

# "5G + Era": An Analysis of the Potential Tension and Development Trend of Smart Radio and Television

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## ABSTRACT

The application of new media technology provides new potential energy for the development of radio and television industry. Based on the 5G + Era, this research makes an in-depth analysis of the development prospect and potential tension of smart radio and television by combining the methods of literature analysis and depth interviews. It is found that there are two obvious deficiencies in today's smart radio and television, "lagging innovation concept" and "obvious performance of technical ethics". In the context of media integration, combined with the theory of organizational duality, this research puts forward some suggestions on the development of radio and television industry from three levels: top-level logic, middle-level logic and grass-roots logic, in order to make smart radio and television glow with vitality in the 5G + Era.

**Keywords:** 5G, Smart radio and television, Media technology, Visual experience.

## 1. INTRODUCTION

From the development history of human information communication, no matter the birth of early language and text, the later popularization of printing, the emergence of mass media such as radio broadcasting, or the wide application of Internet and digital media technology, they all reflect the progress of communication technology and the revolutionary subversion of communication media. 5G is the abbreviation of the fifth generation communication technology. Several changes and application subversion of communication technology can be described as comprehensively changing the economic and industrial structure, social life and communication mode. As McLuhan mentioned, the impact of the development of a new technology on the social level will not be one-sided, but more complex, systematic on the whole organism. This also requires us to focus on the new technology era and understand problems from a systematic and comprehensive perspective. 5G itself is only a communication technology, but we need to pay attention not only to the impact of 5G on the production and application of specific content, but also to its changes in social model and economic transformation.

## 2. POTENTIAL TENSION OF SMART RADIO AND TELEVISION

### 2.1. Promote technology and humanistic care

The advent of 5G is undoubtedly a great progress in the development of human communication technology, and it is also another turning point of the Internet [1]. The high-speed, large connection and low delay network environment built by the fifth generation mobile communication system (5G) means that the media content production with greater demand for traffic can be released. From the end of 2018, CCTV began to fully deploy the application of 5G core technology, 4K Ultra HD and other artificial intelligence in the new media era. Compared with other media industries, the potential tension of the radio and television industry is huge, and the development of smart radio and television has been injected with new vitality in the 5G era.

The application and innovation of "5G + 4K + AI" new technology in the radio and television industry has promoted the high-quality development of radio and television content, promoted the diversified and rapid development of radio and television media communication forms, improved the credibility and influence of radio and television media, and better met

the audience's demand for high-quality content. It is truly committed to all-round, all-time and all-dimensional high-quality intelligent new media services. Therefore, humanistic care has always been the guiding light to guide the application of intelligent technology, and guide it to always follow the core value of the development of smart radio and television.

## ***2.2. Balance between user behavior analysis and group identity***

In the era of intelligence, user experience is extremely important, especially in the current era when short videos are popular. By grasping users' tastes, we can stand firm. However, the biggest problem may be the balance between user behavior analysis and users' ability to achieve group identity. This is also a major tension in the potential development of smart radio and television. Today's users are no longer the passive one-way chain logic between viewers and producers. The increasing active participation of users is bound to have an impact on industrial producers. This game is also complex and multi-directional. However, the three levels (challenge, control and collusion) displayed by users for the radio and television industry are not completely separated, but there is a kind of inheritance and integration. From the perspective of users as the main body, we can see that the "step-by-step pressure" of users is a challenge to industrial producers, a reversal of the dominance of discourse power, and sometimes can even dominate the "trend" of content. In other words, it is not so much a journey of advanced voice between users and industry that users' influence, participation and initiative are continuously enhanced in this process. It is better to say that in the development of the new media era, the relationship between them is more subtle and can provide stronger vitality and attraction for content production. As long as users and producers work in the same direction, that will present a multi-dimensional interactive and cooperative relationship, and this collusive relationship has become the pursuit of most industries and users.

On the whole, the power relationship between users and producers has indeed reversed. User groups are concentrated again and gain power through multiple interactive channels, while content production depends largely on the tastes and preferences of the audience [2]. In terms of content customization, video ratings depend on the attraction of platform operators to user ratings, and user viewing experience in turn affects video content. Therefore, from the past experience, the media has changed the world, and the role of users has also changed [3]. To a certain extent, the program content can be continuously optimized according to the feedback of users and viewers to further attract more potential users, so as to form a virtuous circle and to form a group identity at the user level. The game of balance point is a highlight of the development of smart radio and television as well.

## **3. PROBLEMS OF 5G + ERA INTELLIGENCE**

### ***3.1. The innovation concept is relatively backward***

Thanks to the technical characteristics of 5G, such as high bandwidth, high connection density and low delay, it has brought new possibilities to the application of video, which has laid a firm practical foundation for the innovation of radio and television industry. At present, in the 5G + Era, the innovative concept seems to be still stagnant although the combination of 5G + 4K + VR has long been mentioned, the radio and television industry can effectively meet the uplink and downlink bandwidth requirements of 4K / 8K HD video transmission with the high bandwidth of 5G, so as to steadily promote the popularity of ultra HD video. VR immersive experience can also meet the users' needs to a great extent. In terms of live broadcasting, the application of 5G will smoothly watch the same program at the same time even if many people watch it, which brings users a good viewing experience to a great extent. This also reflects that the technical obstacles of video products are no longer a big problem. The biggest innovation crux is that the thinking innovation of video content creation lags behind.

The biggest feature of the 5G + Era is that there are infinite possibilities in the future. For the radio and television industry, the application scenarios of video are more diverse, and the applications will no longer be limited to the traditional TV, computer and smart home appliance media. From what can be seen at present, with the landing of 5G, more scenes will be found and developed in the interaction between 5G and various sectors of society. More convenient and frequent contact between people and video applications will surely inject catalyst into the emergence of new content forms of video products.

### ***3.2. Obvious performance of technical ethics***

The advent of the era of "5G + big data" intensifies the contradiction between the infinity of information index growth and the limitation of people's attention resources. Algorithm recommendation marks users' preferences based on users' browsing records on the media platform by capturing, processing and analyzing data. As a new way of information production, algorithm recommendation is not perfect under the current relevant legal provisions and industry norms. There are many ethical problems that need urgent attention[4]. The impact of intelligent technology on the field of human communication is undoubtedly revolutionary. On the one hand, intelligent machines are fully involved in the compilation and distribution of information, and AI news is gradually replacing the function of "gatekeeper". Media practitioners transfer part of their rights to

intelligent technology, but they lack timely supervision and management of the transferred rights. On the other hand, the phenomenon of tool rationality invading value rationality brought by the excessive use of artificial intelligence technology is gradually increasing in the field of information dissemination. In this context, while transferring their rights to technology, how to supervise and manage the transferred rights and ensure the authenticity, objectivity, accuracy and interest of information has become an urgent problem to be solved.

As far as the radio and television industry is concerned, it is still in the stage of weak artificial intelligence. Intelligent machines do not fully achieve autonomy and adaptability, and the development of smart radio and television is greatly limited here. As Borgman believes, technology is not only the intermediary between contact and the world, but also the way to show the world. Fundamentally, the ethical problems caused by intelligent technology are still human problems in essence. It is human beings that plays a decisive role behind technological progress. Behind technological progress, humans' basic values must be branded.

In general, the radio and television industry should not only establish the communication logic of innovative development, but also take the communication logic of morality and ethics into account. Only by comprehensively examining the two-sided nature of 5G +, can it provide lasting power for the development of smart radio and television.

#### **4. DEVELOPMENT TREND OF SMART RADIO AND TELEVISION**

##### ***4.1. Top level logic: pay attention to planning and innovation***

First of all, it should be clear that in the 5G + Era, the development of smart radio and television not only implies the iteration of technology, but also implies a deeper communication logic —planning and layout. Communication is the main business of radio and television, and the core of intelligent communication is intelligent information matching based on big data. The construction of smart radio and television needs to pay attention to three levels: firstly, focus on the construction of the platform to realize the compilation, distribution and in-depth creation of information; secondly, use the platform to excavate and analyze users' preferences and personalized needs; thirdly, use technology to match users' needs.

In addition to doing a good job in the main business of communication, smart radio and television should strive to extend its business scope to both wings and strive to integrate more deeply into society, economy, politics and life. Among them, connecting to government information network and opening up new consumption

channels are indispensable and important businesses to help government information disclosure and integrate into the modern social governance system. In the process of promoting the modernization of the rule of law and social governance, the information disclosure of the Party and government institutions at all levels has been deepened, the list of powers has become more transparent, and the work of the masses has become more convenient. However, there are still some problems. For example, some public contents are not comprehensive and procedures are not standardized; some are not good at dealing with the relationship between openness and confidentiality, and the sharing mechanism is not perfect. Some service systems are not perfect, and administrative examination and approval and service matters are not satisfactory. These need to be strengthened and improved in the new era of communication.

Secondly, the development of smart radio and television is not "crossing the river by feeling the stone", this road is full of hardships. The development of any industry is not achieved overnight. For the development trend of radio and television industry, it is urgent to clarify the industrial logic and fully explore the common values of development nodes and development dimensions. It is particularly important to clarify the relationship between "planning and innovation", regardless of the development of any industry, "innovation" is always the top priority.

On the one hand, in its development, radio and television should fully clarify the effective advantages of traditional media, build new media resources based on this foundation, give full play to its own advantageous resources comprehensively and systematically, and then display the actual content and resources in an all-round and all media way. On the other hand, we should strengthen the construction and development of radio and television intelligent information cloud platform [5]. We can integrate relevant programs across the country and integrate them into the digital TV communication system, so as to effectively enrich its actual program sources and provide users with more high-quality and diverse choices. In practice, users can choose TV programs independently based on their own ideas and needs.

##### ***4.2. Upper level logic: grasp the integration of technology and humanities***

American scholar David Weinberger believes that the value of technology does not come from the overall operation efficiency it gives, but depends on the interconnection mode of a large number of nodes. The construction of smart radio and television is a complex systematic project. It does not exist in isolation. It needs to be combined with the national strategies such as the integration of three networks, the Internet of things and the construction of smart city, collaborative innovation

and overall development. It is necessary to coordinate three networks integration planning and strengthen the smart function of living room TV. Tri-networks integration is a description of the development trend of "three kinds of networks". Only after the "tri-networks" have been built into broadband communication network, digital radio and television network and next generation Internet, can they have the conditions for complete integration. The construction of smart radio and television should be connected with the tri-networks integration plan and go hand in hand. At this stage, due to the different technical characteristics of each network, the services carried by each network have their own emphasis. With the upgrading of technology and the elimination of the threshold, the business of both sides will be interconnected.

#### **4.3 Basic level logic: Improve personnel and service transformation**

As the radio and television industry moves towards intelligence, strengthening the basic quality of radio and television personnel is one of the important tasks to promote the intelligent development of radio and television industry. Organization is the platform on which human resources depend for survival and activities. The organizational structure directly determines the allocation of human resources and directly affects the exertion of the level of human resources.

Firstly, adjust the organizational structure and stimulate exploratory activities of media integration. In the era of traditional media, the environment of radio and television media is relatively stable and simple. Its organizational structure mostly adopts the "pyramid" hierarchical management system. However, in the era of new media, the external environment is complex, and the theory of organizational duality suggests that it can separate its business units in space to meet the needs of organizational exploratory innovation and utilization innovation. Therefore, in the era of financial media, radio and television media should carry out adaptive innovation of organizational structure, such as adopting project responsibility system or matrix structure for new business.

Secondly, unblock the organizational channels and realize the accommodation within the organization. On the one hand, it not only solves the problem of integrated development of new business, but also solves the problem of human resources rational allocation ; On the other hand, it is conducive to optimizing the knowledge structure of employees, enriching media experience, activating talent potential.

Thirdly, improve the standardization of the organization and maintain the orderly development of the organization. The standardized management of radio and

television media is not only conducive to saving resources, but also conducive to providing a stable organizational environment for the construction of financial media. Initially, provide an effective communication bridge between employees. In addition, media integration and innovation should always be standardized. Pay attention to content review and form innovation, and should not relax management and requirements because of the blind pursuit of attention and economic benefits.

## **5. CONCLUSION**

The 5G + Era is a huge opportunity and challenge for the radio and television industry. Whether smart radio and television can catch up with the pace of the times and maximize its potential is a point worth studying in the future. Continuous application and development of technology have promoted the high-quality development of radio and television content, as well as the diversified and rapid development of radio and television media communication forms, improved the credibility and influence of radio and television media, and better met the audiences' expectations of high quality. At the same time, we should also pay attention to the obstacles brought by technical ethics. Only by better grasping the compatibility of technology and humanities, can smart radio and television become a high-quality intelligent new media, and make it truly commit to the all-round, all-time and all-dimensional service in the 5G + Era.

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