

A Case Study on the Transformation of Chinese Opera Radio under the Ecological Environment of Media Integration

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Abstract

Chinese opera is one of the important art forms in Chinese traditional culture that has a long history and rich forms of expression. Media integration in Chinese opera broadcasting refers to the combination of traditional opera art forms with modern broadcasting technologies to meet the communication needs and technological development trends of contemporary society. This study investigated the state of media development based on the media ecology theory. This study explored media integration in Chinese opera broadcasting using case study methodology to describe multimedia communication methods adopted by the broadcasting stations to increase the listening rate. Study subjects were three Chinese opera radio programs. The research results show that Chinese Opera broadcasting has begun to use various media technologies to carry out media integration development, inject new vitality into traditional art forms, and increase the appeal to contemporary audiences. The research also found that with the continuous progress of technology, Chinese Opera broadcasting will have greater space for development in the future and bring better listening experience to the audience.

Keywords: Chinese Opera Radio, media ecology, media convergence, transformation, modern technology

1. Introduction

Chinese opera is a performing art form with a profound history and cultural heritage. It originated from ancient rituals, dances and singing activities, and gradually integrated various performance elements such as singing, acting, reciting and playing resulting in a unique performance style. A variety of local opera types such as Peking Opera, Yueju Opera, Yu Opera, and Sichuan Opera arose during Chinese opera's development. The opera types varied with region, ethnicity, and time period (Mongol, 2019).

The "Variety Opera" and the "Scattered Opera" commenced as early as the Tang Dynasty. In the Song and Yuan dynasties, opera gradually became a popular form of entertainment, with the emergence of pioneering forms such as "miscellaneous operas" and "southern opera" due to the development of commerce and cities. While during the Ming and Qing dynasties, local operas gradually grew in popularity and formed a variety of subgenres. Beijing opera emerged in northern China and eventually became a popular form of opera throughout the country especially between the late eighteenth and early nineteenth centuries (Li, 2022).

In modern times, traditional Chinese opera has transitioned to modern Chinese opera that is intermingled with Western theatrical elements. Chinese opera has simultaneously faced various challenges and opportunities due to the popularization of television, movies, and the Internet (Zhang, 2023). Consequently, the influence of traditional opera is gradually weakening among the younger generation. However, this decline in popularity of Chinese opera has opened up opportunities for innovation and international promotion of opera. Recently, more young artists and groups have devoted themselves to the modern interpretation and innovative practice of traditional opera to revitalizing this ancient art form in the new era (Du & Li, 2022).

Media integration in Chinese opera broadcasting has advanced from single to multiple media forms and from traditional to modern forms. As early as the mid-20th century, opera was broadcasted through radio stations as a single form of broadcasting. Subsequently, the emergence and popularization of television offered a richer platform for the presentation of opera. At the beginning of the 21st century, the rise of the internet and social media brought opera unprecedented opportunities and challenges. Opera works began to be presented on multiple online platforms and

gradually attracted younger audiences (Cai, 2022). In recent years, the application of big data and artificial intelligence technology has enabled opera broadcasts to engage in more personalized and precise content pushing. This evolutionary process not only promotes the inheritance and development of opera culture, but also reflects the continuing technological and conceptual changes in China's media and cultural industries (Tong & Cao, 2023).

Media convergence in Chinese opera broadcasting has undergone a transformation from traditional media forms to modern media forms. Initially, broadcasts were mainly made through radio and television platforms that focused on single broadcasts and limited audience interaction. With the popularization of the internet and social media, opera transitioned to online platforms and mobile applications broadening its audience reach and enhancing its content diversity. Modern opera broadcasting includes not only the traditional broadcasting of opera works, but also covers multiple dimensions such as education, commentary and interaction. The application of big data and artificial intelligence has injected new vitality into the traditional art form through personalized and precise content marketing (Wei, 2023).

Chinese opera broadcasting fusion media presents a deep combination of technological innovation and traditional culture. At the content level, opera broadcasting not only preserves classic repertoire, but also incorporates modern elements to attract young listeners. Modern technologies such as streaming media, mobile applications and smart audio have been utilized to conveniently disseminate opera content. Furthermore, social media and digital platforms enhance the interactivity of opera broadcasting and increase listener participation.

Mass communication has undergone tremendous changes in the new era. Art appreciation programs in radio that are challenging to expand due to limited means of communication now face the dilemma of aging and marginalization (Zhang, 2021). The opera broadcast therefore has to navigate how to use the new media platform to expand the art audience, popularize the art to the young generation and non-fans, and popularize the traditional opera.

2. Literature Review

2.1 Media Ecology

Media ecology as a field of study aims to provide insights into the impact of media technologies on human communication, cognition, culture and social structures. The main theoretical foundations of media ecology are largely inspired by Marshall McLuhan whose famous phrase "the medium is the message" emphasizes the decisive role of media forms in the interpretation of messages (McLuhan, 1964). Neil Postman furthered the development of media ecology by arguing that different media shape different types of public discourse and ways of thinking (Postman, 2005).

In recent years, the field of media ecology has expanded with the rise of digital and social media. Lum's (2006) study points out that the dynamic relationship between traditional and new media encompasses redefining personal identity, community belonging, and access to and interpretation of information. Concurrent research has also focused on how social media are changing people's daily communication patterns and social interactions (Boyd, 2010).

However, media ecology has also faced criticisms especially with regard to its theoretical and methodological applications. Strate (2008) emphasizes that although media ecology provides a macro perspective for understanding media environments, its applicability to the study of specific media practices and interactions remains limited. In addition, the technological determinist stance of media ecology has been criticized for potentially ignoring the role of social, cultural and political factors in the development and adoption of media technologies (Fuchs, 2020).

Overall, media ecology provides an insightful framework for analyzing how media technologies shape our lifeworld. Future research should explore changes in media ecology in the era of globalization and digitization, especially the role of such changes in maintaining the relevance and application of theory in the face of emerging new media forms.

2.2 China Opera Broadcastig (COB)

Chinese opera broadcasting, an important channel for cultural dissemination, plays a key role in preserving and promoting traditional culture and enhancing cultural soft power. According to Jia (2021), since the birth of radio, opera has occupied half of all broadcast arts and cultural programs. For traditional audiences of opera art, radio and other audio media are the channels they are familiar with and accustomed to for appreciating opera art rather than TV and live (theater).

Opera is an "aging" art form, and its core audience is mainly the middle-aged and the elderly. But the future survival and development of the art of opera appears dismal since the younger generation have limited interest in opera stemming from changes in their educational background, living environment and aesthetic orientation (Jiang, 2022).

The digital era not only brings challenges, but also unprecedented opportunities for traditional opera. High-definition video technology accords an audience a realistic opera experience (Zhang, 2023). Interactive technology allows an audience to participate in a performance and enhances their viewing experience. An audience's preferences can be

analyzed through big data and used to modify performance content. Artificial intelligence technology combines opera with modern technology to create new art forms.

Therefore, future research needs to explore how to attract young listeners through technological innovation and content reform while maintaining the traditional characteristics of opera art. Chinese opera broadcasting is an important part of the national strategy of cultural inheritance and promotion, and has an irreplaceable role in the protection, popularization and development of traditional art forms. In the future, Chinese opera broadcasting should adapt to the changing media environment and expand its audience base to attract the younger generation.

3. Methods

The current study was a qualitative case study, a research methodology that explores a broader issue or phenomenon by examining one or more specific instances (i.e., "cases") in depth and detail (Thomas, 2021). The study utilized multiple cases for research who were purposively sampled to provide in-depth, detailed, and targeted insights that were critical to a specific research question or purpose (Campbell et al.,2020).

Case A was Shanghai Opera Radio's "Opera Seconds"FM97.2 (Zhang ,2021), which attempts to mend the broken circle of traditional opera in the modern society by integrating radio with new media, offline resources and promotion channels, and systematic spreading them as an integrated media mode. Case B was Jiangsu Literature and Arts Radio's "Pear Garden Walk"FM9.4 (Zhao & Hua,2017) which had won many honors and awards. Case C was a famous brand name program in the industry, Henan Radio's "Zhou Di Drama"FM105.6, which had received widespread attention and praise from its audience (Zhao & Hua,2017). Qualitative data was obtained from complete radio programs that had been produced and broadcasted in the past. The researcher conducted repeated observations and in-depth analysis of the data using content analysis to investigate new media usage adopted by Chinese opera broadcasting in the process of media convergence. Research materials also included wechat public accounts, websites, Tiktok accounts, and APP published content in a week.

Content analysis is an analysis method for studying the content of various data, such as visual and verbal data. It facilitates the attribution of phenomena or events to defined categories for interpretation (Harwood & Garry,2003). Content analysis technique is very flexible and can be both empirically and theoretically driven (Stemler,2015). Content analysis is a powerful tool for determining authorship, examining trends and patterns in documents, and providing an empirical basis for monitoring shifts in public opinion (Stemler, 2000).

Utilizing content analysis, this study examined the communication methods used by Chinese opera broadcasting during media convergence to provide a reference model for the innovative development of traditional Chinese opera culture and traditional broadcast media in the state of media convergence.

4. Results

4.1 Digital Communication

Digital communication is a developmental aspect of the world of communications and media where information elements such as text, photos and sounds are converted into strings or symbols starting with 1s and 0s for storage and transmission. The main manifestation of digital communication is the internet (Alshawi, Alghaithi, Alrayssi, & Alsuwaidi, 2022).

Internet innovations have placed radio at the center of interactive social communication. Radio listeners can interact via a website, email or other chat methods. Such an interactive mode of communication enables radio listeners to actively participate in the information broadcasting process. Radio listeners are no longer just radio connoisseurs, but are also information providers akin to journalists. Such advantages have strengthened the role of broadcasting in the digital age. Digitalization has made radio more accessible and enabled it to survived fierce competition from various media types in the age of disruption (Rachmawati & Afifi, 2022).

The three selected cases in this study began to gradually transform to digital media, establish their own network platforms, and provide online live broadcasting, playback and on-demand services through websites and applications with the rapid development and wide popularization of information technology. Figure 1 shows that all three cases have adopted rich digital distribution methods that greatly enhance their programs' accessibility and permit listeners to select what to listen to.

Digital communication also promotes innovation in program content. Traditional opera broadcasting is limited by time and space, but radio stations can provide richer and more diverse content to meet audiences' needs on a digital platform.

For example, "Pear Garden Walk" aired the unit "Campus box office" every Saturday afternoon and often invited opera experts into the studio to share opera knowledge with students and young people. Expert information on opera was provided so that young people could understand the traditional culture of the Chinese nation. Often college students and

graduate students were invited to the studio to chat with the host and guests about a specific drama, singing and discussing. Not only did the program enrich the college students' spare time, but it also disseminated opera art throughout the university campus.

Table 1. The digital media used by the three cases in this study

Media Name	Mode of transmission
Shanghai Opera Radio	Website
	APP
	TIKTOK
Jiangsu Literature and Arts Radio	Wechat public account
	Weibo
	Website
	APP
	TIKTOK
Henan Radio	Wechat public account
	Weibo
	Website
	APP
	TIKTOK
	Wechat public account
	Weibo

4.2 Integration of Social Media

Social media plays an increasingly important role in our daily lives and thus provides new communication opportunities for opera broadcasting. By establishing official accounts on social media platforms such as TIKTOK, WeChat and Weibo, opera broadcasting can both gain more regular listeners and users and directly interact with its listeners for first-hand feedback and suggestions.

TIKTOK (Chinese: DouYin; formerly known as musical.ly) is currently one of the most successful Chinese social media apps in the world. Since its inception in September 2016, TikTok has gained widespread popularity particularly among young listeners that attracts them to watch, create and comment on "LipSync-Videos" on the app (Montag, Yang & Elhai 2021).

The researcher selected the three most popular works from the TikTok accounts of the three media outlets. Figure 2 shows that the use of social media had a positive impact on opera broadcasting by attracting more attention and engagement.

Table 2. Radio on social media

Media	Top 3 works	Number of fans	Number of likes	Number of comments
Shanghai Opera Radio	1. Man drinks and comes home in the middle of the night, his mother "knocks" him with a stick.	840,000	179,000	16,000
	2. A man scattering money from a height attracted onlookers		117,000	45,000
	3. Little girl training her pet dog to walk		105,000	3,642
Jiangsu Literature and Arts Radio	1. National Tide Brand Sales	5,134,000	3,103,000	251,000
	2. Little girl runs to the window to eat bread		2,466,000	253
	3. A woman's gender dysphoria		2,429,000	286,000
Henan Radio	1. Two newlyweds call out for hand bouquets	30,169,000	9,903,000	581,000
	2. Pedestrians help each other during floods		9,021,000	576,000
	3. Henan Xinguan Medical Team Returns Home		7,255,000	372,000

The interactivity of social media furnishes a news media platform with novel ideas for opera broadcasting. For example, radio stations can broadcast quizzes, voting, challenges and other activities about opera to encourage listeners to participate and to increase the influence and reach of opera. "Central Plains Opera Fans Contest" is a key feature of the "Zhou Di Drama" that is broadcasted every Tuesday, Wednesday, Thursday and Saturday. Contestants, with no regard for age, identity or any other restrictions, should only be willing to participate because every ordinary people can sing on stage.

At the same time, social media has brought new audience groups to opera broadcasting. The younger generation who may not be familiar with or interested in traditional opera are exposed to and can recognize this traditional art in a whole new way through social media.

4.3 Multimedia Integration

Audio is only one way to convey information and art. But multimedia fusion provides a richer and more three-dimensional communication path for opera broadcasting. For example, a radio station can provide relevant video, pictures, text and other content, in addition to traditional audio content, to give listeners a more comprehensive and in-depth experience.

Figure 1 shows that the three radio stations not only aired audio radio programs to users through their portals and social media, but also aired pictures, texts and videos that were relevant to the audio content to enrich users' experience.

Such multimedia integration enriches the form of content and effectively improves communication. For example, a radio station can provide audio, video, behind-the-scenes production, background information about a play, artists' interviews and other content for a classic opera work for listeners to understand and appreciate a work of art from different perspectives.

Shanghai Opera Radio has recently produced the short-video knowledge product "Opera Seconds" for popularizing opera, the live video broadcasting product "Behind the Scenes," and the short-video documentary product "Xiao Cao Watching Theatre" to meet the preferences of younger audiences. Shanghai Opera Radio produces opera knowledge in the form of short videos and puts them on BILIBILI, a video website popular among Chinese young people.

One derivative product of the online interview program of Opera Radio exemplifies multimedia intergration. Zhou Di Drama invites famous opera artists to talk about opera knowledge. Famous opera artists come to the station and record a three to five minutes' broadcast video on knowledge of opera. This short video that is usually released on the official WeChat of the Opera Radio has so far obtained positive feedback and dispelled any doubts that young people may have had about the art of opera.

4.4 Interaction and Participation

While traditional media tends to be a one-way communication, modern opera broadcasting focuses more on a two-way interaction with its audience. Listeners can directly participate in the production and dissemination of programs, such as asking questions, commenting, sharing and voting through digital platforms and social media.

Such an interaction increases program attractiveness, audience engagement, and provides valuable feedback and suggestions to the radio station. For example, a radio station can understand the audience's needs and interests from listeners' questions and comments and adjust and optimize its program content accordingly.

Shanghai Opera Radio produces short opera videos on the BILIBILI website for interaction and comment. A dissemination feature of BILIBILI's video site is a live commentary, or "barrage," suspended above the video. The bullet screen gives viewers the illusion of "real-time interaction" by enabling them to send a bullet screen while watching a video and to view bullet screens sent by other users that would also appear on top of the video. Bullet-screens can build a wonderful synchronic relationship, form a virtual tribal movie-watching atmosphere, and make a platform a cultural community through interactive sharing and secondary creation.

When "Understanding Opera in Seconds," a video about common popular knowledge of opera was placed on BILIBILI, it coincided with the promotion of "Understanding Opera in Seconds". After the video was released, the audience could interact with the team and other netizens through messages and pop-ups. Due to B-site's youthful audience, conducive learning atmosphere, patriotic values, and active interaction, "Opera Know It All", a knowledge product on traditional culture, has become increasingly popular with thousands of views for each video, including "Yan Qinggu on Sheathing the Sword" and "Feng Yun on Whip Flower." Moreover, the videos "Yan Qinggu on Sheathing the Sword" and "Feng Yun on Whipping Flowers" received 570,000 views.

One of the communication features of video sites like BILIBILI is the real-time comments, or "pop-ups," that hover above the video. Pop-ups give viewers the illusion of "real-time interaction" as users can send pop-ups while watching a video. Pop-ups sent by other users will also appear above the video. Pop-ups can build a wonderful co-temporal

relationship, form a virtual tribal viewing atmosphere, and make the platform a highly interactive by sharing and creating secondary cultural communities.

Furthermore, opera broadcasts can also expand its influence and reach by encouraging listeners' participation and sharing. For example, a wonderful opera program, if widely shared and recommended by listeners, can quickly become popular and attract the attention of more audiences.

5. Discussion

Chinese opera broadcast media is in a critical period of integration and innovation. But traditional opera through broadcast media can no longer meet the diversified needs of modern audiences in the digital era. Nevertheless, digital development has opened up an unprecedented space for opera display and dissemination (Xie, 2022).

The content of opera has been spread faster and broadly especially among the younger generation through a variety of channels such as mobile devices, streaming media, and social networks. The integration of modern elements, such as contemporary stories and themes, has made traditional opera more attractive. The introduction of digital technology has strengthened the interactive relationship between the opera and its audience and created new possibilities for the dissemination, education and marketization of opera. Furthermore, opera can also form new profit models to power its sustainable development through digital products, live streaming, VR and other technologies.

Introduction of 5G network technology: The transmission quality and speed of opera broadcasting have been improved with the increasing popularization of 5G technology. The real-time transmission of ultra-high-definition audio and video provides listeners with an immersive experience that is almost indistinguishable from that of a live performance. This not only allows people to experience exciting performances synchronized with live ones at home, but also significantly lowers the threshold for viewing high-quality opera performances in real time.

Application of artificial intelligence in opera broadcasting: Artificial intelligence technology has brought unprecedented possibilities to opera broadcasting. The sound quality of opera has been further optimized to adapt to the aesthetic needs of modern listeners through automated sound processing. Meanwhile, intelligent systems recommend opera programs for users based on their listening habits and preferences greatly enhancing user satisfaction and retention.

Virtual reality creates a new viewing experience for opera: Virtual reality technology has opened up a whole new dimension for opera broadcasting. Listeners can watch opera performances and interact with the actors as if they were in a scene, and even go behind the scenes to understand the stories and details behind the stage through virtual reality devices. Such an interaction not only enriches the audience's viewing experience, but also pushes the opera performance to a new level.

Application of digitized database and cloud storage technology: Digitized database and cloud storage technology have also been widely applied in the field of opera broadcasting to preserve, pass on and promote the culture of opera. Digitalized databases enable a large amount of opera materials can be preserved indefinitely and can also be used by scholars, artists and ordinary listeners for research. Moreover, cloud storage technology can limit the loss of information thus guaranteeing the security and stability of data.

However, core cultural values of opera should not diluted or misunderstood in the pursuit of innovation in technology and content by practitioners and enthusiasts. But opera broadcasters need to constantly update their equipment and learn new technologies concomitant with the rapid iteration of technology means; a feat that implies huge investments and maintenance pressure. Furthermore, opera broadcasters should strategically position themselves and find a market niche that is different from other art forms in the face of competition from other forms of entertainment and emerging media content. Nonetheless, as long as the relationship between innovation and tradition, and business and art, can be balanced, the prospects for the integration and development of opera broadcasting media are still promising.

6. Conclusion

The development of Chinese opera broadcasting fusion media reflects a deep combination of technological innovation and traditional culture. At the content level, opera broadcasting not only preserves classic repertoire, but also incorporates modern elements to attract young listeners. Modern technologies such as streaming media, mobile applications and smart audio have been utilized to conveniently disseminate opera content.

Moreover, social media and digital platforms have enhanced the interactivity of opera broadcasting and increased listener participation. The fused media provides opera creators and performers with a wider display platform and more diversified profit models.

However, the industry ought to focus on maintaining the traditional characteristics of opera and ensuring that its cultural value is not diluted in the process of integration. Overall, the potentials availed by the development of Chinese opera broadcasting fusion media should optimally balance innovation and tradition.

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Authors contributions

Fengbo Bao, Dr. Aishah and Dr. Megat were responsible for study design and revising. Fegnbo Bao was responsible for data collection. Fegnbo Bao drafted the manuscript, Fengbo Bao, Dr. Aishah and Dr. Megat revised it. All authors read and approved the final manuscript.

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