

## Directions and Methods for New Media Convergence Development in the 5G Era (Postprint)

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### Abstract

With the rapid development of science and technology, the information age has arrived, fundamentally transforming people's living habits and lifestyles. The gradual maturation of 5G technology is propelling the rapid advancement of the 5G era, bringing forth further changes to daily life. 5G technology possesses significant advantages such as high capacity, high speed, low latency, and large bandwidth, and has likewise exerted a profound influence on the convergence development of new media, presenting both enhanced opportunities and challenges for its evolution. This paper will explore the directions and methods for new media convergence development within the context of the 5G era, serving as a reference.

### Full Text

#### The Direction and Methods of New Media Convergence Development in the 5G Era

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### Abstract

With the rapid development of science and technology, the information age has arrived, transforming people's living habits and lifestyles. The gradual maturation of 5G technology has propelled the rapid advancement of the 5G era, bringing profound changes to daily life. 5G technology offers significant advantages such as high capacity, high speed, low latency, and large bandwidth, which have deeply influenced the convergence development of new media while presenting both opportunities and challenges. This paper explores the direction and methods of new media convergence development against the backdrop of the 5G era.

**Keywords:** 5G era; industrial convergence; technological convergence; cultural convergence; internetization

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## Introduction

5G technology has ushered in the 5G era, where smartphones, tablets, and other devices are increasingly integrated into daily life, enabling people to access desired information and goods through the internet while facilitating greater communication convenience. Simultaneously, the 5G era has brought new opportunities and challenges for new media development. The convergence development of new media represents an inevitable trend for the future of the media industry, making it a pressing societal topic to leverage 5G technology for accelerating media industry development and achieving new media convergence. Therefore, in-depth exploration of convergence directions is necessary to better harness 5G technology for media services.

### 1. Overview of New Media

New media is a concept relative to traditional media. It typically relies on internet technology and big data technology for information dissemination, with self-media being a typical representative characterized by greater diversity and more innovative formats.[1] In the internet era, new media offers greater spatial reach than traditional media. By leveraging internet technology and digital compression technology, it delivers information rapidly, timely, and accurately to mobile terminals, further improving transmission efficiency. This has profoundly impacted people's lifestyles, expanded information access channels, made information sharing more efficient, and enhanced service quality.

Essentially, every transformation in internet information technology drives innovation in media technology. Computer technology serves as the cradle for new media's emergence, while mobile communication technology and internet technology facilitate its rapid development. New media uses the internet as its foundation to disseminate richer and more abundant information resources. In the new media environment, temporal and spatial constraints on audience information reception are eliminated, enabling 24-hour, all-region information coverage and real-time interaction, thereby expanding information utilization efficiency.

In the new media era, societal information resources have exploded, and people's methods of receiving information are no longer limited to traditional media. They now have more diversified reception methods and can achieve two-way information transmission simultaneously. Audiences are no longer passive recipients but can also become information publishers, transmitting knowledge and effective information resources to others and promoting further development of information sharing. With the continuous increase in mobile phone users in China, new media development enjoys broader prospects.

## 2. Overview of 5G Technology Development

Driven by scientific and technological advances, communication information technology has undergone a long and tortuous development process since the 1G era, now entering the 5G era. In the 1G era, the primary service was voice broadcast, a one-way media service through which people mainly transmitted information via phone calls.

After entering the 2G era, communication information technology achieved certain development, offering increased service items. People could conduct higher-quality voice calls and text messaging, and utilize relatively simple data information services. During this era, traditional media also used text messages to deliver information or advertisements, and people could participate in television program activities via text messages.

Upon entering the 3G era, internet technology developed rapidly, achieving breakthrough results with significantly increased network speeds expanding to 10Mbps. An increasing number of new media platforms emerged, such as Weibo and WeChat, showing explosive growth trends.[2] Against this backdrop, mobile television, as an emerging product, gradually gained acceptance and profoundly impacted people's lives, thereby driving the emergence and development of new media.

In the 4G era, self-media experienced rapid development, promoting the prosperity of traditional industries. Under 4G technology, network speeds achieved breakthrough progress compared to the 3G era, with maximum speeds reaching 100Mbps, capable of meeting most users' requirements. During this stage, new media platforms such as Douyin, Weibo, and WeChat developed mobile applications, further providing users with diversified functional services. Users could record and create short videos through these platforms and publish and disseminate them directly, enabling everyone to become a creator and further driving the rapid development of new media.

With the continuous advancement of information technology, the emergence of 5G technology has promoted revolutionary leaps in society and life, bringing entirely new experiences. Under 5G technology, transmission speeds are 100 times faster than the 4G era, reaching Gbps levels. Against this backdrop, the media industry is no longer limited to one-way information transmission, and its forms of expression have become more diverse. It can provide users with

higher-definition and ultra-high-definition video content and realize new technical services such as virtual reality, profoundly impacting media entrepreneurship and urging the media industry to transform rapidly to meet constantly changing demands.

### 3. Development Path of New Media Convergence in the 5G Era

#### 3.1 Industrial Convergence

The information transmission capabilities of 5G technology have achieved breakthrough development, with faster speeds and higher quality, laying a solid foundation for the rapid development of the Internet of Things (IoT). Against the backdrop of the 5G era, IoT-based industrial convergence has developed rapidly, driving progress in new media convergence. Information dissemination methods in the 5G era have become more diversified, integrating various content forms such as images, audio, and video, continuously expanding business scope and service functions on advanced new media platforms. This makes industrial convergence faster and more efficient, helping to further enhance the market competitiveness of new media and enabling the media industry to optimize and integrate traditional resources while exploring new paths and directions.

For example, before the 5G era, many manufacturers used television media for live sales, allowing customers to purchase products by making phone calls. However, after entering the 5G era, MCN (Multi-Channel Network) institutions have developed rapidly, thereby promoting the integration of new media resources in the media industry, further expanding dissemination channels, and accelerating the pace of industrial convergence. Nowadays, promotional methods such as Taobao live streaming, Weibo live streaming, and Douyin live streaming have gradually occupied people's living spaces. Various large and small, professional and non-professional live streaming platforms and internet celebrities have cooperated with manufacturers to recommend various products to live streaming audiences, further driving the development of the domestic commercial economy. Meanwhile, the media industry has also utilized well-known hosts or channel brands to provide services supporting agriculture and farmers, using online live streaming to introduce various fresh agricultural products to users based on local economic development levels and relevant policy support. This approach not only brings tremendous traffic and topics to live streaming platforms and cultivates a large number of loyal viewers but also generates tangible economic benefits for farmers and enterprises, helps establish good brand images, and plays a positive role in economic recovery and development during the post-pandemic period.

In the new media environment, the momentum of media convergence development is accelerating, and traditional media has also begun seeking new breakthroughs by transforming toward new media. The organic integration of the two has promoted the development of the new television industry, further im-

proved the industrial chain structure of the media industry, created new ideas for business models, promoted innovation in market operation models, and thereby enhanced the industrial value of new media convergence.[3]

### 3.2 Technological Convergence

In the 5G era, the social environment has been enveloped by big data information, driving the rapid development of digital information. The media industry utilizes digital technology to collect and utilize various social resources and information, thereby breaking through its own development limits. Compared with traditional media, new media platforms use advanced technologies such as cloud services and big data algorithms to innovate content production, transform information dissemination methods, make their interactivity more prominent, and enable more obvious personalized development to attract audience attention and enhance the influence of new media platforms among audiences. The 5G network architecture can achieve on-demand customized service functions, while also having the advantages of higher rates, lower latency, and flexible networking, which can further promote the innovative development of new media.

In addition, in the 5G era, artificial intelligence technology has made breakthrough progress, driving the rapid development of new media. If artificial intelligence is not reasonably utilized in the 5G era to promote the rapid transformation of new media, it may fall behind the times and be unable to gain a foothold in the increasingly competitive media industry. Artificial intelligence, also known as AI, is a breakthrough achievement for humanity in the machine field, making services more convenient and faster. Currently, AI has achieved development in multiple fields and plays an important role in education, medical care, finance, media, and other industries. One of the AI services most closely connected with people's daily lives is the mobile phone voice response system, through which people can obtain information and even achieve chat functions. With the increasing maturity of AI technology, new media should also draw inspiration from it, using machine learning technology, data resource integration technology, language recognition and processing technology, and many other new technologies to assist various links in new media services, achieve automation and intelligence in content production, thereby effectively improving the production efficiency of new media, achieving optimal allocation of resources, and promoting the healthy and sustainable development of the new media industry.[4]

### 3.3 Cultural Convergence

In the 5G era, one of the main ways for people to obtain information is through the internet, especially for young people who increasingly rely on the internet's information transmission advantages for daily study, work, and communication. In this context, strengthening cultural integration is one of the effective ways to promote the development of new media convergence, which can further promote the rational allocation of new media resources. Whether it is new media or tradi-

tional media, the core concern in the process of information dissemination is how to quickly attract users' attention and enhance user stickiness. Therefore, new media needs to use 5G technology and network platforms to continuously expand its own dissemination channels and achieve innovation and breakthroughs in dissemination content to stand out among many new media competitions.

In the 5G era, the way people convey information to the outside world is more convenient. They can directly use mobile phones to shoot short videos and upload them to public platforms such as Weibo, Douyin, and WeChat to achieve the transmission of information and culture. For example, internet celebrity Li Ziqi conveys a beautiful pastoral life to people by filming rural scenery and the production process of traditional food, and also conveys the rich connotation of excellent Chinese culture to people. Many users have said that after watching Li Ziqi's videos, their impetuous mood has been purified and their life pace has become more relaxed. This is precisely the efficient integration and utilization of cultural resources by new media in the context of the 5G era, which can further promote cultural integration, convey excellent Chinese cultural traditions to people, expand the influence of Chinese culture, and also promote further reform and development of the media industry.[5]

## 4. Development Strategies for New Media Convergence in the 5G Era

### 4.1 Seizing the Dividends of the 5G Era

In the context of the 5G era, internet information technology has achieved leapfrog development, and new media convergence is also one of the future development directions of the media industry. Therefore, how to seize the pulse of the times and development opportunities to promote the development of new media is an important issue that media industry practitioners need to consider. The key point is to seize the dividends brought by the 5G era. 5G technology has broken through the limitations of 4G technology, further promoting the rapid development of big data technology, cloud computing technology, and artificial intelligence technology, achieving industrial convergence, technological convergence, and cultural convergence of new media, and promoting the transformation and renewal of new media dissemination methods, making them develop in the direction of automation and intelligence.[6]

In the 5G era, information has become an important resource in society. Everyone is using information, and information can be seen everywhere in life. All-media has also achieved unprecedented development, giving rise to holographic media, full-effect media, full-process media, and full-staff media. The development of technology will inevitably drive the transformation of the media industry. Under the background of 5G, the production methods of the media industry will inevitably undergo breakthrough upgrades, thereby better utilizing new technologies such as 5G+AI, 5G+VR, and 5G+4K, introducing new forms such as cloud platform production, machine writing, and AI virtual anchors

into new media information dissemination. The continuous upgrading and replacement of technology has promoted the updating and upgrading of creative content, meeting the growing needs of the people, and once again promoting the upgrading and replacement of technology under the push of demand. In such a virtuous cycle, it promotes the rapid development of new media convergence. In addition, we should also establish an open awareness, actively attract enterprises with advanced technology by leveraging the rapidly developing IoT functions of the 5G era and combining the resource advantages of the broadcasting network, promote the upgrading and expansion of broadcasting and television business, and promote the intelligent development of broadcasting and television, thereby driving the convergence and development of new media.[7]

#### 4.2 Promoting the Internetization of Mainstream Media

Traditional media mainly consists of newspapers, radio, and television, and therefore has obvious mainstream characteristics, which is an advantage that new media platforms do not possess. However, with the rapid development of information technology and the advancement of internet technology, in the 5G era, the development of traditional media has many limitations, its advantages are also declining, its market space is continuously shrinking, and the balanced development state with new media is gradually disappearing. In order to better promote convergence development, mainstream media also needs to achieve internetization.

With the popularization of the internet, the number of internet users in China has gradually increased, and the number of mobile phone users has shown explosive growth. More and more people use mobile devices to watch online live broadcasts and videos. In 2019, Douyin short videos caused a huge craze in society, and its users achieved breakthrough growth. In 2020, the official Douyin account of People's Daily had reached 100 million followers, becoming a new "internet celebrity" on the Douyin platform. As one of the top ten newspapers in the world, People's Daily has absolute authority in China and is one of the representatives of mainstream media. With the continuous development of information technology, People's Daily has also actively followed the trend of the times, expanded its own dissemination channels, and made itself develop in the direction of internetization, and has achieved good results, becoming a model in mainstream media.[8]

In November 2019, China Media Group also launched "Yangshipin" (CMG Video), as a pioneer of the national-level 5G new media platform, achieving innovation in communication mechanisms and providing users with richer and more colorful innovative content, promoting the internetization development of mainstream media. During the prevention and control of the COVID-19 pandemic, major mainstream media also released information through 5G new media platforms to provide timely services for the people and jointly overcome the difficulties of the pandemic. In the process of rapid internet development, new media should use the advantages of 5G technology to innovate the methods

of new media convergence, and combine the needs of mainstream media internetization to achieve effective integration of functions, continuously expand the business of new media platforms, improve the quality and efficiency of services, and provide good technical support for the internetization of mainstream media.[9]

### 4.3 Improving the Supervision Mechanism for New Media Convergence

In the 5G era, although new media has achieved rapid development, it has also increased the difficulty of supervision, and there are many security risks, especially in terms of public opinion guidance, where the difficulty of supervision has multiplied. In the 5G era, the security of user information, the review of published content, and the protection of copyrights all urgently require the establishment of a more comprehensive supervision mechanism to achieve safe and stable development of new media. In the 5G era, whether it is traditional media or new media, they will use big data and cloud computing to mine user resources and information, which will inevitably have a certain impact on user information security. Without a perfect supervision and management mechanism, it will inevitably lead to the loss of control in new media development and cause a catastrophic blow to the entire media industry. Therefore, in the process of new media convergence, it is necessary to be led by relevant national laws and regulations, use the efficiency of 5G technology to improve supervision efficiency, strengthen public opinion monitoring, conduct full-process evaluation of new media convergence, and always implement the core socialist values, establish social credibility, and guide correct public opinion direction and value transmission in society, so that new media convergence can develop in an orderly and efficient manner.[10]

## Conclusion

In summary, against the backdrop of the 5G era, new media convergence has achieved breakthrough development, bringing more opportunities and challenges to the media industry. Therefore, relevant practitioners must adhere to following the trend of the times, establish innovative awareness, actively promote the integration and application of new technologies, seize the pulse of the times and development opportunities, explore new paths and methods for new media convergence, promote the transformation and upgrading of the media industry, and enable new media to bring convenience to the people.

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*Note: Figure translations are in progress. See original paper for figures.*

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