

Analysis and Visualization of Streaming Media Platforms Based on the R Language——Take Netflix as An Example

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Abstract. [Objective] This paper aims at finding the business content provided by Netflix through data analysis and discovering the conditions of the industry. [Methods] Netflix is selected as representatives of video platforms. R language is the core tool used for data analyzing to show various characteristics in content provision. [Results] Today's streaming media technology continues to develop rapidly, and many streaming media platforms focus on the richness of content. [Conclusion] Mastering the content of resources helps to achieve a more accurate recommendation, so as to retain users, and it can also be a reference for the development of streaming media in China.

Keywords: Netflix, Visualization, Content analysis.

1. Introduction

Streaming media refers to a technology and process of compressing a series of media data, sending data in segments through the Internet, and instantly transmitting video and audio on the Internet for viewing. Streaming media is not a new media, but refers to a new media transmission method, which includes the transmission of sound stream, video stream, text stream, image stream, animation stream and so on. As an emerging trend, streaming media broke away from the constraints of long term and high cost in traditional cinema industry. In recent years, especially under the influence of the COVID-19 pandemic, there is a shift from cinema to streaming media. [1]

Some data shows that the demand for streaming media is growing during the epidemic, and the developing trend of streaming media platforms is accelerating, which brings unlimited possibilities for the current change and progress of streaming media. This article selects foreign video streaming media Netflix as representatives, and presents the performance of the platform by analyzing the data.

2. Background

Currently, video platform and audio platform are two main kinds of streaming media used by the public. As for the video platforms, Netflix and Amazon Prime Instant Video are two biggest giants. While Amazon took superiority in its best cloud service, Netflix won by its first-mover advantage in the field. As the first online streaming media website established in the United States, Netflix has finally won a large number of users, as well as the recognition and acceptance of the film industry after constantly transforming. Three quarters of Netflix's stream recommendations come from machine algorithms that capture a variety of user behaviors, including opening time, geographic location, TV model and others, meanwhile it will profile users' image based on their registration information. In addition, due to the impact of the epidemic, video streaming platforms have become beneficiaries who have gained a large number of user increases. As you can see from the fig1, Netflix is growing faster with the booming growth of steaming media, with close to 4,000 movies and over 1,000 TV shows available on Netflix by 2020, with the number of movies starting to grow exponentially after 2016.

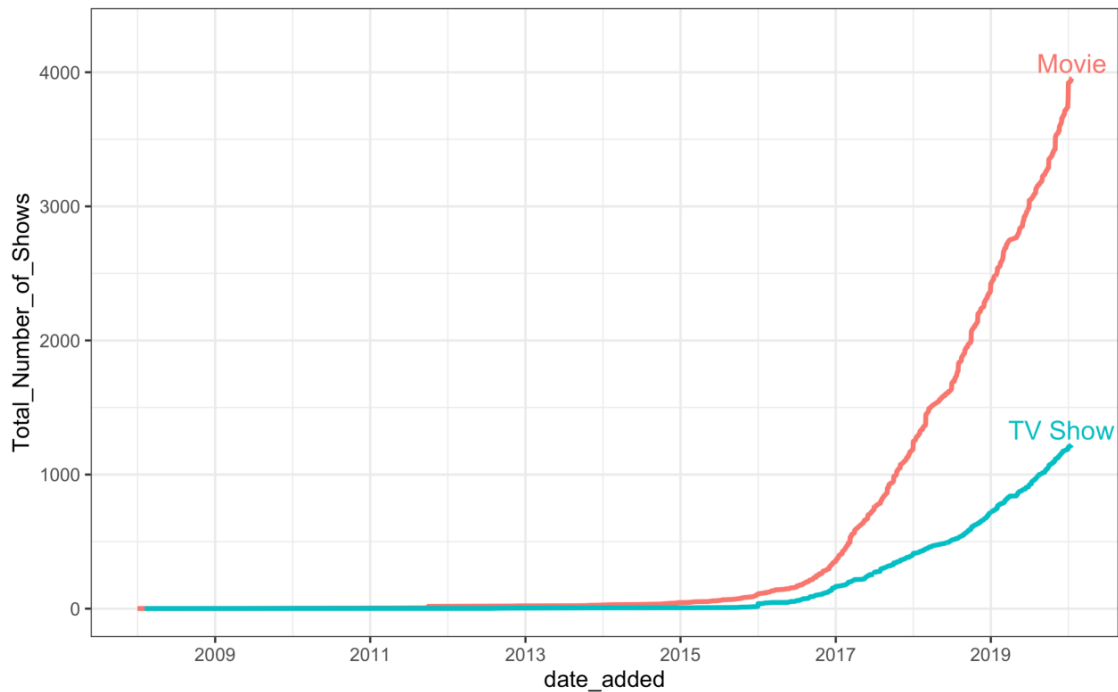


Figure 1. The Total Number of Shows

3. Analysis

The data used in this article comes from the kaggle public dataset.

Netflix's streaming platform has the best film and TV series content. Netflix has significantly affected the industry's value chain [2], and it has found a perfect balance between the quantity and quality of content.

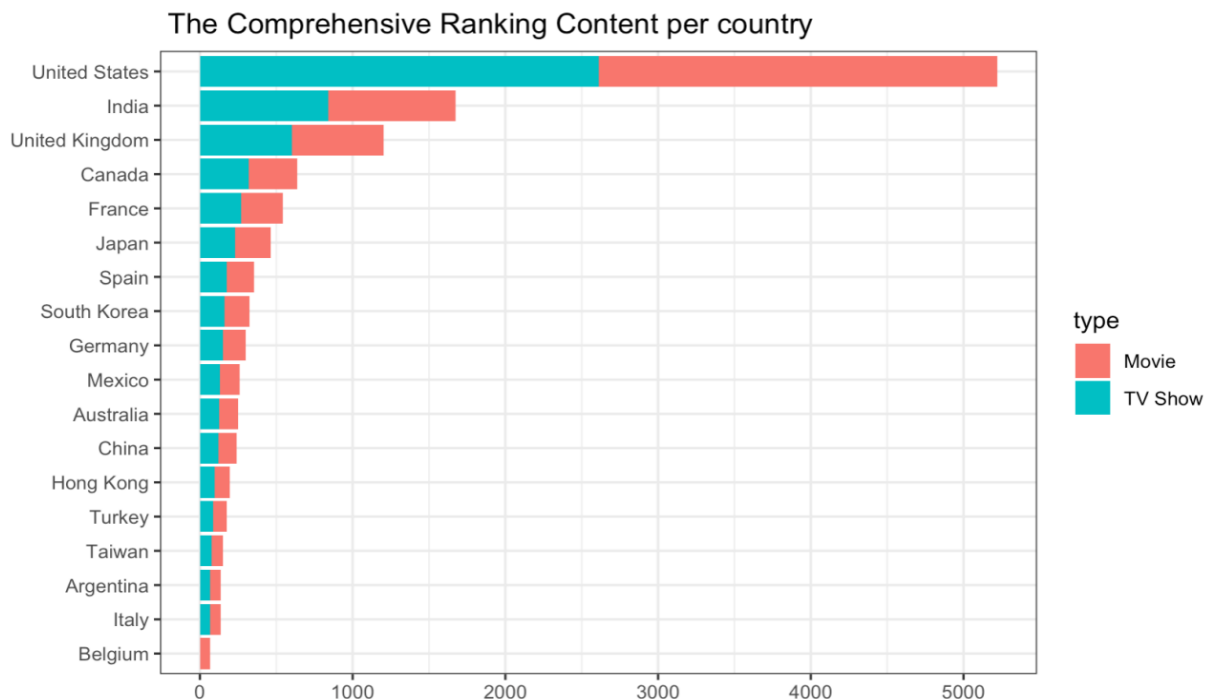


Figure 2. The Comprehensive Ranking Content per country

In the research report released by Netflix, the following points are the key contents: films and television works from the United States obtain the majority of Netflix's content, and the proportion

of TV series and movies in other countries in Netflix is relatively average, which reflects the cultural inclusiveness of Netflix and highlights the importance of diversity in the content of the website.

Netflix announced its age rating system to be employed in more content in the Great Britain since collaboration established with the British Board of Film Classification (BBFC). The purpose is to protect children and teenagers.[3] Netflix strictly rating and supervising its content in order to present appropriate content for users.

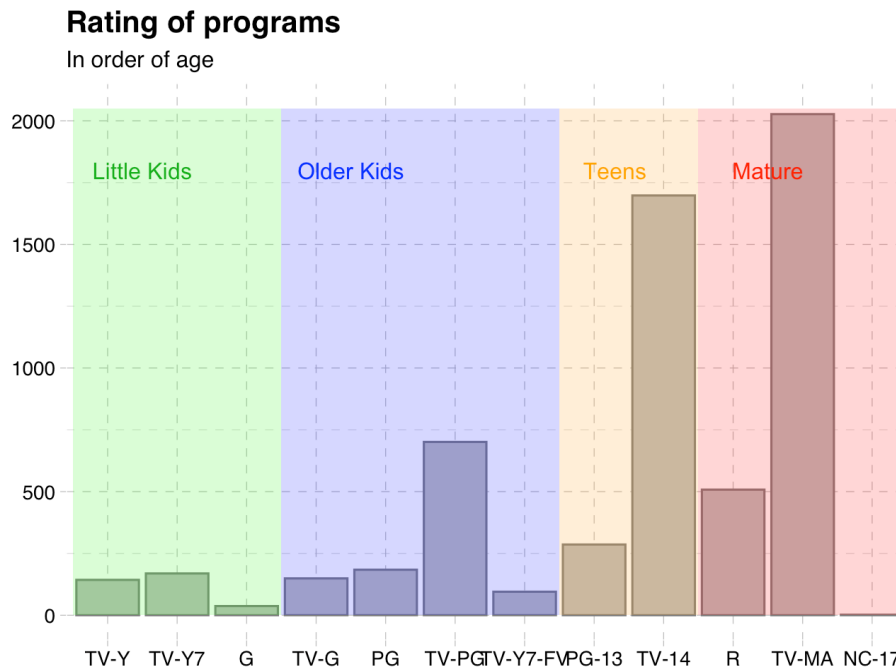


Figure 3. The Rating of programs

Netflix mainly provides the content of movies and TV programs. Besides the successful application of big data, there is a change of Netflix's attitude from "broadcasting platform" to "content producer". Moreover, the content layout of video websites is playing a role. [4] Netflix takes "original content provider" as its vision, following the path of providing original and exclusive content, and constantly developing new business models for film and television production, so that its user scale has surpassed other platforms and continues to rise. At present, the number of Internet clicks on major streaming media and other video websites is seriously polarized. If the content does not attract users, basically no one will watch the video; on the contrary, the higher the number of clicks, the easier it is to get more clicks. From the correlation analysis of the categories of movies and TV programs provided by Netflix, it can be concluded that on the Netflix platform, the correlation of internationalized content and TV series is the highest, whether in movies or TV programs.

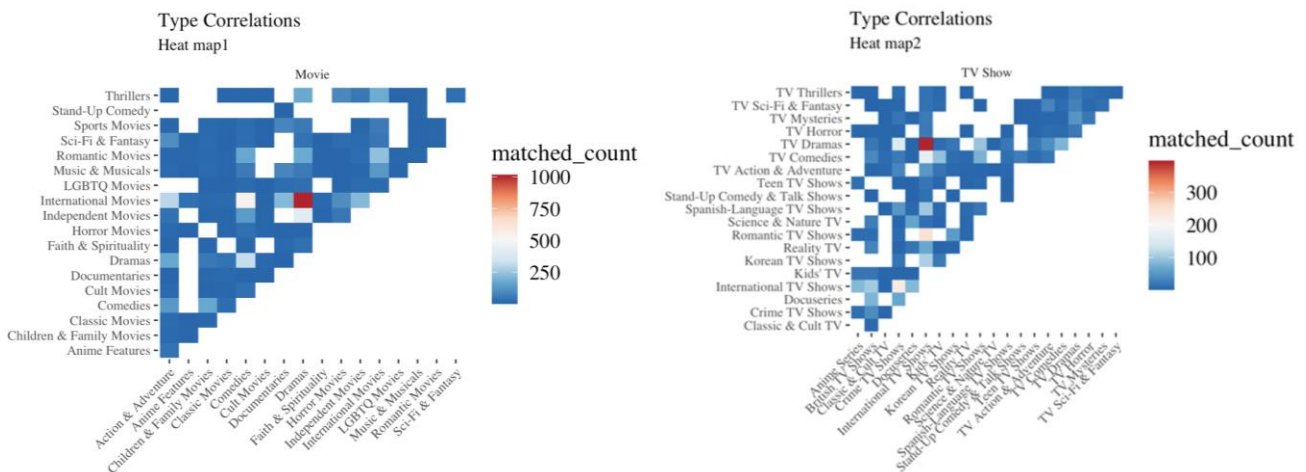


Figure 4. Correlations of Movies and TV Shows

4. Summary

This paper analyzed Netflix's content from the aspects of content and quantity based on Netflix's data. As a multinational platform providing multilingual services, Netflix achieved "different content in different areas at one website" supported by its big data technology. Moreover, the richness of internationalized content is kept while the majority content are still American films and dramas. Besides, its accurate rating system on content can protect the benefits of creators and viewers as well as promote the normalization of the online video creating industry. [5] It can also be found in the research that movies and TV programs are highly correlated in streaming media, which is naturally associated with the openness and free environment of the drama industry.

The research on Netflix's content from a new angle may give our domestic streaming media platform some advices on future improvement, and help deepen our comprehension about the development of domestic streaming media. Domestic streaming media manufacturers are immersed in the comfortable circle. How to build local IP into overseas popular IP and open up the content road for Chinese film and television in the world---- Netflix's high investment, high concept and high local model may be a considerable example. [6] As a content provider, the platform should pay attention to the transformation from content to IP, so that its business value can be realized. [7] Domestic platforms are also in need of an appropriate rating system combined with the country's situation, taking overseas platforms as some examples, so that online video industry can grow in a healthy environment.

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