

# Digital Transformation in Film and TV: Case Studies on Big Data, AI, and Cloud Computing

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## ABSTRACT

In the context of Internet Plus, the film and television industry is facing an urgent need for digital transformation, and it is urgent to respond to market competition and personalized user needs through information technology. This study adopted a multi case study method, taking Yaoxing Film and Television, Warner Bros., and The Wandering Earth film as research objects, to systematically explore the application path and effectiveness of big data and artificial intelligence in content recommendation, marketing optimization, and intelligent creation. Research has shown that information technology has significant value in improving efficiency and market response speed. For managers, the key lies in building a data-driven decision-making mechanism that covers the entire chain, achieving a closed loop of data collection, analysis, and application, and providing replicable technological paths and management paradigms for the digital transformation of film and television companies, especially small and medium-sized institutions.

## KEYWORDS:

Internet Plus, Film and Television Industry, Innovation-Driven Development

## INTRODUCTION

With the rapid development of information technology (IT), the Internet Plus (IP) model has penetrated into all aspects of the film and television industry and prompted traditional film and television companies to accelerate their digital transformation in order to cope with the increasingly fierce market competition and escalating personalized user needs (Schauerte et al., 2021; Selvalakshmi et al., 2020). In this context, how to effectively integrate big data and artificial intelligence (AI) technologies, improve content production efficiency, optimize user experience, and enhance market responsiveness has become a core issue of industry development. This research aimed to explore how big data and AI can be applied to many links in the film and television industry chain by answering the following questions:

- How can an intelligent recommendation system improve content matching accuracy through user behavior data?
- How does sentiment analysis technology dynamically optimize global marketing strategy?
- How can data-driven creative assistance improve the market adaptability of content production?

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In order to systematically answer the above questions, this study adopted a multicase comparative study method, selecting Yaoxing Film and Television, Warner Bros., and *The Wandering Earth* as case studies, and deeply analyzed their technical practices in recommendation systems, marketing optimization, and intelligent creation. Combining collaborative filtering, sentiment analysis, natural language processing (NLP), a support vector machine (SVM), and other technical tools, this study revealed the landing logic and actual effect of IT via real business scenarios through a comprehensive analysis of system performance indicators, user behavior logs, and social media data. The results showed that the application of data-driven technology significantly improved the recommendation accuracy, marketing response speed, and content creation efficiency. This study revealed the specific logic and key challenges of technology landing through real cases, providing operable technology upgrading paths and management optimization strategies for platform institutions and content producers. This closed-loop model of data acquisition-intelligent analysis-decision feedback proposed by the research not only lowered the threshold of technology application but also pointed out a sustainable development path with a data-driven core, especially for small and medium-sized film and television companies with limited resources.

## **LITERATURE REVIEW**

The combination of the internet and the film and television industries has developed rapidly in recent years, changing the pattern of the entire film and television industry (Du et al., 2024). In this context, many scholars began to pay attention to the research in this field, trying to reveal the role of IP in promoting the development of the film and television industry and the challenges it faces. He and Hu (2021) employed a machine learning ensemble model integrating random forest, extremely randomized trees, and generalized linear models via a stacking method with fivefold cross-validation to identify key factors influencing film consumption and improve box office prediction accuracy in the digital era. Suvattanadilok (2021) examined how social media activities, particularly trailer assessment, promotional programs, and online interactions, influence Thai audiences' decisions to watch films in cinemas. Choi et al. (2021) integrated perceived interactivity and perceived enjoyment into the expectation-confirmation theory model to examine habit formation among Chinese mobile short-video platform users. Schulz et al. (2021) explored the future advancements of digitalization in the motion picture industry through a two-stage Delphi study, predicting an increased use of smartphones as cameras, fully digital film sets, digital star avatars, and virtual reality-based interactive movies. Li (2020) examined the rise of IP films in China as a manifestation of the platformization of cinema, arguing that digital platforms have reshaped the cultural and economic logic of Chinese film by transforming content creation, distribution, and consumption into a transmedial process governed by algorithms. Li (2022) investigated the promotion and influence of big data and AI in the field of drama and film, utilizing a CNN algorithm to analyze audience data from a nationwide online survey of 4,000 respondents, revealing a shift in China's film audience structure toward mature, white-collar, and middle- and high-income professionals. Cao and Jamal (2024) developed a predictive model based on big data technology and used the SVM algorithm to forecast audience satisfaction with Chinese web dramas, analyzing features such as genre, cast, production cost, and promotional efforts. Su (2022) proposed and implemented a precision marketing algorithm for online video based on user big data analysis, which involved data collection, data analysis, and marketing strategy formulation to dynamically adjust marketing efforts according to user characteristics, thereby improving marketing efficiency and providing practical guidance for reducing advertising costs and enhancing the communication effectiveness of online video advertising.

Although the above studies discussed the impact of IP on the film and television industry from different perspectives, most of them focused on a single field or the application of specific technologies. In contrast, this study was the first to systematically apply big data and AI to multiple aspects of the film and television industry, including but not limited to recommendation systems, predictive analysis,

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