open sites, spend time on them, and many more. During all these activities every click generated data and this is very useful to understand user behaviour. This data can be predicted which type's films are he or she like what their needs.

User consumption recorded data

How much data use in a day, where it use most or less like either in search, reading, or video and others? This consumption recorded data is mapping data preference and consumption hierarchic.

User web public data

It means information in the public domain, encompassing anything from a monthly updating dataset on a government data is user web public

data. It gives user personal information which is public.

User offline behaviour data

When user works or does any activity without internet on computer or mobile it keeps save in software or app itself. This offline data gives a user activity.

User location data

We can see user location data in Google news which shows news nearby your location. It represent user region and this data useful in marketing to attract viewers cultural, social and surroundings.

Tools of Data Collection of Film Industry

Social Media

Millions of millions people use social media for like, dislike, share and comment of several unknowingly posts. Facebook, YouTube, twitter, tiktok, likee, whatsapp and more social media platforms save user activity data which they use to promote products or movies.

Online Portal

Online portal keep all information how many users come on site, how much time they spend, which page and content they look and share, and more.

Net surfing data

When a user search about a film or actor-actress or others net browsers such as Google, yahoo, rediff or others collect and save this user activity data. This collective data map out what people search as which topic or actor actress search most, which films or trailers search and in which context and more...

Viewership

Cinema hall, OTT platforms and youtube are keep all viewership data like how fast which show get most viewership, which types show or film have most viewership, and more. "If you select a particular movie on the short film platform Sofy.tv, then the platform will open the webpage where you can view the movie. However, this is not all the platform



does with this data. It also records your choice and uses its sophisticated movie recommendation AI system to interpret your selection and thereby improve the movies that you are recommended in the future”(largofilms, 2019).

Previous film viewership and their characteristics

Previous viewership and their characteristic data play a vital role in prediction for a new show or movies.

Survey

There are many surveys conducted by productions, distributors, social networking sites and others on film industry. Big data analyst can use primarily or secondary source for prediction.

BIG DATA IN FILM INDUSTRY

After the understand the variables and tool of data collection of film big data analysis now we should look the way it uses in film industry from planning to distribution of a film. Frankie Wallace wrote role of big data in his blog that “There are countless factors at play in filmmaking, from determining production costs to developing targeted marketing campaigns. Data science is involved in practically every step of the process, and professionals who work in data science can learn many things from the film industryproduction companies will continue to use the technology to better understand individual viewing habits and preferences to create content that appeals to the masses(Frankie Wallace, July 2019).

Big Data in Film Investing

Public opinion is the base of investment in film industry. What is the public opinion for a film, what is the image of an actor-actress, which are stories and scene attract public and other more opinion play vital part in planning and investing of a film. It works on Script and actors selection, film shooting and the post producing, providing and effective decision making method. Big data provide target audience characteristics such as gender, age and regional distribution, the analogy finds out whether audience are interested in the film content and main performers and digs out their expected

director and favourite actors can be conducted, which provides accurate, scientific, and quantitative recommendations for the decision making of film producers and investment companies.

The data players insist they are not trying to displace traditional industry assets such as experience and gut instinct. “Analytics is just another tool,” says Dimitrios Mitsinikos, the former Universal Pictures vice president, international research, co-founded Gower Street. “The decision-makers are the decision-makers and the better tools they have, the better decisions they’ll make Instinct is basically experienced built on data. From our own experience, machine-learning systems can actually beat gut feeling.” (John Hazelton,16 June 2016)

Today a film announces on social media platform and investors, or planners sharply keep observing on what comments are, how many likes and shares are there happened. It all predicts what will the future of that film, public excited or not. One more important observation how fast film announcement got attention and how much. Like actor Salman Khan post his film ‘Radhe’ first look which got huge response in a while same as film director producer Karan Johar released ‘Takhat’ poster which also got good response on social media.

Film Making

Film making is a creative process. Director has command of film making. This creative process is divided in three parts; pre-production, production, post-production. Plot, script writing, casting, location and set designing these are come in pre-production and shooting on location comes in production part. Last one post-production is working on editing and special effect. Big data generated based on the six variables of content of film, are use in film making process.

Baptiste Charles wrote in his blog on content data that “Not only do they know how you’re going to watch the content, and what content is best for your tastes, they also know that you get bored within 90 seconds of scrolling through the menu, and that certain films are only meant to be watched up to 70% because they are just too scary to finish. But once they know what the audience looks for in content, they can order or buy films and series

that push just the right buttons, and know which audience members to push those to.”(Baptiste Charles, 19 June 2018)

There are some movies which are fully dedicated to creativity and artistic values but cinema is an industrial art so profit implied itself in it. Here public opinion become central point around which whole movie knitted. Public opinion always an important for generate revenue. There is a history of scenes, sequence, actions and dialogues in films according to public opinion or demands. Like K.L. Sahagal should had songs, Dharmendra should have action scene and dialogue “kutte tera khun pi jaunga”, Nirupama Rao should was Amitabh Bachchan mother, Imaran Hasmi should have kissing scene, Nana Patikar should have dialogues, film ‘Khuda Gawaha’ changed Amitabh Bachchan death sequence, and there are more example of it.

Today, dig data can help objectively and clearly to mapping out viewers’ interest and changing attributes’ according to today’s social, cultural, economical, and political scenario. So director and producer can use big data as a guideline from script writing to special effects.

Publicity and Marketing

Publicity and marketing, these two have similar field of work but different concept and way of working. Publicity is unpaid, unauthorised with third party involve process of film promotion in public on other side marketing is authorised, paid and direct approach process of promotion of a film in public domain. These two are purely depends on viewers, media and advertisement’s data and figures. Here big data works remarkable as it objectively and clearly mapping out all about viewers attributes, media consumption and effective advertising.

Recently Walt Disney Company chairman Bob Iger made an admission. “We don’t have any idea who went to see Star Wars in the cinemas,” (John Hazelton, 16 June 2016) big data can help in this scenario as it already mapped out audience mind set which audience like to watch which film. As marketing data analyst Movio said “We pull through all the data that relates to a loyalty transaction — that they are, how old they are, how many tickets they bought, the genre of the film,” explains Movio

founder and CEO William Palmer. “Once we’ve got this ID, we tie that to all their web activity — when they click on a link in any of the cinema’s websites, their e-mail activity, social activity, if they’re on Facebook or Twitter — so that the profile gets richer (John Hazelton,16 June 2016).

In big data era, now it can be possible focused publicity and marketing strategies according to gender, age group, generation specified, socio-cultural-economical class, viewers’ psychology and place. That is reason today most of the films take care of their marketing which can generate good profit specially

Distribution

A good publicity and marketing attract not only public but also distributors. Big data is very important for distributors as they have to calculate viewers’ pattern of consumption according to cities and social-economical condition. They decide price of a ticket, no. of screen according to city (John Hazelton, 2016).

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John Hazelton gave example of this work on his blog that “New data outfit Gower Street Analytics is working in partnership with comScore on the development of Forecast, a release date optimisation tool that will predict the performance, down to the individual cinema level, of every film in a given national market for the next 12 to 18 months (John Hazelton, 2016).

Broadcasting

Today there are two platforms for broadcasting one is traditional television and second is OTT steaming platforms. Production Company looks at big data for decision which channel and OTT platform suitable and profitable for us or which



channel or OTT's air timing and day is attract more viewership.

Randy Greenberg, a former head of Universal Pictures' international theatrical division, remarks: "Data is not going to solve every issue, but it might help film marketers. get smarter in how and where they buy media in an increasingly fragmented entertainment universe. In the end, that might be enough to make studios, as well as exhibitors and other theatrical players, wake up to the force of Big Data" (John Hazelton, 2016).

THE IMPACT OF BIG DATA ON MOVIE AUDIENCES

There are two effects on audiences one is positive and second is negative. As earlier we read, big data generated by people own self and it represent viewers' interest and attributes. If movies made and marketed on the bases of big data analysis then it surely appreciated by public and it give every element which a viewer like to watch. These big data analysis movies' marketing strategies are very sensible towards public sentiments. These marketing strategies are touch viewers' heart and mind. Thus, it become natural that viewer feel attached to movie and imbibes all the message of films. This imbibing of movies is very misguided side on viewers as some time viewers does not concern what is right what is not, he or she imbibe all the message and actions directly or indirectly.

Big data analysis is mapping in this fine way that visuals easily effect viewer mind especially when all content inspired by same idea as people choice. Like today most of movies have thrill, crime, suspense and horror based. Another question is rise about content or theme. If movies are just made on the base of big data it can be similar in particular period of time like these days Netflix which totally depends on big data, steaming most of shows and movies on crime, thrill, suspense and horror with extreme violence and sexuality. This visualization is not

good for children and some other class of society. Violence and sexuality are in trends which not good for society as it raises cases of crime against women and children. So there should be a concern on what we present what is limitation should be.

CONCLUSION

Indian film industry is world largest industry with more than 1200 films per year. Like Hollywood where big data used heavily from investment, planning to distribution but in Indian film industry is still untapped for this deep use of big data analysis even then it is prime source of income for big data analysts here. In recent year Netflix, Zee5, Amazon Prime and others OTT platforms bring their web series with mainstream Indian cinema's actor and actress even some movies also release on it especially during COVID 19 disease which changes attitudes and attributes of viewership. These platforms create the trend of big data analysis in India too. Some Experts Data miners are comScore, Gower Street Analytics, Movio, Showtime Analytics and IMDb.

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