

## A Discussion on the Development Trends and Strategies of the Publishing Industry in the 5G Era: Postprint

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### Abstract

Exploring the development direction and strategies for China's publishing industry in the 5G era. By combining the current development status of 5G networks and their characteristics of high speed, large capacity, and low latency, we analyze the patterns of development and transformation in the publishing industry during the 5G era. The transformation requires not only that publishing practitioners improve themselves through learning, but also that publishers value talent, encourage innovation, and increase investment to continuously propel the development of the publishing industry.

### Full Text

#### Discussion on Development Trends and Strategies for the Publishing Industry in the 5G Era

**Abstract:** This paper explores the development direction and strategies for China's publishing industry in the 5G era. By examining the current state of 5G networks and their characteristics of high speed, large capacity, and low latency, it analyzes the developmental patterns and changes in the publishing industry during the 5G era. The transformation of the publishing industry in the 5G era requires not only that publishing professionals continuously improve themselves through learning, but also that publishers value talent, encourage innovation, and increase investment to continuously support the development of the publishing industry.

**Keywords:** 5G; 5G era; media convergence; publishing convergence; publishing

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In recent years, with the continuous development of mobile communication technology, we have progressed from 1G and 2G through 3G and 4G to the current

5G era. With the arrival of the 5G era, the Internet of Everything will become a reality, and 5G networks will bring tremendous changes to people's production and daily lives. Particularly significant transformations will occur in mobile communications, Internet education, smart cities, smart agriculture, remote healthcare, artificial intelligence (AI), virtual reality (VR), and augmented reality (AR). In the 5G era, new publishing formats will continue to emerge and develop within the publishing field, with the speed and efficiency of information dissemination improving dramatically. Information production, content dissemination, distribution channels, presentation formats, and target audiences will undergo complete transformation. Faced with these new changes in the publishing domain during the 5G era, publishing professionals should take proactive action, actively shift their mindsets, strengthen research, and analyze new development trends in the publishing industry. They must continuously enrich themselves and enhance their capabilities for the 5G era through ongoing learning. Publishers, meanwhile, should follow the trend, value talent, encourage innovation, increase investment, and continuously promote the healthy development of China's publishing industry.

## 1. Overview of 5G Development

**1.1 Definition of 5G** “G” stands for generation. 5G refers to the fifth-generation mobile communication technology (network), which represents the primary development direction of current mobile communication technology. The International Telecommunication Union has defined three major application scenarios for 5G: eMBB (Enhanced Mobile Broadband), mMTC (massive Machine Type Communications), and uRLLC (Ultra-Reliable Low-Latency Communications). Specifically, key performance indicators for 5G include 100 Mbps user experience rates (sometimes reaching 1 Gbps), tens of Gbps peak rates, tens of Tbps traffic density per square kilometer, and mobility support exceeding 500 km/h [?].

**1.2 Characteristics of 5G High Speed.** Future 5G networks will provide speeds of up to tens of gigabytes per second, representing a 10- to 100-fold increase over 4G. Downloading the same large file will be significantly faster on 5G networks compared to 4G.

**Large Capacity.** The large capacity of 5G networks refers to the ability to support more simultaneous online users, accommodating a much larger number of concurrent connections.

**Low Latency.** Signal transmission is stable with minimal delay, achieving approximately 1 ms latency—about one-fifth that of 4G networks.

**1.3 Prospects for 5G Development** The high speed of 5G networks can ensure rapid resource acquisition and large file uploads, enabling real-time transmission of 3D, 4K, and 8K video streams. Its large capacity can powerfully drive the construction of smart cities, smart education, smart security, smart

agriculture, and smart homes. Its low latency can facilitate remote surgery implementation and the development of vehicle networking, promoting rapid growth in autonomous driving and intelligent industrial robotics.

In recent years, countries worldwide have attached great importance to 5G technology, competing to view it as the commanding height of future technological competition. The United States, China, South Korea, Europe, and other nations and regions have increasingly focused on 5G development. Currently, China has made 5G technology a priority for industrial development. On January 10, 2019, the Ministry of Industry and Information Technology issued temporary 5G licenses, kicking off commercial 5G deployment in China. On June 6, the Ministry formally granted 5G commercial licenses to China Mobile, China Telecom, China Broadcasting Network, and China Unicom, marking the arrival of China's 5G era. Presently, only several dozen major cities globally have single-digit or double-digit numbers of 5G base stations.

In June 2019, Huawei had already launched smartphones supporting 5G technology, and Lenovo released the world's first 5G-enabled laptop computer. According to industry predictions, by the end of 2019, China will have established tens of thousands of base stations; by the end of 2020, all prefecture-level cities in China will have 5G network service, and 5G phones priced at 1,000-2,000 RMB will be available on the market.

## 2. Prospects for Publishing Industry Development in the 5G Era

In the 5G era, new publishing formats will continue to emerge and develop, with content production, content presentation, distribution channels, presentation formats, and target audiences undergoing complete transformation.

**2.1 Intelligent Content Production** The high speed and large capacity of 5G networks will make the Internet of Everything possible, and AI application scenarios will become more extensive, fundamentally changing traditional publishing workflows. Regarding content production, AI has already begun to transform how the media industry produces news in recent years. In the 5G era, AI will enter publishing content editorial offices at a higher level. Through terminal devices connected to 5G networks, AI will be able to produce not only simple data analysis articles on social security conditions, real-time weather, traffic conditions, and financial stock markets, but also articles with greater theoretical depth, such as analyses of social security conditions in specific locations and time periods, examinations of the causes behind social security fluctuations, and corresponding policy recommendations; analyses of weather change causes and patterns in particular regions and periods; investigations of traffic congestion causes and improvement measures; and analyses of stock market fluctuations.

**2.2 Diversified Presentation Methods** The development of mobile Internet has changed how people access information. From text in the 2G era, to "text + images" in the 3G era, to micro-posters, voice, live streaming, animation,

and short videos in the 4G era, the presentation of news and publishing content has become increasingly diversified. The high speed of 5G networks enables real-time playback of 3D video, 4K, and even 8K video, and promotes the integration of AR and VR with gaming and daily life, which will transform information presentation methods. In the 5G era, publishing products will become more vivid, concrete, and realistic, with video becoming the primary means of expression and presentation. Abstract traditional publishing content will become more concrete and easier to understand. For example, presentations of object structures, molecular composition, laws of object motion, mechanical analysis, digital model construction, and outer space will become more concrete, featuring not only video presentations in 4K, 8K, and 3D modes, but also data visualization presentations that provide immersive experiences.

**2.3 Diversified Knowledge Services** 5G will transform the traditional distribution model of the publishing industry. Publishers can leverage the low-latency characteristics of 5G networks to rapidly deliver content to users, who can quickly find the knowledge and information they need through 5G networks. Knowledge services in the publishing industry will become increasingly diversified in the 5G era. Publishers will provide not only traditional publications but also literature products, knowledge resources, knowledge products, knowledge services, and knowledge tools. Literature products mainly refer to content products such as digital libraries and e-books; knowledge resources include knowledge graphs, knowledge systems, and publishing databases; knowledge products can be categorized as entertainment, lifestyle, popular science, or academic based on different classification criteria; knowledge service products include information retrieval, inquiry, education, and training; and knowledge tools include knowledge learning and research models, knowledge classification systems, and knowledge management tools.

**2.4 Equal Emphasis on Technology and Content** Technological development and market demand are two important engines driving the publishing industry's growth. In the 5G era, technological development will profoundly influence the publishing industry, affecting content production and presentation. As the pace of publishing convergence continues to accelerate, whether in 5G platform development, big data applications, or the advancement of AI, VR, and AR, all depend on scientific and technological development. Technology has become a crucial engine for publishing industry development. Simultaneously, we must clearly recognize that regardless of technological development or changes in the publishing environment, "content is king" remains the creed that the publishing industry must follow, with content continuing to form the foundation supporting publishing industry development [?]. The publishing industry is a content industry belonging to the knowledge service sector. Content is the foundation of the publishing industry's existence and its core competitiveness. Therefore, in the 5G era, while emphasizing technological development, the publishing industry must not neglect content construction.

### 3. Reflections on Publishing Industry Transformation in the 5G Era

In the 5G era, publishing professionals should take proactive action, actively transform their mindsets, and continuously enhance their capabilities through learning. As publishers, the following work should be emphasized.

**3.1 Value Talent** As General Secretary Xi Jinping pointed out: “Talent is the primary resource. Throughout history, talent has been the foundation of national prosperity and the key to national development” [?]. “Media competition is fundamentally talent competition, and media advantage is essentially talent advantage.” “Achievements are accomplished through talent, and enterprises are expanded through talent.” For publishers to achieve successful transformation and growth in the 5G era, they must value talent. Talent plays a crucial role in publishing industry development. Publishing editors are core components of the publishing industry, determining the quality of content production and the building of publishing brands. As the new publishing landscape continues to evolve in the 5G era, the publishing industry urgently needs editors who can work with focus and dedication, who possess Internet thinking, understand digital development, product design, user experience, and interactive communication—editors with “Internet DNA” and “5G DNA.” Publishers should actively create environments conducive to the development and growth of publishing talent, providing full political trust, greater encouragement in work, more care in daily life, and better compensation.

**3.2 Encourage Innovation** General Secretary Xi Jinping emphasized at the National Conference on Propaganda and Ideological Work: “To do well in propaganda and ideological work, innovation is needed more than ever” [?]. “Innovation is the source of cultural development and the driving force of publishing development.” “Those who do not innovate daily will inevitably regress daily” and “The wise adapt to the times, and the knowledgeable adjust to circumstances.” Innovation is the only path for the publishing industry to create new situations and achieve new development. Only with innovative consciousness can publishers directly participate in the recreation of innovative knowledge and continuously deliver innovative knowledge to readers. Publishers must follow the general trend of 5G network development, dare to innovate, have the courage to transform, actively leverage new media communication advantages, improve operational mechanisms, open channels for user information exchange, and continuously strengthen the user-first concept to deliver quality knowledge services.

**3.3 Increase Investment** In the 5G era, those who control the platforms control the future. The construction of publishers’ own information platforms requires substantial financial investment. The introduction of advanced 5G equipment will also cost considerable funds. Additionally, the recruitment and training of 5G professionals require significant investment. Currently, some

domestic publishing and media groups are accelerating their media convergence process through public listing and financing.

The high speed, large capacity, low latency, low power consumption, and Internet of Everything characteristics of the 5G era provide more possibilities for publishing industry development. In the 5G era, the publishing industry is no longer what it once was. Users hold more initiative, have higher requirements for publishing product quality, and their needs are increasingly diverse. For publishers to survive and thrive in the 5G era, they need not only the active efforts of publishing professionals but also publishers to transform their mindsets, value user needs, emphasize talent, encourage innovation, and increase investment to continuously drive the development of the future publishing industry.

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

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