

# A Brief Analysis of the Evolution of Audio Language Communication in the Internet Age

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**Abstract.** With the popularization of the internet, audio language has rapidly developed into a powerful force. According to data analysis from iiMedia Research, the active user scale of the Chinese audio industry reached 800 million in 2021. This paper analyzes and explains the evolution of audio language in terms of content, technology, copyright, and other aspects, in order to sort out the development context of audio language and explore its communication laws and trends. In the development process of audio language, emphasis should be placed on intelligently presenting audio information, building an audio ecological closed loop, and collaborating to improve market rules to achieve more comprehensive and efficient progress.

## 1 INTRODUCTION

Language is a social product that serves as a bridge for interpersonal communication and a tool for establishing common understanding. Spoken language includes various forms, such as radio broadcasts, verbal statements, scientific reports, recitations of excellent literary and artistic works, dramas, movies, cross-talk, storytelling, and other forms, as long as they conform to the norms of literary language.

Traditional spoken language is mainly carried by traditional media such as radio and television, while spoken language on the internet is mainly presented in the form of online audio. In this paper, the spoken language on the internet is referred to as "online audio," which mainly refers to network audio forms related to hosts or broadcasters such as audio programs, live audio broadcasts, web radio, and audio books, and tends to comprehensive audio platforms (such as Lizhi, Ximalaya, Qingting FM, etc.), excluding digital music. These audio contents can be listened to through online transmission or downloaded to personal devices for listening.

## 2 LITERATURE REVIEW

With the rapid development of Internet technology and the popularization of artificial intelligence technology, audio content has attracted extensive attention in the era of the Internet. A search on CNKI platform for "audio content" resulted in 3,536 articles, 860 articles for "online audio," and 90 articles for "Internet audio content." The dissemination and forms of audio content have undergone significant changes and evolution. This review will analyze the dissemination and evolution of audio content in the Internet era from the following three aspects:

### 2.1 The Transformation in the Era of Intelligent Communication

In the internet age, the forms of audible language communication are becoming increasingly diverse. In addition to traditional forms such as radio, television, movies, music, and audiobooks, there are now many more online audio formats, such as music, radio stations, podcasts, and audiobooks. Yu Ning in his article "Transformation of Audible Language Communication Roles: Media Analysis Based on 'National Trend Dance Steps'"<sup>1</sup>, discusses the new era of traditional media and emerging media integration, with traditional television media competing to leverage new media small-screen live streaming to create more high-quality content for cross-screen communication. Xia Xiaochen, in "On the Arc of Intentions in Audible Language Creation in the Era of Intelligent Media"<sup>2</sup>, mentions the great challenge that Dreyfus's non-representational intelligence thought brings to the representationalism of artificial intelligence. Audible language creations have a high-level pursuit, manifested in the dialectical relationship among cognition, perception, and intuition. In the era of intelligent media, there will be breakthroughs in audible language creations.

### 2.2 The "Trap" of Self-Media Communication Channels

A search in CNKI using keywords "self-media," "communication," and "trap" finds 106 articles. Wang Youfeng, in "Characteristics and Discourse Trap of Self-Media Communication"<sup>3</sup>, explains self-media, citing a "We Media" report by Bowman and Willis. "Self-media"

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refers to citizen media, including blogs, microblogs, WeChat, and forums. Tacitus proposed the "Tacitus Trap" theory, where society gives negative evaluations when public power loses credibility. In the Internet + self-media era, audible language communication is no longer limited to traditional channels, making it more convenient and free, but also prone to the "Tacitus Trap." Wen Zujun and Chen Fangxin discuss concerns about self-media's rapid development in "How the Government Can Overcome the 'Tacitus Trap' in the Self-Media Era"<sup>4</sup>.

### 2.3 The Evolutionary Development Direction of Audible Language

Bai Guiren and Qingqing's "Trends and Impacts of Audible Language Communication Innovation in the AI Environment"<sup>5</sup> discuss how AI and new technologies accelerate audible language communication, leading to subject, space, and expression transformation. They analyze the manifestations and impacts of these trends on information dissemination laws, cultural connotations, and aesthetic standards. Huang Lei's "Overcoming the 'Tacitus Trap' - Dilemma and Breakthrough of Mainstream Discourse Power in the Self-Media Era"<sup>6</sup> suggests maintaining stance, enhancing credibility, seizing opportunities, setting discourse themes, and optimizing innovative carriers as feasible paths for mainstream discourse power in the self-media era.

These articles have explored and contemplated the breaking of the monopoly of mainstream discourse power due to the rise of self-media and proposed constructive countermeasures for the direction of self-media development. Based on the literature analysis and summary, this paper will discuss the evolution of internet audible language from various aspects, including content quality, technological development, user needs, and copyright issues. Once technology reaches a certain stage, it will ultimately return to the realm of content and user needs. No matter how far "innovation" goes, it will eventually return to the essence of content demand.

## 3. THE CURRENT SITUATION OF THE DISSEMINATION OF AUDIO LANGUAGE IN THE INTERNET ERA.

In the past few decades, the dissemination of audio language has undergone many changes and evolutions. Around 2017, traditional broadcasting gradually declined from its "golden age," and audio programs carried by audio language began a rapid development path, benefiting from the application of artificial intelligence technology, bringing about great changes to the dissemination of audio language.

### 3.1 The "Ear economy" bursts with development vitality

The China Business Industry Research Institute released the "2022 Forecast Analysis of China's Online Audio Industry Market Status". The revenue of China's online

audio market increased from 2.5 billion yuan in 2017 to 20.6 billion yuan in 2021, with a compound annual growth rate of 69%.

According to data from iResearch, China's online audio market revenue has increased significantly from RMB1.2 billion in 2015 to RMB27.2 billion in 2020, accounting for 17% of the world's total market scale. It is expected to reach RMB54.3 billion in 2022.



Fig.1 China's online audio market revenue

Data source: iResearch, designed by Daxue Consulting, China's online audio market revenue, 2015-2022

The "China New Media Development Report (2020)" mentioned that the "ear economy" bursts with development vitality, and digital audio has advantages in meeting the needs of specific groups such as children and the elderly due to its accompanying and listening attributes. With the accelerated commercial promotion of 5G technology, all-scenario intelligent audio applications such as in-car audio, smart watches, smart speakers, and smart homes are also growing rapidly, and the audience is developing in a diversified manner.

### 3.2 The "small universe" of the Z generation explodes

The epidemic deepened the demand of domestic netizens. The user scale of online audio apps continued to expand, and various niche audio apps also experienced certain growth, such as the sleep audio apps Snail Sleep and Xiaoshui Sleep. Taking the podcast platform "Small Universe," which is currently popular among young people, as an example, since its internal testing was opened in March 2020, the cumulative downloads of Small Universe on Android and Apple channels have reached 19.3649 million and 2.3412 million, respectively. According to a survey of Chinese podcast audiences by JustPod in 2022, Small Universe's user usage rate on various podcast platforms or streaming media platforms reached 74.6%, far higher than Apple Podcasts and other veteran podcast platforms as well as large audio media such as Himalaya and NetEase Cloud.

The text is discussing the current state and trends in China's audiobook industry. According to the "2022-2028 China Audiobook Market Survey and Investment Strategy Report" by Co-Watch.com, the industry is predicted to have 420 million users and a market size of 9.37 billion yuan by 2022. The data from iiMedia

Research shows that audiobook users are mainly younger, with a dispersed and spindle-shaped age distribution. The report also found that men make up a larger proportion of audiobook users than women, and that 31-40-year-old users are the main listeners, followed by 26-30-year-old users.

### **3.3 Mainstream Media Shifts Focus and Makes Efforts**

Traditional radio stations have shifted their focus to the internet by settling on platforms such as Himalaya, Qingting FM, and Lizhi. As a result, mainstream media has developed its own mobile internet platforms, such as Jilin People's Broadcasting Station's Mu'er FM and Guangdong Radio and Television Station's Yue Ting client, which offer localized and vertical audio services. In 2020, China Central Television (CCTV) released the "2020 White Paper on 5G Media Applications of China Central Television", and launched the "Yun Ting" app, a sound aggregation platform, to expand its influence in the mobile internet market. Wu Jingyan, deputy director of the Southern Metropolis Daily's integrated media center, stated that audio news is a new path for media integration under the background of comprehensive strategic transformation.

## **4. EVOLUTION OF THE DISSEMINATION OF INTERNET AUDIO LANGUAGE**

The internet era has brought different definitions of how audio language is presented, and with it, changes in user demand. Various audio programs have undergone an evolution from traditional media to digital and intelligent media.

### **4.1 Diversification of content form and style**

With the development of digital technology and changes in user demand, the form and style of audio programs have become more diversified, including news, music, talk shows, education, culture, entertainment, and other types. At the same time, these programs also pay more attention to personalization and customization to meet the needs of different users. With the empowerment of 5G and all-scenario intelligent devices, scene listening devices have also seen a rapid growth trend.

### **4.2 Cross-platform dissemination**

Traditional radio stations could only broadcast audio programs through radio waves, but now audio programs can be disseminated through various channels such as the internet, social media, and smart speakers, achieving cross-platform dissemination.

The car audio market has become the main battleground for audio. According to the Automobile Industry Association, the number of vehicles in China is about 320 million in 2022. With the continuous development of 5G/VR technology, the scale of China's

connected car market is expected to increase from 210 billion yuan in 2021 to 800 billion yuan in 2026. Audio language will have great potential in the field of car audio.

### **4.3 Data analysis and personalized recommendations**

Hu Zhengrong, the general editor of China Education Television Station, once pointed out that "voice will be the next huge entrance to the Internet, connecting everything." Audio programs have generated a large amount of user data in the digital age, which can be analyzed and utilized through artificial intelligence technology to help producers understand user needs and preferences and produce programs that better meet user needs. In addition, personalized recommendation algorithms can recommend programs that users like to them, increasing user retention rates and loyalty.

### **4.4 Real-time interaction and socialization**

The development of digital technology has also brought the possibility of real-time interaction and socialization to audio programs. Audio live broadcasts have the same attributes as video live broadcasts, and they do not require revealing one's face, which increases the mystery and concealment and is more popular with listeners. The interactive attributes also increase user participation and interaction. Meanwhile, some applications also provide real-time commenting, liking, and other interactive functions, strengthening the interaction between users and programs.

## **5. DEVELOPMENT DILEMMAS OF INTERNET AUDIO LANGUAGE**

With the advent of the intelligent era, Internet audio language has become an important means for people to obtain information, entertainment, and learning, but it also faces some development dilemmas.

### **5.1 Uneven Content Quality**

In recent years, with the gradual expansion of the online audio market, the problem of uneven content quality has become increasingly prominent. In 2020, Himalaya was interviewed by the Zhejiang Provincial Consumer Rights Protection Committee due to issues such as false advertising for its membership advertisements. One Listen Audio, an online audio platform, has also received complaints and criticisms from users due to issues such as piracy, low quality, and false advertising. Many users feel confused and disappointed when using such platforms. In addition, some users also complain about the recommendation algorithm of some platforms, which recommends content that does not match their interests and needs, further reducing their trust and satisfaction.

## 5.2 Imperfect Profit Models

In 2020, the global online audio market was approximately 30.61 billion US dollars, and it is expected to reach 59.99 billion US dollars by 2027, with an annual compound growth rate of 10.1%. Online audio mainly includes user subscription services and advertising-supported radio services. In 2019, subscription services accounted for 57.88% of online audio revenue, and subscription fees have become the main source of online audio revenue.

Compared with other content forms such as video and text, the profit model of online audio has not been fully developed. Although some platforms have achieved profitability through subscription services, the profit model is too single. Moreover, for most users, they are more willing to choose free online audio content, which makes the commercialization and profitability of online audio content more difficult.

## 5.3 Inadequate Copyright Protection and Management

Due to the flexible dissemination methods and channels of online audio, copyright management and protection are relatively difficult. This has also led to a decline in the enthusiasm for creating online audio content, which has had a certain impact on the long-term development of the online audio industry.

In 2019, China's Judicial Document Network released a first-instance judgment document in which Tencent Music sued NetEase Cloud Music for copyright infringement of Jay Chou's songs. The judgment showed that companies such as NetEase Cloud Music had to compensate Tencent Music for economic losses and reasonable expenses for stopping infringement totaling 850,000 yuan. At the same time, NetEase Cloud Music still has problems such as storing pirated songs, lax platform review, and a large number of cover songs. In recent years, this problem has been somewhat improved under the requirement of mandatory real-name registration, but similar events still occur frequently on other platforms, especially some niche platforms, where user flow is frequent and regulation is difficult.

## 6. EVOLUTION STRATEGIES FOR INTERNET AUDIO LANGUAGE

The evolution of internet audio language is an ever-evolving field that involves multiple aspects such as content production, intelligent audio technology, user service, and copyright management.

### 6.1 Evolution of Content Quality

In today's digital age, an increasing number of people choose to listen to audio content over the internet, such as paid audio, podcasts, audiobooks, and radio dramas. This trend has become particularly evident in the past few years and is expected to continue to grow. In this fast-developing industry, the quality and innovation of

content have become the key factors that determine the success of audio language.

**6.1.1** The concept of "content is king" has become increasingly important in the internet audio language industry. Unlike traditional media, internet audio content is not limited by time and space, and people can listen to it anytime and anywhere. Therefore, compared to other media forms, internet audio content requires unique and attractive content to attract listeners. Only by providing high-quality and interesting content can producers win the attention and loyalty of their audience.

**6.1.2** The market for audio language content has become more segmented and diversified. Nowadays, different forms of audio content, such as audiobooks, radio dramas, and podcasts, have emerged. This diversification requires producers to pay more attention to content quality and diversity to attract different types of listeners. At the same time, in order to meet the needs of their audience, audio content producers need to continuously improve and innovate based on listener feedback, ensuring that their content remains in touch with their audience.

**6.1.3** Innovation and diversity of content are important factors for the success of the audio language industry. Audio content producers need to integrate new technologies and innovative thinking into the production process to break traditional modes and experiences. For example, virtual reality technology can allow listeners to experience the story in an immersive way, while AI voice synthesis technology can improve the production efficiency and quality of audio content. Therefore, with the continuous development and application of new technologies, the future of internet audio language is full of innovation and infinite possibilities.

### 6.2 Development of Technology

Online audio is a fusion of technology and art. In the traditional broadcasting era, the technology of recording, editing, and playing audio was controlled by a small number of technicians. With the advent of the internet era, this highly difficult technology has become simple and easy to operate, and ordinary audio creators can easily complete the production process.

Currently, speech recognition, speech synthesis, and audio encoding and decoding technologies have gradually matured, enabling internet audio language to achieve more accurate and natural speech input and output. In addition, the continuous development of artificial intelligence technology has also provided a broader space for the application of internet audio language.

### 6.3 Evolution of User Demands

With the continuous progress and popularization of technology, the user demand for internet audio language

is also constantly evolving. Initially, users' demand for audio language content was mainly to be able to listen to their favorite songs or radio programs anytime and anywhere, but today's users not only expect online audio services to provide high-quality sound and smooth playback experience but also hope that these services can recommend audiobooks, knowledge content, and radio dramas that match their own taste. Therefore, some online audio services have started to use artificial intelligence and machine learning algorithms to recommend content that users may be interested in based on their history of listening and rating records.

In addition, users also expect online audio services to provide more social interaction and user participation experiences, such as interactive live broadcasts, online discussions, and user-generated content. Therefore, online audio services need to continuously innovate and improve their user service to meet the evolving demands of their audience.

## 7. CONCLUSION

With the development of the internet era, audio language communication has become a new and emerging form of media, showing a trend of rapid growth. Audio language communication has highly interactive and participatory characteristics, can create rich and colorful sound content, thus satisfying users' demand for diversified sound resources. At the same time, the convenience, speed, real-time, and global dissemination and reception of audio language communication also make it a popular form of media. The evolution of audio language communication can be traced back to the emergence of network broadcasting, and now has developed into a diversified form of communication including podcasts, web radio, voice social networking, and so on. Driven by voice technology, audio language communication has profoundly affected social life and the media industry, changing the way people obtain information and entertainment, promoting the dissemination of information and the development of innovation.

In the future, audio language communication in the internet era will continue to develop rapidly, presenting trends such as personalized and customized services becoming mainstream, more diverse and refined content trends, and further development of voice technology providing more possibilities for audio language

communication. However, audio language communication in the internet era also faces some challenges, such as the balance between the quality and quantity of content creation, copyright protection issues, technical limitations, and data security issues. To better cope with these challenges, the audio language communication industry needs to continuously innovate and explore technology, strengthen copyright protection and information security, and actively explore new business models to better adapt to the changes and development of the internet era.

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