

Research on the Impact Value of Big Data Technology on the Development of Film Industry

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Abstract: As an intellectual-intensive industry, film and television creation is a key link in the film industry. The integration of film and television creation and big data can establish a user preference model, directly attack the marketing focus and occupy the commanding heights of profit. Today's film and television productions all use big data to avoid risks. Why is the film market going down instead? This paper discusses the impact of big data application on the value of the film industry at the moment when the big data infrastructure and technology are not yet fully formed.

Keywords: Big data, Industrial system, Artistic value, Content creation, Commercial value.

1. Introduction

American scholar David Finreb pointed out in Cloud Map of BigData that big data has become the most basic data form in the current society. Big data and cloud computing have more and more broad application prospects, which not only save a lot of time and energy for users, but also provide support for enterprise decision-making. The film industry has benefited from the big entertainment industry in the "demographic dividend" 2.0 era, and is becoming one of the few bright spots in the background of the decline of China's real economy. The characteristics of this industry are: the market is fully open, the business atmosphere is strong, and private financial capital acts as the main force in the industry. The role of big data in the film industry involves two key points: first, the discovery of film industry patterns and laws; The second is the prediction and analysis of future trends. For example, the "Movie Box Office Prediction Model" launched by Google can determine the box office data of the movie in the first weekend and the next weekend according to the search of the movie by users, and its accuracy rate is as high as 94%.

2. Big Data Helps Realize the Commercial Value of Movies

China's film industry is still in the stage of extensive operation, the operation of each link in the industrial chain is not professional enough, and the capital outside the circle is invested in the film industry with the tide. In this case, data analysis is conducive to enhancing the professionalism and scientificity of the film industry and the production level of the film industry.

Generally speaking, first of all, big data is close to the standardized production of the film industry. Big data seems chaotic and irrelevant to each other[1]. However, with the advent of the Internet era, every user's disorderly visits and selective clicks have become everyone's preference map under the calculation of big data. The same is true of movies. Looking at American hero movies and popcorn movies that swept the box office, most of them follow Sidfield's "three-act architecture", that is, the film allocation time is 4/1-2/1-4/1. Through the calculation of big data, movie producers can roughly set out according to the audience's psychology and

preferences: What way should the protagonist appear? What kind of character does the audience like to see? Where should the most exciting plot point be arranged? What is the interval between two climax plots? To what extent are scenes of drama and war acceptable to the audience? Where should the turning point be designed? Do viewers like faster or slower editing rhythm? All these questions can be answered with a relatively satisfactory answer through data[2]. Why the BBC documentary enjoys a high reputation in the world. Because BBC movies have their standard production process. Documentaries such as "The Earth Pulses" and "Africa" are produced in strict accordance with the standard process of "the 8-minute law". The 50-minute documentary tells 7 stories to avoid the audience's fatigue period for visual products. China 2 on the Tip of the Tongue draws lessons from the "8-minute rule" of BBC industrial production, and formulates its own production process according to the data. However, it's worth noting that successful programs don't only depend on the digital production process, but this is just one of the ways for the success of BBC's excellent films and China on the tip of the tongue[3]. The reason why these excellent film and television works have a good reputation and profit is mainly because of the strong excellent content. Big data can be used to calculate which stars have the most box office appeal, which type of films are most suitable for the audience and which time period has the highest attendance rate, but good content can't completely rely on big data[4].

Big data opens a new path of audience interaction and participation. In a sense, big data makes it possible for thousands of people to write a script. The direction of the script, the director's control, the camera angle, and the actor's personality will even have a new direction because of the change of the data. This is undoubtedly a brand-new audience interaction and participation. The content of the film is nothing more than story theme, film type, director's style, actor's role, sound content, editing art, etc. After the summary of big data, the audience's preference will be integrated into the whole production system. Many successful cases mentioned above are successful after collecting, analyzing and trial and error of audience preference data. The mode of shooting and broadcasting Korean dramas is to better collect audience data, so as to make better use of feedback to correct its own content trend; The death of the protagonist in the American drama Prison Break is also due to the tendency of

audience to the protagonist's life and death and the public opinion which finally influenced the producers. Another example is MAX's character in *Broke Sisters*, which is constantly revised and formed after counting audience feedback data and public opinion data. Let the data audience and producer no longer have a one-way relationship, and let the feedback no longer be so weak[5]. Secondly, big data provides a precise breakthrough point for the promotion of the film. For example, the audience distribution group of "Little Times" is inclined to second-and third-tier cities, and the audience popularity in the northern and northern areas is low. This audience's viewing preference in different regions is also conducive to the film side to formulate accurate publicity strategies.

3. Big Data Can't Guarantee the Artistic Value of Movies

When all industries develop to a certain height, they will inevitably become the product of capital operation. Even if the data is true and the technology is perfect, the particularity of literary works will affect the effectiveness of big data tools, and "bad films with high box office" can be found everywhere in the film market. For example, the reflection and taste of history, humanities and emotions in *Return* cannot be measured by big data[6].

First, big data is more conceptual than practical. Although more and more professional film and television big data websites have started to vertically subdivide in this industry (such as Aiman, Yien, Cat's Eye, etc.), compared with other industries, the big data system of film industry is still far from perfect. There is still a lack of theoretical research on big data of film and television creation in China. Most of them are analysis of examples, lacking systematic theory with guiding significance[7]. Classifying and analyzing hundreds of millions of big data to get rules is not a workload that ordinary computers can accomplish. This requires excellent data analysts who know both movies and big data to evaluate and expand storage equipment procurement, network resources and machine computing capabilities. Finally, there is a lack of transparent public data platform in China. Wanda, Tencent and LeTV all have their own databases, but in order to monopolize resources, they will not share them with competitors, but take their databases as one of their core competitiveness. Therefore, the sample of a company's big data is not representative of the whole industry, and there are still some deviations[8].

Second, the fake box office leads to the deviation of big data. There will be moisture in the data of any industry, and even many national economic statistics may not be true. There is a lot of water in the traffic of the website and the box office data of the cinema, and the network is full of water army teams and gunmen teams, who post, attack, slander and reprint the film after it is released for the sake of creating momentum or competition. Therefore, the accuracy of the data analysis obtained needs to be verified. For example, the most basic movie box office, in the box office of a movie, what proportion does the audience actually buy? What is the proportion of the producer's ticket payment through the Internet? These are difficult to make detailed statistics[9].

Third, the artistic value of movies is easily kidnapped by commercial value. For the investors of movies, of course, they hope that every movie they invest in can get a good box office income. Therefore, investors hope to reduce their investment

risks through big data analysis. In a society oriented to commercial interests, investors can't get the opportunity to shoot many valuable works in order to avoid risks, because no investors are willing to invest money in shooting. In the final analysis, film is an art, but art must have artistic value and cannot be kidnapped by commercial interests. Therefore, the ultimate goal of shooting a film and television work should be a work with artistic value that the audience likes. Fourth, big data limits the space for film and television creation. Nowadays, many film and television industry workers think that all problems can be solved with the concept of "big data". I hope it can be pushed back from the market side to the creative side, and the audience feedback can be directly judged from simple Internet data. However, audience data is not omnipotent[10]. At present, there are still many problems in the application of big data in film and television creation. There are great limitations in evaluating film and television works only by market, ratings and box office. Under the background of big data, film creators use the box office appealing elements counted by data to guide their creation, which undoubtedly fetters the imagination of film and television people. The process of human creation has a natural basis, and no matter how sophisticated the instrument is, it can't be calculated accurately[11].

4. Big Data, As A New Film Language, Constructs The Film Content

The emergence of big data labels everything in the form of data, which makes movies with everything as the material and people as the standard become a real and unique language. In essence, big data is also a language, and data has the characteristics of signifier and signified. Different from common languages, big data can not only construct the meaning by optimizing the combination of data, but also discover the organization rules of language by analyzing and summarizing the language elements represented by data. Therefore, using its own language characteristics, the construction of movie content by big data mainly exists in two levels: vertical corpus and horizontal language system.

4.1. Big data as a symbol refines the film corpus

Movie corpus is a database system composed of the basic elements of movies. Big data "digitalizes, digitizes, and variates various movie elements, and then by measuring these variables, we can extract quantitative information, and get the description of this variable and the analysis of the variable relationship", thus forming the digitized symbols about these basic movie elements. Movies come from social life, and big data digitalizes social life, completing the digitalized analysis of a large number of movie elements, eliminating the complexity and simplifying it, and mining materials more suitable for movie performance, thus making the content of movie corpus accurate.

At the level of drama, it is mainly composed of background, time, place, characters, theme and plot elements. Historical and current social news events, hot topics, touching stories, novels, animations, dramas and other literary works are the main sources. At the modeling level, for the modeling elements composed of figures, light and shadow, color, sound effects, lenses, etc., the specific sources involve fashion, photography, music, painting and other fields. The digitization of these elements depends not only on the basic

content of their performance, but also on the emotions, thoughts and values hidden under the content.

At the same time, these element data are often not presented in an intuitive form, and they are all over the public's social behaviors such as browsing, watching, commenting, forwarding, searching and buying, and most of them exist in the form of leaderboards. Through the classification, aggregation and tracking of these data, it is not only beyond the limit of traditional film material accumulation, but also provides a lot of material resources for film creation. At the same time, through the analysis of the data of different elements changing with time, it can accurately discover the law of the rise, decline and change of a certain element and predict the development trend of future film elements, which not only provides accurate film materials for film corpus, but also provides decision support for the selection of a certain film element.

4.2. Big data as a methodological tool to mine the film language system

Big data can complete the deep and intensive discovery of the relationship between infinite possible movie elements, which involves the organizing principles, ways and characteristics of all elements in movie plays and movie modeling, and the resulting movie construction law, that is, the language system of movies. As a methodological tool, big data is "the fourth paradigm of scientific research-data-intensive scientific discovery" after the three paradigms of scientific experiment, theoretical deduction and computer simulation. It can make use of its own advantages, combine the characteristics of the film itself, the target audience and environmental factors, and complete the excavation of the film language system.

First of all, in the research content, big data takes movies as the research object, integrates massive information through real-time monitoring, measurement and storage, induces and establishes a model, and discovers the relationship between data. It includes the digitization of plot elements at the drama level. For example, the movie plays are split by plot to show the purpose, obstacles and actions of the characters, and identify the value dimension and emotional dimension orientation of each plot, thus forming a large number of plot element data with actions and meanings; At the level of film modeling, we can take a single picture as the research object, and collect the figures, colors, lights, shots, special effects, sounds and so on in a digital way, so as to form a data map of the film picture in a certain dimension. At the same time, interactive research is conducted at two levels, and the interdependence among plays, pictures and audiences is found. For example, Shanghai Film Academy carried out team research on film content data, collected film picture data by manual and computer automatic generation, and found the corresponding relationship between film color rhythm, picture complexity, picture shape, change of dialogue position and plays.

Secondly, in the research thinking, reductionism and holism are used simultaneously. "Big data, as the fourth paradigm, has moved towards the integrity of analysis, realizing the integration of reductionism and holism". For the study of film language system, on the one hand, from the perspective of reductionism, we should disassemble the whole film in a structured way, from the basic elements of the film to the statements, paragraphs, sequences and chapters of the film, and go deep into the expression level of the film's

thoughts, emotions and artistic conception, so as to complete the construction of film language system. On the other hand, from the perspective of holism, on the premise of not deconstructing the whole film, we can find the correlation between different elements in the input and output of the film, so as to reveal the internal structure and mechanism of the film.

In addition, the use of big data to reveal the inherent laws of film language system must be guided by relevant theories. The semiotic theories of Max, pasolini, Echo, Bobok's film element theory, and even related theories of mythology provide the basis for film element data collection, classification, and natural language processing for film classification, element aggregation, and semantic definition. Communication, psychology, phenomenology and other related theories provide theoretical support for discovering internal causality and inevitability through the correlation between data.

5. Concluding Remarks

Big data plays an irreplaceable role in speculating the subject matter, locking the audience, accurate marketing, obtaining feedback, creating explosive points, etc. It can help us find relative certainty in this uncertain market. But at the same time, big data is only one of the ways for the success of movies, and it can't be the decisive factor. Relying on big data blindly will destroy the artistry of movies. Therefore, it is not necessary to regard big data as the myth of the core driving force of movies, let alone put the cart before the horse and use technology to overwhelm skills. Big data may lead to commercial success, but it may not necessarily lead to well-received movies. The past data may determine the future of the film market, but it cannot.

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