AI Application and Audience Demand Satisfaction in Guangdong TV News

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Abstract: This paper takes Guangdong TV news as the research object, discusses the application of artificial intelligence technology in the news industry and meets the needs of the audience. Through literature review, case analysis, and audience survey, this paper analyzes the specific practices of AI applications in Guangdong TV news in news production, distribution, and interaction, and evaluates the effectiveness of these applications in meeting audience content, form, and personalized needs. The study found that AI technology has significantly improved the efficiency and diversity of news production, and enhanced the accuracy and interactivity of news distribution, but still faces challenges in terms of technology, ethics and audience trust. In the end, this paper puts forward countermeasures and suggestions on strengthening technology research and development, improving regulations and standards and improving the media literacy of audiences, in order to provide reference for Guangdong TV news and AI application in the whole news industry.

1. Introduction

In recent years, the rapid development of AI technology is profoundly changing the news industry. As the forefront of reform and opening up, Guangdong's TV news actively explores AI applications, enables the production, distribution and interaction of news through automated writing, intelligent recommendation and other technologies, improves the quality and communication effect of news, and meets the needs of diversified audiences. Globally, the application of AI in the news industry has become a trend, and domestic and foreign media have demonstrated the potential of AI. The audience demand of Guangdong TV news is diversified and personalized, which has high requirements on the authenticity, timeliness and diversity of news. Based on the characteristics of Guangdong audience, this study analyzes the application practice of AI in Guangdong TV news and its actual effect on meeting the needs of the audience, aiming to provide practical guidance for Guangdong TV news and similar media, and provide theoretical and practical reference for the innovation and development of the news industry.

2. Research methods

2.1. Study design

This study uses a combination of qualitative and quantitative research to comprehensively explore the specific practice of AI application in Guangdong TV news and the satisfaction of the audience needs. The qualitative research mainly understands the application mode and practical effect of Guangdong TV news in news production, distribution and interaction through case analysis; the quantitative research quantitatively evaluates the audience's acceptance of AI application news and its demand satisfaction through questionnaire survey and statistical analysis. This hybrid research method can not only reveal the specific practice of AI technology in the news industry, but also provide data support from the perspective of the audience, and enhance the scientific and persuasive research.

2.2. Data collection

2.2.1. Case analysis of Guangdong TV news AI application

This study carefully selected a number of typical cases of Guangdong TV news in the application of AI technology in recent years for in-depth analysis[1]. These cases widely cover the three crucial links of news production, distribution and interaction, aiming to comprehensively reveal how AI technology reshaping the operation mode and influence of local mainstream media.

In the process of news production, Guangdong TV News has actively introduced an automated news writing system, which can quickly transform structured data into news articles based on big data and algorithms, especially in the fields of finance, sports and other fields to show high efficiency[2]. Intelligent video editing technology uses computer vision and deep learning algorithms to automatically identify key frames and lenses in videos, and quickly generate short films in line with the rhythm of news narrative, greatly shortening the production cycle of video news. In addition, the application of data news generation technology enables the news content to deeply integrate the data analysis results, and intuitively show the deep information and trends behind the news in the form of charts, visualization and other forms, and enhance the authority and persuasiveness of the news.

In terms of news distribution, the personalized recommendation system analyzes users 'browsing history, interest preferences and other data, and uses machine learning algorithms to customize the news push list for each user, which improves the efficiency of news distribution and users' reading satisfaction. Intelligent push technology combined with real-time news monitoring ensures that users can get important news updates in the first time, especially in playing a key role in emergency reporting. The real-time news update function automatically filters and sorts news through AI algorithms to ensure that the news content on the website or APP is always kept fresh and relevant.

In the interactive news section, Guangdong TV News uses the intelligent customer service system and realizes the 24-hour uninterrupted user consultation service through the natural language processing technology, effectively improving the user experience. User behavior analysis technology provides a scientific basis for the optimization and personalized recommendation of news content by tracking and analyzing the various behavior data of users on the news platform. The interactive question and answer platform provides a channel for users to directly participate in news discussions, ask questions and share opinions, enhancing the social nature and user engagement of news.

This study aims to summarize the main modes and technical characteristics of Guangdong TV news in AI application, including but not limited to automated content generation, personalized

distribution strategy, intelligent user interaction, etc. At the same time, this study will also explore the far-reaching impact of these AI applications on news production process, news content quality, audience participation and media brand influence, and provide valuable theoretical and practical reference for the digital transformation and innovative development of the news industry[3].

2.2.2. Audience Questionnaire survey and in-depth interview

In order to have a comprehensive and in-depth understanding of the news audience and meet their needs, this study adopted a data collection strategy combining questionnaire survey and in-depth interview to ensure the universality and depth of the data.

(1) Design of the questionnaire survey

In order to have a deep understanding of the news audience's cognition and attitude and the content and form of news in Guangdong, we designed a questionnaire containing closed and open questions. Questionnaire content comprehensively covers the basic information of the audience (such as age, gender, occupation, education level), news consumption habits (such as the main channels of news, preference of news type, reading news period), cognition and attitude of AI application news (such as understanding of AI news, use frequency, trust) and their specific needs for news content and form (such as expected news content depth, present form, interactive requirements). This questionnaire will be distributed simultaneously through the online platform (such as questionnaire star) and offline channels (such as community activity center), aiming to collect 500 valid questionnaires and provide detailed data support for subsequent in-depth research. As shown in Table 1, the following are example data from the questionnaire:

Table 1: Data examples of the questionnaire survey

Survey dimension	Specific indicators	Example data			
Essential information	Age distribution	18-25 Years old	30%	26-35 Years old	40%
	Career distribution	Student	20%	white collar	50%
News consumption habits	Main news channels	Social media	60%	television	20%
	Preference to news types	Finance and economics	30%	amusement	25%
AI news cognition and attitude	Knowledge of AI news	Understand	70%	do not understand	30%
	Trust in AI news	Trust	65%	distrust	35%
News content and form needs	The desired depth of the news content	In-depth reports	50%	news flash	30%
	The desired form of news	Video frequency	40%	image-text	35%

(2) In-depth interview design

Based on the questionnaire, we further selected 20 widely representative audiences for in-depth interviews covering different age groups, occupational backgrounds and media use habits. The interview content mainly focuses on the audience's specific experience of using AI news (such as convenience, accuracy, interest, etc.), their new needs and changes in the content, form and interactivity of news, as well as their personal suggestions and expectations for the future development of AI news. Through in-depth interviews, we have collected data examples shown in Table 2, which will provide a valuable reference for us to have a deeper understanding of audience needs and optimize AI news services.

Table 2 Data examples of the in-depth interviews

Interviews dimension	Specific feedback	Example data
Specific experience	The ease of using the AI news	High convenience: 80%, general: 20%
	Accuracy evaluation of AI news	Accurate: 70%, inaccurate: 30%
Demand changes	New expectations for the news content	More in-depth reports: 60%
	New expectations for the form of news	More video news: 50%
Future expectations	Suggestions for the development of AI journalism	Improve interactivity: 40%

(3) The advantages of the data collection strategy

With its extensive coverage and huge amount of data, the questionnaire survey can accurately quantify and analyze the basic characteristics of Guangdong news audience, news consumption habits, and the cognition and attitude to AI news. In-depth interviews, through detailed communication, deeply explored the specific experience, demand changes and deep expectations for the future when using AI news, providing rich qualitative data support for the research. By combining the questionnaire survey and in-depth interview, this study can comprehensively and deeply grasp the acceptance degree and demand satisfaction of the news audience in Guangdong province, and then reveal the complex psychological changes and behavioral characteristics of the audience in the process of AI news consumption[4]. This comprehensive feedback from the audience perspective is undoubtedly of extremely important guiding significance for the further optimization and innovation of the application of AI technology in the news industry, and will strongly promote the continuous innovation and development of news content and form.

2.3. Data analysis

Content analysis method is very important in the case analysis of Guangdong TV news AI application. By systematically combing text, video and data data, it reveals the application mode and characteristics of AI technology in news production, distribution and interaction. During the data collection stage, we collected reports, technical documents and user feedback from different channels to get a comprehensive understanding of AI applications[5]. In the coding and classification stage, we carefully code and classify the data to ensure the accurate classification to the analysis dimension, and clearly show the application mode of AI technology in the news process. In the mode summary stage, we summarized the main mode and innovation points of Guangdong TV news AI application, and deeply explored the technical principles and innovative ideas to provide reference for the application of AI technology in the news industry. Statistical analysis methods play a scientifically rigorous role in questionnaire survey data analysis, and we use SPSS and other software for data processing and analysis. During the data cleaning phase, we eliminate invalid samples to ensure the accuracy and reliability of the analysis results. In the stage of descriptive statistics, we make statistics on the basic information and news consumption habits to form a preliminary understanding of the audience. In the correlation analysis stage, we explore the relationship between audience characteristics and attitudes to the application of AI news, revealing the potential connection. In the regression analysis stage, we studied the relationship between audience needs and news satisfaction of AI application, quantified the degree of impact, and drew conclusions about statistical significance.

Based on the content analysis method and statistical analysis, this study comprehensively and deeply discusses the practice and effect evaluation of Guangdong TV news AI application, which provides reference for the digital transformation of the news industry. Despite the diverse methodological approaches, there are limitations, such as case sample limitations, questionnaire sample bias, and small sample size for in-depth interviews. Future studies need to expand the sample range and enhance the universality and representativeness.

3. AI application status of Guangdong TV news

In recent years, Guangdong TV news has made significant progress in the application of artificial intelligence (AI) technology, and AI technology has gradually penetrated into every link of news production, distribution and interaction. The following paper analyzes the current situation of Guangdong TV news AI application from three aspects of news production, distribution and interaction.

3.1. Application of AI technology in news production

Guangdong TV news has applied AI technology in news production, realizing automated news writing and intelligent editing and video generation. Through natural language processing technology, the system can automatically generate news releases based on structured data, improve production efficiency and reduce the burden on journalists. In the aspect of video news, the system of computer vision and deep learning technology is used to automatically identify the key pictures, quickly generate short videos that meet the news standards, shorten the production time, and enhance the timeliness of news. In addition, AI technology also helps the production of virtual anchors and animated news, injecting innovative elements into news forms and enriching the way of news presentation[6].

3.2. Application of AI technology in news distribution

Guangdong TV news uses AI technology to realize personalized recommendation and intelligent push in terms of news distribution. By analyzing users' browsing history, click behavior and interest preferences, machine learning algorithms are used to provide users with accurate and diverse personalized news content. At the same time, in order to meet the audience's demand for news timeliness, the system monitors the development of news events in real time, and sends important news updates through mobile phone push, social media and other ways in the first time, especially in emergencies. In addition, the intelligent push technology also optimizes the push strategy according to users' geographical location and time habits to ensure that information transmission is timely and without interference.

3.3. Application of AI technology in news interaction

Guangdong TV news has made remarkable achievements in the application of AI technology. In the interactive news section, the customer service experience and sense of participation are improved through intelligent customer service and interactive question and answer system, and valuable user feedback is collected. User behavior analysis uses machine learning algorithms to mine users' interest preferences, optimize the presentation of news content, and improve the reading experience. In news production, automated writing and intelligent editing improve efficiency and diversity; in news distribution, personalized recommendation and intelligent push enhance precision and timeliness[7]. Although the application of AI technology is facing challenges such as technical

limitations, data privacy and audience trust, Guangdong TV News will continue to strengthen technology research and development, improve data security management, win the trust and support of the audience with transparent operation and high-quality content, and constantly optimize the news content and service.

4. AI applications to meet the needs of the audience

With the rapid development of information technology and the change of the audience's media use habits, the audience's demand for news has shifted from a single information acquisition to diversified, personalized and interactive. Through the application of AI technology, Guangdong TV news has achieved remarkable results in meeting the audience's content, form and personalized needs.

4.1. Satisfaction of content requirements

AI technology has brought the diversity and depth of news content to Guangdong TV news, as well as the significant improvement of real-time and accuracy to Guangdong TV news. Through strong data processing and analysis capabilities, AI can quickly generate news in various fields such as finance, sports, weather and other, dig out the deep connection behind news events, and assist journalists to produce in-depth reports. In terms of timeliness, AI uses intelligent push and real-time update technology to ensure that the audience obtains information in the first time when news events occur, especially in emergencies. In addition, AI can also improve the accuracy of news and enhance audience trust through data verification and fact-checking.

4.2. Satisfaction of formal requirements

The application of AI technology in Guangdong TV news has greatly enriched the news form and enhanced the interactive experience of the audience. Through the intelligent editing technology, the short video news can be automatically generated, so that the audience can understand the news events more intuitively[8]. At the same time, AI also helps the production of virtual anchors and animated news, especially when reporting complex economic data, animated charts are combined with virtual anchor commentary to make the news content easier to understand. In addition, the intelligent customer service and interactive question and answer system uses natural language processing technology to automatically answer audience questions and allow real-time interaction, which not only improves the service experience, but also collects valuable user feedback, helping news media adjust their reporting strategies according to the audience's behavior and better meet diverse needs.

4.3. Satisfaction of personalized needs

4.3.1. Personalized recommendation and customized content

The AI technology provides the customized news content for the audience through the personalized recommendation system. For example, the system can use machine learning algorithms to recommend personalized news content for the audience based on their browsing history, click behavior and interest preferences[9]. For example, if the audience is interested in financial news, the system will give priority to pushing relevant news articles and videos. In addition, the personalized recommendation system can also dynamically adjust the recommendation strategy according to the real-time feedback of the audience to ensure the accuracy and diversity of

the recommended content. For example, if the audience shows high attention to a news topic, the system will automatically increase the push frequency of relevant content.

4.3.2. Optimization of user experience

AI technology further meets the personalized needs of the audience by optimizing the user experience. For example, intelligent push technology can optimize the time and frequency of push according to the geographical location and time habits, to avoid interference to the audience[10]. In addition, user behavior analysis technology can help news media understand the audience's preferences and needs, so as to optimize the presentation form of news content. For example, if the data shows that the audience is more inclined to read the news combined with text and text, the system will automatically adjust the layout of the news page to improve the audience's reading experience.

In general, Through the application of AI technology, Guangdong TV news has achieved remarkable results in meeting the audience's content needs, form needs and personalized needs. AI technology not only improves the diversity and depth of news content, but also enhances the audience's participation through the multimedia news form and interaction. At the same time, personalized recommendation and user experience optimization technology provide customized news services for the audience. However, the application of AI technology still faces some challenges, such as technology limitations, data privacy issues, and audience trust issues. In the future, Guangdong TV News needs to further strengthen technology research and development, improve data security management, and win the trust and support of the audience through transparent operation and high-quality news content.

5. Challenges and countermeasures

Guangdong TV News has achieved remarkable results in the application of AI technology, but it still faces the challenges of technology, ethics and audience trust. Technically, although AI has great potential in news production, distribution and interaction, automated writing lacks depth and emotion, intelligent recommendation is prone to "information cocoon room", and insufficient language understanding, and it is easy to make mistakes when dealing with dialect and cultural differences. To this end, it is necessary to strengthen the research and development of natural language processing and deep learning technologies, optimize recommendation algorithms, introduce diversity and balance mechanisms, and strengthen data security and privacy protection[11].

Ethically, the content generated by AI may raise authenticity and ethical issues, such as factual errors, bias and false information dissemination[12]. The news media should establish a strict content review mechanism, clarify the attribution of responsibilities, formulate relevant laws and regulations to regulate the responsibilities of the media, enhance the transparency, publicize the application scope of AI technology, and strengthen the humanistic care of the media.

In order to cope with these challenges, Guangdong TV News should increase investment in AI technology research and development, and improve the level of system intelligence. The government and industry organizations should improve relevant laws and regulations, such as the Data Privacy Protection Law, and formulate AI news production standards. At the same time, it is also important to improve the media literacy of audiences. Through education and publicity, they can enhance their ability to distinguish AI-generated content. News media can offer media literacy courses to help audiences understand and use news information.

In short, the application of AI technology in the news industry brings both opportunities and challenges for Guangdong TV news. By strengthening technology research and development,

improving laws and regulations and improving the audience's media literacy, Guangdong TV news can, while ensuring the news quality and credibility, give full play to the potential of AI technology, provide audiences with better quality and more personalized news services, and promote the continuous innovation and development of the news industry.

6. Conclusion

This study analyzes the current situation of AI application in Guangdong TV news, and reveals the specific practice and effectiveness of AI technology in news production, distribution and interaction. Research shows that AI technology significantly improves the efficiency of news production, distribution accuracy and interactivity, and effectively meets the audience's needs for content, form and personalization. However, AI applications still face challenges such as technical limitations, data privacy, and audience trust, which need to be further optimized. This study provides practical inspiration for the application of AI in the news industry, summarizes the successful experience of Guangdong TV news, provides reference for other media, and enriches the theory of news communication from the perspective of audience needs. Future research can explore the combination of AI with VR and AR technology, as well as the role of AI in news ethics and responsibility, and continuously track the changes of audience needs, and dynamically capture and meet their needs to meet the challenges brought by the rapid development of AI technology.

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