

# Practical Reform of Radio and Television Content Planning and Directing Driven by Artificial Intelligence

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**Abstract:** With the rapid development of artificial intelligence (AI) technology, its impact on the radio and television industry has become more and more significant. This paper focuses on the reform of radio and television content planning and directing practice driven by AI. In this paper, the theory of AI and radio and television is deeply analyzed, and the changes caused by it in content planning concept, planning links and editing and directing practice are explored. Through research, it is found that AI has changed the concept of content planning and reshaped the planning ideas from the dimensions of audience orientation, innovation and foresight, and cross-media integration. In the content planning, there are changes in topic planning, content structure and narrative mode planning, and program element planning. In the practice of editing and directing, the links of material collection and screening, program editing and post-production, on-site scheduling and real-time control have changed significantly. Research shows that AI brings new development opportunities to the radio and television industry and promotes its continuous innovation in content creation and practical operation.

## 1. Introduction

With the rapid development of information technology, AI has widely penetrated into many fields of social life, which has had a far-reaching impact on the reform and innovation of various industries [1]. As an important part of the media field, radio and television are inevitably impacted by AI [2]. Under this background, it is of great practical significance to deeply study the reform of radio and television content planning and directing practice driven by AI.

From the perspective of the development of the radio and television industry itself, the traditional content planning and directing mode is facing many challenges [3]. The audience's media usage habits and content needs are increasingly diversified and personalized, and it is difficult for the traditional model to accurately grasp and meet these changes [4]. The rise of new media has diverted a large number of audiences and intensified the competition in the media market. Radio and television urgently need to seek new development paths to enhance their competitiveness [5]. The emergence of AI technology provides an opportunity for the radio and television industry to break through the predicament and achieve innovative development.

At the academic research level, with the deepening of the integration of AI and radio and television, the related research has gradually increased. However, at present, most studies focus on the application of a specific technology or the analysis of local links, lacking systematic and in-depth discussion on the overall reform [6]. The purpose of this study is to fill this gap and comprehensively analyze the changes that AI has brought to the practice of radio and television content planning and directing from the theoretical level, so as to provide reference for the development of the industry.

Through in-depth study of the application and influence of AI in the practice of radio and television content planning and directing, it will help the radio and television industry to better adapt to the trend of technological development, optimize the program production process, and improve the content quality and communication effect. It can also contribute to the theoretical

innovation in the media field and promote the development of interdisciplinary subjects of radio and television and AI. Therefore, the research on this subject is urgent and of great significance.

## **2. AI and related theories of radio and television**

AI is a technical science that aims to make machines simulate, extend and expand human intelligence, covering many fields such as machine learning, natural language processing and computer vision [7]. Machine learning trains models through data to realize prediction and decision-making; Natural language processing enables machines to understand and generate human language; Computer vision gives machines the ability to perceive and understand image and video information.

Radio and television content planning is the planning process of radio and television programs from creative conception to specific implementation plan, which needs to comprehensively consider audience demand, market competition, program positioning and other factors to determine the program topic, content structure, expression form and so on [8]. The practice of editing and directing is to put the planning scheme into practical creation, including a series of operations such as material collection, editing and production, on-site scheduling, etc., in order to realize the transformation of the program from conception to finished product.

The integration of AI technology and radio and television is based on their internal convergence. The radio and television industry has a huge amount of data, which provides rich resources for AI training. AI's data analysis, pattern recognition and other capabilities can provide accurate decision support for radio and television content planning and directing practice, improve creative efficiency and quality, and thus promote the innovative development of the radio and television industry.

## **3. The change of AI to the concept of radio and television content planning**

Under the influence of AI, the concept of radio and television content planning has undergone profound changes. The first thing is the change of audience-oriented concept. Traditional radio and television content planning is based on sampling survey and empirical judgment, and its accuracy is limited. With the help of big data analysis, AI can gain a deep insight into the audience's behavior habits, interest preferences and even emotional tendencies. By collecting users' browsing, searching, comments and other data on various platforms, we can construct detailed user portraits. Content planning can customize highly personalized program content and forms according to the characteristics of different audience groups, and truly realize the concept change from "mass communication" to "minority communication" and "accurate communication".

AI has also greatly influenced the content innovation and forward-looking concept. In the past, the innovation of content planning mostly relied on the personal experience and inspiration of planners, and it was difficult to fully grasp the market trend. AI algorithm can analyze massive historical program data and network hotspot information, and tap potential innovation points in theme and form. With the deepening of media integration, radio and television are no longer limited to traditional platform communication. With the support of AI technology, content planning needs to fully consider the characteristics of different media and audience differences, and realize the seamless communication and interaction of content on multiple platforms. When planning a program, we should not only consider the presentation of TV, but also design derivative content suitable for mobile communication, such as short video clips and interactive topics, in combination with the characteristics of network platform. Through cross-media integration, we will expand the influence of the program and build an all-round communication ecology to meet the content consumption needs of the audience in different scenarios.

## **4. The transformation of AI in radio and television content planning**

With the empowerment of AI, radio and television content planning has undergone all-round changes, from topic planning to content structure and narrative mode, to program element planning,

showing a completely different face from the traditional model. Traditional topic planning often relies on the experience of planners and limited market research. With the help of big data analysis, AI can accurately capture social hotspots and audience interest points. Through the real-time monitoring of multi-channel data such as social media and news information platform, this paper analyzes the trend of topic heat and the focus of audience discussion, and provides data support for topic selection. For example, if the topic of "traditional culture inheritance" is hot on the Internet recently, and the audience discussion focuses on innovative inheritance methods, radio and television programs can plan related topics, such as "Ancient Rhythms, New Voices: Exploring the Innovative Inheritance of Traditional Culture". For a more intuitive presentation, it is shown in Table 1 as follows:

Table 1 Correlation between Hotspot Data from Different Channels and Topic Selection

Data Source	Hot Topic	Popularity Trend	Popularity Index (1-100)	Audience Discussion Focus	Audience Age Distribution	Potential Topic Direction	Estimated Topic Popularity (1-100)
Social Media	Traditional Culture Inheritance	Rising	85	Innovative Inheritance Methods	Mainly aged 20-45	"Ancient Rhythms, New Voices: Exploring the Innovative Inheritance of Traditional Culture"	75
News Information Platform	Technology-Driven Educational Transformation	Steady Growth	78	Personalized Education Models	Mainly aged 30-50	"Empowered by Technology: Ushering in a New Era of Personalized Education"	70
Video Platform	Extreme Sports Trend	Rapid Growth	88	Niche Extreme Sports Experiences	Mainly aged 18-35	"Extreme Challenges: Exploring the Journey of Niche Extreme Sports"	80

AI can optimize content architecture and narrative rhythm. The traditional narrative method is relatively fixed, and it is difficult to meet the needs of different audiences. By analyzing a large number of successful program data, AI summarizes the narrative patterns and rhythm laws that attract audiences. For example, in documentary planning, intelligent algorithms can plan the development of the story and arrange the plot ups and downs reasonably according to the content theme and target audience. For historical documentaries of young audiences, the algorithm can suggest fast-paced narration, interspersed with lively and interesting short stories to avoid lengthy narration. In the choice of narrative perspective, AI can also be used to simulate the effects of different perspectives, and select the perspective that can best arouse the emotional resonance of the audience, making the program content more attractive and infectious.

In terms of guest selection, AI selects suitable candidates from the huge guest resource base according to the program positioning and audience preferences. For example, in a food culture festival, we recommend guests with both cooking skills and affinity by analyzing their professionalism, network influence and fit with the target audience. In scene design, AI uses virtual technology to combine program themes and audience preferences to generate a variety of virtual scene schemes for planners to choose from. Science fiction programs can use this technology to create realistic future universe scenes and enhance the visual effects of the programs. In the setting of program links, according to the interactive data and feedback of the audience, we design new and interesting links that can enhance the audience's sense of participation, such as online and offline linkage voting and answering questions, so that the audience can deeply participate in the program and enhance the communication effect and influence of the program.

## 5. AI's reform on the practice of radio and television editing and directing

The development of AI has profoundly changed the practical operation of radio and television director, from material collection and screening, to program editing and post-production, to on-site scheduling and real-time control, all links have changed significantly due to the integration of AI

technology.

Traditional material collection depends on the director's on-the-spot shooting or cooperation with external institutions, which is time-consuming and laborious. Nowadays, AI-driven smart devices such as drones and smart cameras can automatically collect materials and expand the collection scope and perspective. In the material screening process, AI uses image recognition and voice recognition technology to quickly screen out the clips that meet the needs of the program. Table 2 shows the advantages of artificial intelligence in selecting materials for different themes:

Table 2 Comparison of Screening Criteria and AI Processing Efficiency for Different Thematic Materials

Material Theme	Traditional Screening Criteria	Average Traditional Screening Time (hours)	AI Screening Criteria	Average AI Screening Time (hours)	Improvement in Screening Accuracy (%)	Reusability Assessment (1-5 stars)
Natural Scenery	Aligns with program style, visually appealing	5	Contains specific natural elements, meets color saturation standards	1	20	4 stars
People Interviews	Clear expression, valuable viewpoints	4	Semantically complete, positive emotional tone	0.5	30	3 stars
Food Preparation	Clear steps, complete ingredient display	4.5	Highlights key steps, clear close-ups of ingredients	1.2	25	3 stars
Cultural Events	Highlights event highlights, well-presented atmosphere	5	Clearly identifies iconic event scenes, captures audience reactions	1.5	22	4 stars

In terms of program editing, AI can learn a lot of excellent editing cases, master the rhythm and skills of editing, and quickly generate the first draft of editing according to scripts and materials. The director only needs to make fine adjustments on this basis, which greatly shortens the editing time. In TV series editing, AI can accurately select the right shots and arrange them according to factors such as plot development and emotional changes of characters. In post-production, AI helps to generate special effects, such as creating realistic alien scenes for science fiction programs through deep learning image generation technology. In color correction, the intelligent algorithm can automatically match the color style of the picture, ensure the overall tone harmony and improve the visual effect of the program.

At the scene of program recording, AI assisted the director to schedule. Through the data collected by multiple sensors and cameras deployed on the site, AI analyzes the information such as the location of on-site personnel and the running state of equipment, and provides the best scheduling scheme for the choreographer. At the scene of a large-scale literary evening, AI can monitor the position of stage actors and the state of lighting and sound effects in real time, and remind the director to adjust in time to avoid mistakes. At the same time, with the help of real-time data to analyze the audience's reaction, such as facial recognition technology to analyze the audience's expression and judge their emotional changes, the director can adjust the rhythm and content of the program in real time, enhance the attraction and interaction of the program, and ensure the smooth progress of the program and achieve the best broadcast effect.

## 6. Conclusions

This paper systematically studies the reform of AI on the practice of radio and television content planning and directing. In terms of content planning concept, AI promotes radio and television to shift from traditional fuzzy audience positioning to accurate audience orientation based on big data analysis. Content innovation and forward-looking are also promoted by intelligent algorithms for

mining massive data, and at the same time, the concept of cross-media and integration is promoted to adapt to the trend of media integration.

In the content planning, topic planning can accurately capture hot spots with the help of big data, the content structure and narrative mode are optimized by intelligent algorithms, and the planning of program elements such as guest selection and scene design is more scientific and reasonable. In the practice of editing and directing, the material collection is expanded by intelligent equipment, and the screening efficiency is greatly improved; Program editing and post-production have intelligent assistance, which shortens the time and improves the effect; On-site scheduling and real-time control are intelligent with the help of AI, which enhances the program effect and interactivity.

However, the application of AI in the field of radio and television also faces some challenges, such as data privacy and security issues, and the lack of creativity that may be caused by over-reliance on technology. In the future, while making full use of the advantages of AI technology, the radio and television industry should pay attention to personnel training, enhance the technical application and creative integration ability of practitioners, improve relevant laws and regulations, and ensure data security. The sustainable development of the industry needs to be achieved to better meet the increasingly diverse needs of the audience.

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