

Application of Big Data Technology in the Development of Network Radio and Television Station

Zichen He¹, Danian Li^{2*}

¹Chongqing Normal University, No. 37, Middle University Town Road, Shapingba District, Chongqing, 401331, China

²Chongqing College of Electronic Engineering, No.76 University Town East Road, Shapingba District, Chongqing, 401331, China

*Corresponding Author

Abstract

Radio and television, as one of the most important channels of information dissemination at present, has a great impact on people's lives, and has also undergone new changes with the rapid development of technology. With the continuous progress of science and technology, big data technology has changed the traditional calculation method and statistical thinking. The radio and television technology based on big data can better meet people's needs and further develop the radio and television industry. Therefore, it is of great significance to discuss the transformation and development of radio and television technology at this stage. Applying big data technology to the construction of network radio and television stations is a subversion of the extensive operation mode of traditional media, and has embarked on the interactive operation development direction. In this paper, the influence of big data era on broadcasting and television new media is analyzed. By changing traditional ideas, using network technology and adopting innovative operation methods, the big data era and broadcasting and television new media are better integrated, providing reference for broadcasting and television media industry.

Keywords: Big data, New media, Radio and television

1. Introduction

With the rapid development of network technology, mobile phones and computers are increasingly becoming the main channels for people to obtain information [1]. On the contrary, the radio and television industry began to grow slowly or even stagnate. With the rapid development of science and technology, the big data era of mass production, sharing and application of data has come. The application of big data facilitates people's lives and promotes the development of society. At the same time, the increase of the application scope of big data also requires some industries to make certain transformation to meet the needs of society [2]. Under the condition that the original media data is not fully utilized, TV media will face huge data growth brought by multiple channels such as mobile Internet, traditional media and outdoor media [3]. In the process of China's rapid economic development, China's computer technology and information technology have made rapid development. At present, China has accumulated a lot of data resources, and the era of big data has arrived [4]. Because of its own shortcomings, the traditional radio and television industry can not meet people's needs for convenient and timely information acquisition in the network age. This situation makes radio and television technology must be transformed and upgraded [5]. Combined with the current hot big data technology, it may provide some help for the upgrade of radio and television technology.

With the increasing development of science and technology and the continuous improvement of social and economic level in China, the Internet has increasingly become one of the main channels for people to obtain information and watch movies and TV programs. Big data is a huge database, but different from the traditional database, big data is combined with cloud computing, through the construction of a large number of cloud computing resources and practical application [6]. At present, big data has risen from the conceptual stage to the

application stage, and has brought new opportunities to traditional industries. The state attaches great importance to the transformation and integration of sports and puts forward requirements. At present, under the application of big data, the traditional radio and television industry has been severely impacted. Based on this, it is necessary to accelerate the technological transformation of the radio and television industry at this stage [7]. In this context, the radio and television industry also needs to rely on the great advantages of the network and data age to transform, so as to innovate the program content, optimize the viewing experience, meet people's growing spiritual and cultural needs, conform to the market development trend, and promote scientific and cultural progress [8]. In this paper, the influence of big data era on broadcasting and television new media is analyzed. By changing traditional ideas, using network technology and adopting innovative operation methods, the big data era and broadcasting and television new media are better integrated, providing reference for broadcasting and television media industry.

II. The Era of Big Data Has Brought Impact to Network Radio and Television Stations

A. The Impact on the Operation Mechanism of Radio and Television

In terms of media communication, the popularity of radio and television is far earlier than the popularity of computers and the emergence of big data era. However, due to the irresistible trend of big data era, radio and television have also undergone new changes in this era, and the emergence of new media is a major change. With the rapid development of information, the traditional radio and television industry has been greatly impacted. The new media relying on Internet technology has been widely used for its advantages of fast speed, large amount of information and strong interactivity, which has greatly improved the convenience and timeliness of audience's access to information. The impact brought by the era of big data is enormous, including both the technical aspects of radio and television and the operational mechanism of communication media. Because the new media era puts forward higher requirements for the quality of journalists, the traditional talent training mode is difficult to effectively meet the needs of the development of radio and television media [9]. Due to the impact of new media on traditional media, the pursuit of short video by capital and the active support strategy of Internet giants, the talents of traditional media poured into the wave of short video content entrepreneurship. The vertical segmentation structure of short video industry is shown in Figure 1.

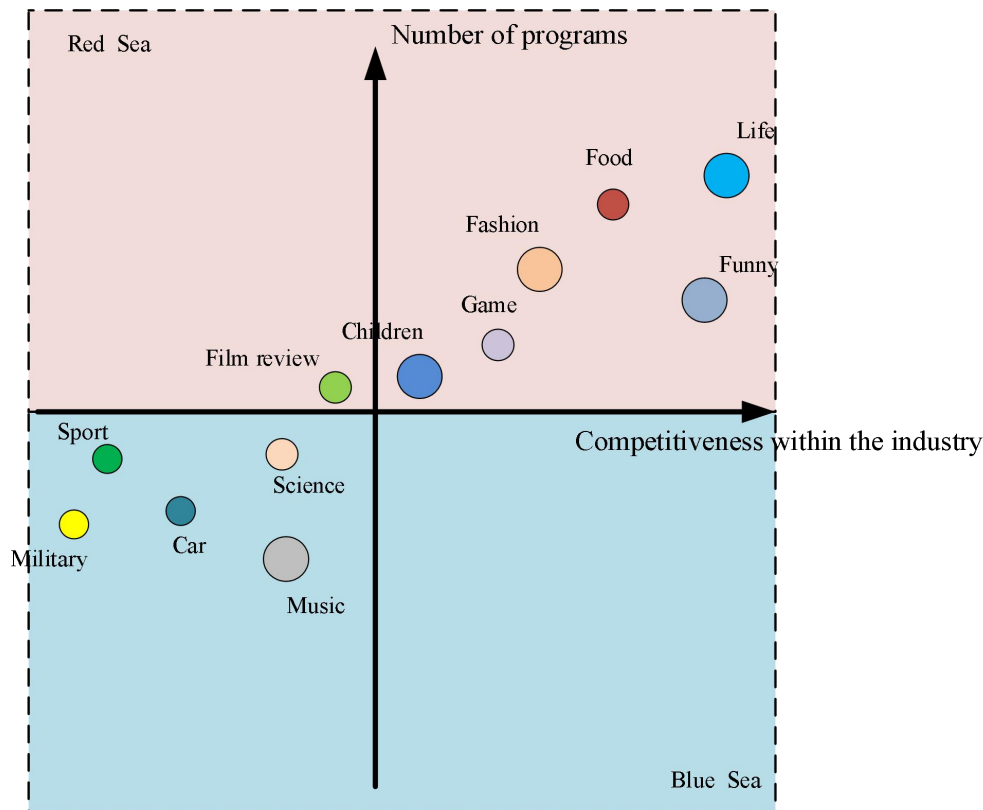


Fig.1 Vertical Segmentation of Short Video Industry

At present, the main form of broadcasting in the development of media is to use websites as the main support of radio and television on the Internet. The combination of websites and radio and television has enabled viewers to listen and watch online, and they can also see the newly released programs of radio and television stations while surfing the Internet. The impact of the new media era on radio and television media is not only on the technical level, but also on the operation mechanism of traditional media. Under the impact of Internet technology, media such as radio, television and Internet have gradually started cooperation and integration. Media integration has further integrated information resources, and the audience's requirements for information service quality have been met. The rapid development of Internet technology has greatly improved the audience's access to information and efficiency, and also made the audience's demand for information service quality increasingly higher.

B. The Impact on the Quality of Radio and Television Practitioners

The era of big data means a great deal of information, rapid changes and ideological changes, which requires the personnel engaged in radio and television industry not only to provide technical support for the development of new radio and television media, but also to make a fundamental change in attitude, and earnestly understand the relationship between data and media. The maturity and development of Internet technology is undoubtedly a great change in the history of modern media, and the traditional radio and television industry has also been greatly impacted. Modern media based on the Internet has become the darling of modern media with its advantages of high speed, selectivity, large amount of information and interaction, and people have more ways and choices to obtain information. After each radio and television station has built its own official website, listeners and viewers have more choices to listen to and watch radio and television programs. The innovation of Internet technology promotes the rapid development of mobile media, which also benefits from the development of human smart phones. Mobile phones can not only meet people's call and communication needs, but their information service platform functions are becoming increasingly prominent. Through the Internet, listeners and viewers can not only listen to and watch the programs of a radio and television station, but also conduct related search to obtain the

latest and most interesting radio and television programs all over the world. With the rapid development of mobile media, traditional radio and television directors need not only to innovate the program concept, but also to constantly improve the program form, program content and other aspects in order to gain more room for development. With the development of big data, if radio and television practitioners want to keep up with the times and play their role and value, they must constantly improve their comprehensive quality, including not only upgrading their professional skills, but also spreading advanced media concepts to accurately grasp the tastes and needs of the audience.

III. The Transformation of Radio and Television Technology in the Era of Big Data

A. Using Internet Technology

The Internet can be said to be the symbol and foundation of the big data era. Without the popularization of the Internet, there would be no big data era. For the emergence and development of radio and television new media, network technology is also an important support. Radio and television networking is the product of the combination of Internet and traditional radio and television. By adopting traditional radio and television forms, the independent production of multimedia information can be realized, which can make the advantages of Internet such as richness and interactivity better play [11]. In order to cater to the audience's taste, it is necessary for radio and television to innovate, keep up with the times, and reshape the program concept in the process of grasping the reality of life, so as to create excellent, far-reaching and long-lasting works. In the operation of Internet TV, besides some ideas and spirits that must be spread, the needs of users are the main content that the media needs to show and spread. One of the great advantages of Internet thinking is to focus on “user experience”, to know what users need and hate, and to filter data and information and transmit them to users. Figure 3 shows the measurement and functional structure of the intelligent information management system.

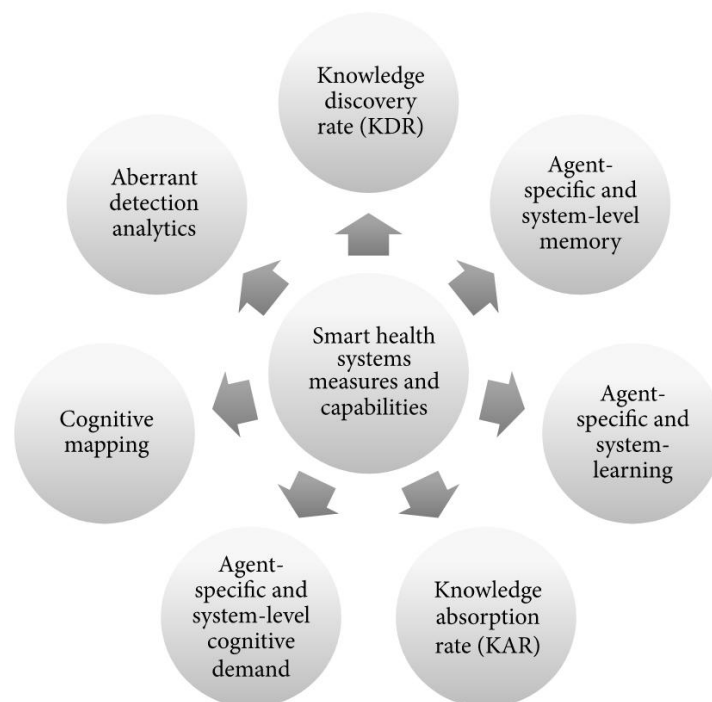


Fig.2 Measures and Capability Structure of Intelligent Information Management System

With the help of new media technology, radio and television media have expanded their advantages and enriched the program content, which not only improved the visibility of the program, but also made the topic continuously updated. Under the background of new media era, media practitioners should not only have advanced new media

communication concepts and master skilled professional skills, but also make clear the audience's actual needs for information communication, so as to improve the program ratings. For the products that users search, visit or buy on the digital TV shopping channel, users' preferences can be analyzed through big data, and similar products that users prefer can be presented under the purchase list. The operation of radio and television should change the traditional thinking and have internet thinking. For those enterprising decision makers, it is important to define the business model and mine the correct data. Of course, the most important thing is how to distinguish the audience's preferences, so as to ensure that the TV media's decisions are consistent with their feedback.

B. Adopt Innovative Operation Mode

In the previous radio and television operation mode, the audience can only passively accept TV programs, but can't choose programs according to their own preferences. This feature makes radio and television have obvious disadvantages compared with intelligent media devices such as mobile phones and computers, and people are often more willing to choose TV programs independently in the network intelligent system. If radio and television want to recover the audience diverted by new media, it is necessary to build brand-name TV news programs, identify the market positioning of radio and television programs, and improve and innovate radio and television programs by grasping the actual needs and interests of the audience and fitting the interests of the audience. Ordinary one-way thinking mode is generally narrow, so the innovation ability of radio and television can be continuously improved through the organic combination of forward and reverse thinking. If radio and television want to regain the vigor and vitality in the media market and re-attract the audience lost before the transformation, it should borrow the new media mode moderately and realize its combination with the traditional program form [12]. In the process of playing TV programs, the audience can participate in the program interaction through the WeChat QR code by setting the WeChat official account QR code at the bottom of the screen, thus making the program form more novel. Traditional radio and television stations should seize the opportunity, fully display the unique advantages of traditional specialization and high-quality programs in the process of social networking, and develop towards higher and more professional network radio and television stations on this basis. Figure 3 shows the structure of digital resources construction under the information ecology.

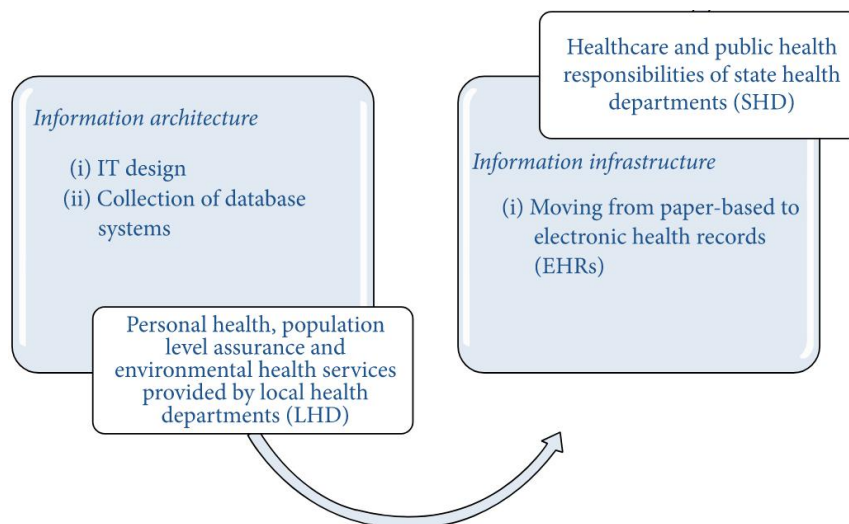


Fig.3 Digital Resources Construction Structure under Information Ecology

In the process of transforming radio and television technology, we should not only keep up with the pace of development of the times, but also innovate on this basis, so that radio and television have further advantages that other media methods, such as network television, do not have. Audiences tend to have more affection for things that can bring them intuitive experience. Therefore, we can enhance the activeness of radio and television in people's minds through the interactive enhancement of WeChat and Weibo, and then enhance the network

influence. The editing and creation of radio and television programs can not be separated from the continuous cultivation and stimulation of inspiration. After a lot of creative experience, more and more inspirations will emerge, and the continuous emergence of inspiration will in turn promote the innovation and quality improvement of programs [13]. Radio and television directors should reasonably grasp the overall style of radio and television programs, cultivate audience loyalty by using friendly program styles on the premise of meeting audience viewing needs, and attract more audiences by creating brand programs with mass base. In the process of transforming radio and television technology, the user service system should be further improved, so that users' opinions and suggestions can be directly reflected in the hands of relevant staff. On this basis, a special service team should be established to respond to users' opinions and suggestions in a timely manner, so that radio and television technology will continue to develop in the direction of audience preference.

IV. Conclusion

Today, with the rapid development of Internet technology and the increasing popularity of online viewing platforms, the traditional radio and television industry has been greatly impacted. In this case, if the radio and television practitioners can't change their thinking in time, make double innovations in content and form, and can't meet the diverse and varied interests and needs of customers in time, they will be eliminated by the market. In the era of big data, traditional radio and television have been impacted by emerging media, so it is necessary to transform radio and television technology at this stage to better meet the needs of the times. In the new media era, radio and television directors are actively reforming and innovating, and in this process, with professional ideas, professional services, professional programs, and keeping up with the development of the times, they will surely gain higher development space under the platform of the new media era. The innovation of radio and television directors should be based on the current situation of the industry and itself and the media background of the new era, and constantly integrate themselves with the network, and constantly increase the interaction with the audience. Using innovative technology to develop new radio and television media in the era of big data is a process of continuous efforts and exploration, and it is necessary to persist in making progress to achieve excellent results. The era of big data has an extremely important impact on the transformation of TV media. All TV media should make strategic plans to meet the profound transformation in the era of big data.

References

- [1] Wang Jiali. Talking about the application of big data in radio and television grid marketing[J]. China Cable TV, 2016, 367(04):18-20.
- [2] Yang Wenting. Talking about the application of big data technology in radio and television monitoring[J]. Science & Technology Communication, 2018, 10(23):79-80.
- [3] Fang Yuan. Research on the transformation of broadcasting and television technology based on big data [J]. Science & Technology Communication, 2016, 8(023): 64+112.
- [4] Zheng Yingying. Research on the Training Model of Diversified and Applied Talents Majoring in Radio and Television Directors in the Big Data Era[J] . West China Radio and Television, 2018, 429(13):61-62.
- [5] Liang Yajuan. Research on the Transformation and Development of Broadcasting and Television Technology Based on Big Data[J]. Digital Communication World, 2020, 183(03):148-148.
- [6] Baltiiski P, Iliev I, Kehaiov B, et al. Long-Term Spectrum Monitoring with Big Data Analysis and Machine Learning for Cloud-Based Radio Access Networks[J]. Wireless Personal Communications, 2016, 87(3):815 -835.
- [7] Singh R, Singh E, Nalwa H S. Inkjet printed nanomaterial based flexible radio frequency identification (RFID) tag sensors for the internet of nano things[J]. RSC Advances, 2017, 7(77):48597-48630.
- [8] Vujic D S, Certic J D. Modelling of ultra high frequency television band radio signal propagation in underground mine environment[J]. Wireless Networks, 2019, 25(4):2117-2128.
- [9] Balakrishnan M, Meerja K A, Gundugonti K K, et al. Design of interfaces between high speed data converters and high performance FPGAs for software defined radio applications[J]. Telecommunication Systems, 2019, 71(4):601-614.

- [10] Wu Xiaohang. The transformation of broadcasting and television technology based on big data[J]. Wireless Internet Technology, 2018, 015(002):116-117.
- [11] Lu Jing. Research on the Application of Big Data in the Development of Radio and Television Industry [J]. Radio and Television Technology, 2016, 043(007): 16-20.
- [12] Hu Qingqing. New opportunities for the development of radio and television networks in the era of big data[J]. News Research Guide, 2016, 7(009):335-335+340.
- [13] Niu Xuefeng. Analysis of the transformation and development measures of broadcasting and television technology in the era of big data[J] . Science and Technology Communication, 2017, 009(015):46-47.