Development and Integration Between Computer Network Technology and New Media

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Abstract. Computer network technology breaks through the limits of time and space, integrating all the information of the world into a whole. Computer network technology, as a solid guarantee for the rapid development of new media, plays a significant role in its growth. Both the progress of computer networks and the advance of new media technology are ushering in a new development opportunity, and thus the integration of the two is also a major issue at present.

Keywords: Computer Network · New Media · Internet · Integration and Development

1 Introduction

We have entered the era of big data and developed the new media of the Internet as a result of the development and widespread application of computer network technology. According to the 48th China Statistical Report on Internet Development released by China Internet Network Information Center, as of June 2021, the number of internet users in China had reached 1.011 billion, up 21.75 million from December 2020, and that of Internet penetration rate had reached 71.6%, up 1.2 percentage points from December 2020 [4]. The integration of computer network technology and new media technology has brought about a new situation in the development of new media in China. New media has created a new era of information sharing, in which network technology acts as a guarantee of new media technology while new media provides support for the development of network technology.

2 Current Situation of Computer Network Technology and New Media

2.1 The Role of Computer Network Technology

The application of computer networks in information engineering can achieve the effective transmission of information in information engineering through relevant programs and ensure the quality of information transmission. For the stored information, computer

Table 1. Comparison of Basic Internet Resources from December 2020 to June 2021.

	December 2020	June 2021
IPv4	389,231,616	393,187,072
IPv6 (block/32)	57,634	62,023
Number of active IPv6 users (million)	462	533
Domain name	41,977,611	31,362,443
Domain names with ".CN"	18,970,054	15,087,000
Mobile phone base stations (million)	9.31	9.48
Internet broadband access ports (million)	946	982
Length of fiber optic cable lines (million km)	51.69	53.52

August 2020 The number of **Tik Tok's** daily active users exceeded **600 million.**

August 2021 The number of **Kwai's** monthly active users reached **570 million.**

November 2021 The number of **Xiaohongshu's** monthly active users reached **200 million.**

July 2021 The number of **Wechat's** monthly active users reached **1.26 billion.**

September 2021 The number of **Bilibili's** monthly active users reached **270 million.**

Fig. 1. Statistical Data of Active Users of Five Major New Media Platforms.

network technology can swiftly and intelligently filter and integrate the stored information data, and then process it according to specific programs, and the computer can instantly develop more feasible solutions based on the results. During the establishment of database, computer network technology can not only improve the speed of computer networks processing information, but also guarantee the security of information, and effectively avoid the loss or theft of data in the process of transmission [2] (Table 1).

2.2 Status of New Media

New media evolves from traditional media on the basis of digital technology, network technology, and communication technology, utilizing intelligent terminals to offer information and message to consumers. The value of new media lies in the authority, accuracy and timeliness of information released, and its core value lies in the ability of interaction among users, the ability to meet users' needs, the tolerance of users' desire for expression, and the depth and breadth of information [1]. More efficient and personalized fragmented information accords more with users' requirements, transforming the situation of common users as the audience, and thus everyone can become the main body of the media (Fig. 1).

2.3 New Interpersonal Communication Model of New Media

The new interpersonal communication model in the new media environment is from one independent point to another, and these points form a huge network system. The most
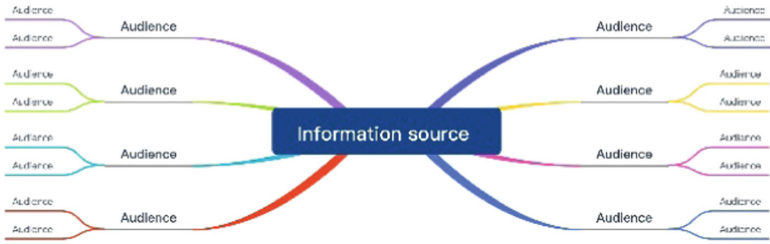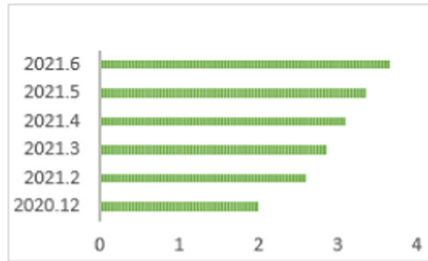
Fig. 2. Diagram of O2A Model.

Fig. 3. Number of 5G mobile phone terminal connections from December 2020 to June 2021.

well-known is the O2A model, namely a one-to-many model, in which messages are sent from a single source to multiple audiences, forming an information network when each audience exchanges messages with other audiences [8]. Each person is a unique individual who is influential but independent with each other, and even if integrated into the community, the individual's distinctive demands will not be diminished (Fig. 2).

3   The Relationship and Influence Between Computer Network and New Media

3.1   Wireless Devices Have Become Important Carriers

As the development of computer network technology has promoted the emerging new media to become the main force of technological development, The huge size of China's online users provides strong endogenous impetus to promote the high quality of China's economy, accelerate the new digital infrastructure construction of 5G network, open up a broad domestic circulation, and facilitate the rise of digital technology level [3] (Figs. 3, 4 and 5).

3.2   Fragmented Information Has Become a Favorable Opportunity for Development

Computer network technology has aroused the public's attention to new media. With the gradual popularization of smart terminals and the emergence of a large number of
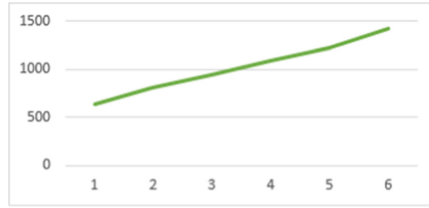
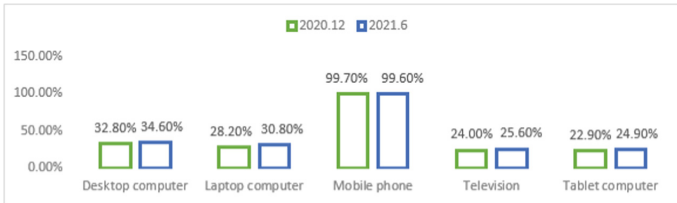**Fig. 4.** Number of fixed Internet broadband access subscribers from January 2021 to June 2021.

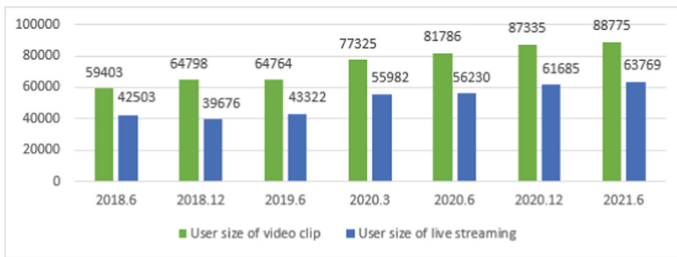
Fig. 5. Usage of Internet Access Devices.

Fig. 6. User scale of video clip and live streaming in China from June 2018 to June 2021.

social software, a large number of short, quick and swift media information is reframing people's cognitive approach and is one of the important entertainment ways to consume fragmented time [9] (Fig. 6).

3.3 Computer Network Technology Has Promoted the Expansion of New Media

Driven by the development of computer network technology, online shopping has become one of the main ways of people's daily consumption. Video clip, live streaming, and e-commerce complement each other, and the rise of live commerce opens up various paths for new media e-commerce development. Taking users and e-commerce content as the core of content production, Kwai's newbie e-commerce ecosystem focuses on producers' content output to establish trust relationship with users, thus accumulating traffic to achieve certain e-commerce conversion rate [6]. Tiktok's interest-based e-commerce ecosystem combines diversified content with algorithmic recommendation technology to allow consumers to discover high-quality products while watching videos, create consumption motivation, and achieve massive conversion (Figs. 7, 8 and 9).
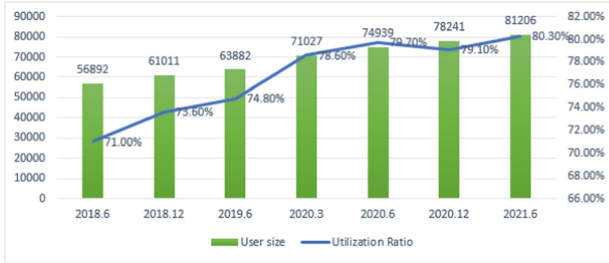
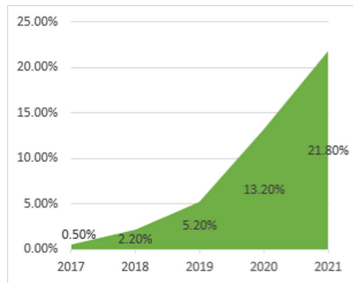**Fig. 7.** User Size and Utilization Ratio of Online Payment from June 2018 to June 2021.

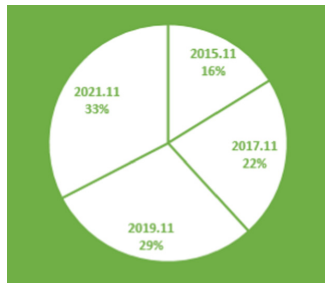**Fig. 8.** Share of e-commerce transactions of physical goods from 2017 to 2021

Fig. 9. Share of live e-commerce transactions from November 2015 to November 2021

4 Promote the Integration of Computer Network Technology and New Media Technology

4.1 Establish the Core Status of the New Internet Media

The current rapid development of new Internet media cannot be achieved without the support of computer network technology which guarantees the continuous development of new media, and whether its propaganda or entire operation process is realized on basis of network technology. Every practitioner in the media industry should recognize the core position of new media in the development of the industry, strengthen the management of new media, and clarify the actual development direction, with new media as the core

and focus of development. Some popular websites should be examined and checked to ensure the correctness of the orientation of public opinion, optimize and innovate the management mode, solve internal conflicts, and establish a more perfect management system that is more advanced and orderly, so as to meet the requirements of building a harmonious socialist society [7].

4.2 Strengthen Innovation and Application of Computer Network Technology

With the rise in popularity of intelligent terminals, the swift development of new media industry can benefit from the strengthening of innovation and application of computer technology. Thanks to the role of computer network technology, the new media is evolving in the direction of intelligence, which is more timely and diverse. Individuation communication should be achieved by new media technology, customizing corresponding contents for different types of people, and enhancing the sense of experience [10]. Besides, VR technology should be vigorously developed to realize multi-sensory experiences for users, integrating visual, tactile, and taste information to provide the most realistic experience for users. Furthermore, it is essential to improve the intelligence of computer networks, further expand the scope and influence of information dissemination, and accelerate the development pace of new media technologies.

4.3 Enhancement of Integration Capabilities

Excellent talents play a significant role in the integration of computer network technology and new media development. In accordance with the actual situation, it is needed to strengthen the cultivation of talents, increase the investment of appropriate funds for researches in science and technology, and in the integration power of native talents new media and computer network technology. In addition, we should strengthen innovation work during the practice, and produce the corresponding information contents according to the development of the trend of the times and the needs of users. Furthermore, it is also required to utilize the existing resources to gradually improve the overall strength of the new media field, and then enhance the economic benefits and value of enterprises [5].

5 Conclusion

With the rapid development of information technology, computer network technology and new media technology are getting more and more attention. Computer network technology is a powerful guarantee for the rapid development of new media and plays an important role in the development of new media. Both the expansion of computer networks and new media technology usher in new development moment, and consequently the integration of the two is currently a major concern. This is a large-scale and time-consuming reform that, in the process of integration and development between the two, should follow relevant principles, speed up the development process by the utilization of new emerging technologies, grasp the development direction, take various aspects as entry points to establish a more perfect computer network monitoring platform and management system, and promote society's harmonious and healthy development.

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