The Transformation of the New Media Communication Paradigm in the Metaverse Era and Blockchain Based on the Topological Characteristics of Information Communication

Jinping Zhang, Taiyuan University, China*

ABSTRACT

Keeping pace with the times, this paper analyzes and interprets the concept, characteristics of Metaverse, and its influence on new media communication. Based on this, under the topological characteristics of information communication, this paper discusses the transformation of new media communication paradigm in the metaverse era and models the prediction of new media information dissemination in metaverse. In this paper, the multi-agent modeling method is used to analyze and compare the evolution results of each agent attribute under different parameter values. At the same time, based on the ideal social media network, the improved integrated immune control strategy is applied to the dynamic model of epidemic (SEIR) with latent period, and the spreading and evolution process of rumors before and after immunization is simulated. This research has both theoretical value and practical application value, which can provide a useful reference for the follow-up research of new media communication.

KEYWORDS

INTRODUCTION

In the long process of human social development, the truly meaningful and valuable "message" is not the communication content of each era, but the communication tools used and the social changes it brings (Huang et al., 2015). With the further development of the internet, the next blue ocean of digital information technology revolution is coming out. Network refers to the dissemination of human information through computer networks (Gretry et al., 2017). Information in the network transmission is stored in digital form, spread at a high speed through the computer network, and read by computers or similar terminal devices. The interpersonal social network of information dissemination

is a complex social network that is determined by the network topology structure and the connection relationship between nodes in a specific situation (Du & Dao, 2014). However, as a rising medium, the network is more deceptive than the traditional media because its information dissemination has no center or margin. With the increasing number of internet users, the social influence of the internet is constantly expanding. In the era of Web 2.0, every netizen holds the initiative of information, and every netizen is a small network medium. They will freely express their views and opinions on the affairs of enterprises or governments from their own perspectives (Yan et al., 2016). As the main body of information dissemination, netizens have the purpose, initiative, and enthusiasm. They are influenced by other subjects and environments, and their behavior also directly or indirectly affects other subjects and environments. On the whole, the emergence of the internet has made the prediction of the global village closer and closer to reality. We have seen the tremendous power of the internet media and its gradually mature development state. Through the network, people can freely carry out data transmission and information conversation. It has brought unprecedented changes to people's lives and brought great changes to all walks of life, including the communication industry.

Metaverse is different from the "virtual world" and video games. It originated from science fiction. Nowadays, the concept of metaverse is exploding, and some people call it the ultimate form of internet (Alsamhi et al., 2022). As the framework concept, the underlying logic and the technical reserve all have certain foundations; the metaverse, as a parallel world of the network, is not within reach, but it is not out of reach (Liu & Li, 2015). The metaverse discussed in this paper is not simply equal to digital games and virtual reality. Metaverse is a new internet application and social form that integrates virtual and real situations and is produced by integrating a variety of new technologies. It closely integrates the virtual world with the real world in social, economic, cultural, social, and identity aspects. It also allows users to produce content and edit the environment. Meta-concept is essentially a pioneering application of information value at a higher level, and the core value of media industry lies in information itself. In the new media era, users can be information receivers of online media, or disseminators who use online media to publish information. The traditional communicators have changed, and the source will also change (Hopp & Vargo, 2017). The emergence of new media tools has changed the way we spread information and has made a profound impact on our lives. Throughout the history of media development, with the birth of the internet and the development of new media, Marshall McLuhan's advanced theory is being realized one by one. Based on this development, this paper discusses the issue of new media communication in the metaverse era.

At present, we are in an era of mass communication. Books, radio, television, and other mass media transmit information to every corner of society. Especially after the emergence of new media, there are more and more forms of mass communication. The openness and freedom of the network make more people choose the form of online mass communication. Various forums and communities can allow people from all walks of life to express their opinions freely (Houston et al., 2015). With the development of push technology, "immersive experience" has been widely used in the new media field, especially when combined with mobile communication devices, making information more innovative in presentation and experience. The new media with digital technology as the carrier has broken and melted the boundary between media, region, and administration; it has also shown the characteristics of outstanding personalization, real-time information release, strong interactivity, diverse forms of expression, and more audience selectivity (Fusi & Zhang, 2020). The birth of metaverse will bring another industrial innovation to the development of new media. From the perspective of communication, metaverse is actually a kind of "meta-media"—its ambition to cover all media contains changes in communication mode, communication ecology, and communication philosophy. The technological change in the process of meta-ecological construction will definitely bring great influence on the deep integration of media, and it will promote the profound changes in the speed, intensity, and breadth of the evolution of new media. Under the topological characteristics of information communication, this paper discusses the transformation of the new media communication paradigm in the metaverse era. Its main work and innovations are as follows:

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