



Research on the Communication of Sports Events in the Context of Metaverse

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Abstract. The metaverse is a next-generation Internet application and social form that integrates multiple new technologies, blurring the boundary between virtual and reality and broadening the scope of human perception. This paper argues that the characteristics of metaverse communication meet the criteria for audiences to choose to participate in sports event communication and can bring new development to sports event communication. Based on this, this paper further investigates the application of the transcendence, immersion and embodiment of metaverse communication in sports event communication with specific cases, and suggests the future direction of metaverse development.

Keywords: Metaverse · Sports Event Communication

1 Introduction and Literature Review

1.1 Introduction

1.1.1 Background of the Study

In 2021, the social media giant Facebook announced that it would change its name to “Meta” and its stock code to “MARS”. The year 2021 is also regarded as the year of metaverse, as the meta-universe has changed from a fictional world to an Internet industry concept.

The metaverse began in 1992 with the American science fiction work Snow Crash [1], the two concepts of “Metaverse” and “Avatar” were mentioned in the book. In the “Metaverse”, people can have their own virtual doubles, and this virtual world is called the “Metaverse”. In 2009, the movie Avatar, in which humans enter the virtual world through a brain-computer interface, brought the concept of Avatar to the public in a more visual way. In recent years, a series of movies such as “Top Gun” and “Runaway Gamer” with metaverse as the background have made audiences understand the virtual world of “metaverse” more intuitively.

In 2021, the metaverse will no longer exist only in virtual scenarios such as movies and novels. With the guidance of high-tech companies such as Facebook, the metaverse has shown the outline of reality, which has triggered a research boom in the academic field.

Scholars An-Ling Xiang, Shuang Gao, Ying-Tong Peng and Yang Shen (2021) proposed metaverse as a kind of super digital scene with full-real Internet and shared virtual reality, and one can achieve the integration of real world and virtual world socially, economically, and identity with the technical support of digital twin, block chain, and virtual reality. Scenario, physical participation, virtual identity, game interaction, and immersive experience are all important features of the metaverse [2].

With the arrival of the web 3.0 era and the development of artificial intelligence and blockchain economy, the digital development of sports has become an inevitable trend. However, due to the special nature of sports activities and events, audience participation and immersion are very important, and the traditional online sports activities are mostly participated with the help of a single handle or vr device, which can no longer meet the needs of audience participation in sports activities. The emergence and development of metaverse technology can solve this problem well.

In the future, metaverse technology will become a trend for the dissemination of sports events, and for the audience of sports events, relying on metaverse to participate in sports activities and watch sports events can meet the audience's immersive viewing needs as well as meet the audience's social interaction needs. However, there is no academic research on the influence of metaverse on sports communication, so this article will study the communication of sports events in the context of metaverse to fill the gap in this area.

1.1.2 Research Object

This paper will focus on the special characteristics of communication in the context of metaverse, the advantages of sports event communication in the context of metaverse, the transformation of user participation mechanism and the application of metaverse sports event communication in reality.

1.2 Literature Review

1.2.1 Meta-universe Research

Matthew Ball (2020), a long-time venture capitalist who has studied metaverse, identified several key characteristics that define a metaverse: 1. it must span both the physical and virtual worlds; 2. it must form a fully-fledged economy; 3. it must provide "unprecedented interactivity" (users are able to interact with reality through the virtual images they create); and 4. The metaverse will be run by many different players in a decentralized way, without belonging to a single company. This idea is echoed by Zuckerberg, who believes that the metaverse must be interoperable and portable: "You have your own avatar as well as virtual objects that can move instantly to anywhere, rather than being trapped in a particular company's product" [3]. Like the W3C World Wide Web standards protocol, the metaverse needs to build a common protocol for each company to develop in a common and interoperable universe.

Yi Huanhuan (2021) believes that from the past virtual reality to the present, the meta-universe is not only virtual reality, but it also covers a larger scope, and the interactive technology helps humans open a portal from the physical world to the virtual world.

It includes virtual reality, mixed reality, hologram, and also the digital identity and digital asset system provided by blockchain, etc. [4].

1.2.2 The Digital Transformation History of the Sports Industry

Chen Shuyuan (2021) proposed that due to the long-term lack of substantial breakthroughs in content carriers, communication methods, interaction methods, user engagement and interactivity in the overall Internet industry over the past 20 years, it has given rise to single-point technological innovation in various industries. Fan Songmei (2021) argues that pre-epidemic digitization has brought significant changes to professional sports in China, such as the continuous increase in the proportion of new media broadcasting based on digital technology in broadcasting revenue, and the participation of famous athletes in live “bringing goods”, etc. 2019 digital transformation has become the core symbol of China’s sports industry [5].

Shen Ke-Yin (2021) shows that the main features of the current digitalization of sports industry are digitalization, intelligence and networking. And the deep integration of digital economy and sports industry not only provides new impetus for the high-quality development of sports industry, but also makes digitization a major trend in the development of sports industry in China [6].

Li Yanli (2020) believes that digital transformation of sports industry is an important initiative to accelerate the transformation of new and old dynamics of sports industry. And the digital transformation of sports industry is a new dynamic energy to promote the quality and upgrade of sports consumption [7]. Wang Jingtian, Fu Xiaodong (2020) explain industrial digitalization as the core of digital economy, which is the process of using digital technology to enhance the digitalization, networking and intelligence of industrial development to achieve output increase and efficiency improvement [8]. Li Yanli (2020) argues that during the epidemic, sports consumption shifted from offline to online, and some new business models and modes came onto the consumption stage, with online education, online game watching and e-sports entertainment consumption being widely sought after and showing explosive growth. After being directly impacted, the sports industry took the initiative to seek new changes and inject new elements into the industry. After the end of the epidemic, some consumers’ sports consumption habits and consumption areas will naturally continue. Therefore, accelerating the digital transformation of the sports industry is an important path to promote the quality and upgrade of sports consumption.

Most of the current studies on the digital transformation of sports industry focus on the impact on sports industry and sports economy, and the impact on event communication is relatively missing.

1.2.3 Sports Event Communication

Yu Pengfei (2021) believes that at present, the broadcasting of sports events in China is mostly dominated by the official media, and multiple communication subjects participate together; focus on individual narrative synopsis, out of the emotional narrative; visual-oriented, sound and text to create a new audiovisual landscape [9]. Yan Jagao, Chen Yong, Song Li and Qiu Li (2017) sorted out the characteristics of sports event

communication under new media Presenting two-way and interactive communication forms, portable and mobile receiving terminals, real-time and diversified communication channels, and diverse and integrated communication contents [10]. However there is no in-depth research in the academic field based on the aspect of sports event communication under the meta-universe.

1.2.4 Audience Role Change

Wu Yuehong and Zhang Aibing (2015) believe that the status of sports audience has changed historically in the new media environment. And although the sports audience group expands, the attention of the audience shows a decreasing trend. The application of new media brings new information dissemination channels and platforms, which makes the group size of the audience expand continuously. And the previous sports audience can be divided into three main groups: one is the sports decision makers. Second is the audience who really like sports. The third is the casual audience. With the development of new media, the role of audience has changed from the previous passive receiving party to the active choosing party [11]. The development of new media gives the audience more rights to choose and makes the audience role have changed.

From a single recipient, the audience becomes a producer and transmitter of information and finally a subject who participates in information. The more the audience participates in the Internet, the more profoundly they are influenced by the Internet, and the stronger their dependence on the Internet. Therefore, it is important to change the role of the audience and to strengthen the guidance of the audience. This paper will elaborate on the change of the role of the audience in the communication of sports events in the meta-universe and make a prediction on the development of the communication of sports events.

2 Event Communication in the Context of Metaverse

2.1 Special Characteristics of Sports Event Communication

2.1.1 Strong Technology Dependence and High-Tech Assistance

Nowadays, with the development of information technology, Internet and cell phone media have become the main channels for audiences to obtain information nowadays. For example, the most important way to obtain sports information for college students majoring in sports in Beijing is the Internet, which accounts for far more than TV, radio and newspapers; the main way to obtain online sports information is the portal sites and professional sports websites with comprehensive and exciting information [12]. According to the survey of Ai Media Data Center: 2012–2020, the scale of Chinese Internet sports users keeps increasing, and in 2018, it exceeds 500 million people [13]. It can be said that the current Internet communication has surpassed traditional media as the main channel of sports event communication nowadays.

Large-scale sports events will rely more on the use of high technology in order to present the scene more realistically to the audience. For example, during the 2020 Tokyo Olympic Games, CCTV New Media, with its strong technical and policy advantages,

used advanced new media technology to integrate news production and communication resources of large sports events, and dominated the communication of this year's Olympic Games through the construction of CCTV's new media platform. CCTV uses high-quality 4K ultra-high definition broadcasting technology and virtual reality technology such as VR/AR, as well as professional news gathering and production teams, to dominate the live broadcast of events and news production for the Tokyo Olympics [9]. And in preparation for the 2022 Beijing Winter Olympics to enhance the effect of the Beijing Winter Olympics race broadcast, the Beijing Olympic Organizing Committee will widely apply 5G technology and 8k HD technology, and combine the latest VR technology to allow viewers to have an unprecedented VR experience on the big screen without wearing a VR headset [14].

For the audience, with the addition of high-tech, watching the games also has a better experience; for the media, through high-tech to move the sports arena to the audience's home, so that the audience can be more undifferentiated, more immersive viewing to achieve better communication effect, become the goal of the continued development of sports communication. In addition, for the participants, the use of high technology can enhance fairness to a certain extent. For example, the replay system can capture technical details that cannot be judged by the naked eye and improve the accuracy of the verdict, thus enhancing the fairness of the game.

2.1.2 Mainstream Media Domination, Social Media Promotion, and High Sensitivity of Public Opinion

The income from broadcasting rights of tournaments is one of the main incomes of sports events. At present, most of China's purchases of broadcasting rights of large foreign events are unified by mainstream media, and commercial media then make secondary purchases of broadcasting rights of some items from mainstream media. Therefore, at present, the communication of events in China is characterized by the dominance of mainstream media and the promotion of social media.

Mainstream media domination guarantees the reliability of information and can be widely influenced in mass communication. In the Beijing Winter Olympics, in addition to the mainstream media coverage, the influence of social media was also ahead of its time. More and more people switched from watching the Winter Olympics on TV to watching through online broadcast platforms, and the number of people watching the Winter Olympics overseas through social media platforms such as YouTube and TikTok greatly exceeded the number of people watching on TV [15]. In addition, the athletes' spontaneous promotion through social media in this Winter Olympic Games is much stronger than before. U.S. athlete Maddie Maestro has posted dozens of videos on TikTok since arriving in Beijing, including one in which she discovered that a cushion with an "ice dun" pattern could be unfolded into a blanket, which has received more than 6.3 million views. Other athletes have also posted articles and videos on the Internet that have drawn attention to the Winter Olympics around the world.

However, the low threshold of social media, combined with the anonymity and virtual nature of the Internet, allows the public to conceal their true identities when interacting with each other, so they can express their opinions as they wish. Especially in such confrontational activities as sports events, public interaction and speech are more

intense and uncontrollable, with a strong subjective color and high sensitivity of public opinion.

Some social media and individuals, in order to gain traffic, misleadingly process some news and videos twice, making the public opinion environment more and more sensitive. For example, malicious editing of athletes' interviews and competition videos will trigger the outbreak of negative emotions among the public. They are prone to turn this into a tool for venting and evaluate the performance based on the clip alone. At the same time, with the emergence of artificial intelligence and algorithmic news, the distribution mode of information has changed, making it easier to strengthen the dissemination of information with misleading and traffic-grabbing features, and flooding such information. Multi-valued public opinions seriously impact the opinion-leading ability of mainstream media, so that mainstream media gradually lose the ability to lead the direction of public opinion development of events and cannot play the role of opinion leaders [9].

2.1.3 Strong Watchability, Transcending National Boundaries

Sports events are highly watchable, and the ultimate goal of sports events is to challenge the physical limits of human beings, and the athletes participating in sports competitions all aim to challenge their limits. For example, after Su Bingtian broke the Asian record with 9:83 in the Tokyo Olympics, he quickly became a household name in China and even in the world. He was ranked ninth in the official list of the top 10 100 m flyers updated by the IAAF, and became the only Asian in this list. The unpredictability and suddenness of sporting events bring great spectacle to them.

The unpredictability and unexpectedness of sporting events make them a great spectacle, and because of the special nature of sporting events that challenge themselves, they transcend national and ethnic boundaries. At the closing ceremony of the Beijing Olympic Winter Games, the IOC short film "The Power of Belief" was shown, vividly demonstrating the Olympic spirit of "Faster, Higher, Stronger - More United". Among them, the shot of Russian Olympic Committee member Ilya Brov hugging Ukrainian player Abramenko aroused much discussion, especially the moment when the two athletes hugged each other just because of their recognition of each other's competitive level under such a tense situation between Russia and Ukraine, which perfectly interpreted the Olympic spirit of "solidarity and love, fair competition and mutual understanding". The moment when the two athletes embraced each other because of their recognition of each other's competition level is a perfect interpretation of the Olympic spirit of "solidarity, love, fair competition and mutual understanding".

2.2 Characteristics of Metaverse Communication

2.2.1 What is Metaverse?

It is based on extended reality technology and digital twin to achieve spatio-temporal expansion, AI and IoT to achieve human-robot integration, and blockchain, Web3.0 and digital collection/NFT to achieve economic value-added. In the social system, production system, economic system on the virtual and real symbiosis, each user can edit the world,

content production and digital assets since ownership [16]. The concept of metaverse used in this paper is consistent with the one proposed by Professor Shen Yang.

2.2.2 Technical Characteristics of Metaverse Communication

2.2.2.1 Transcendence

From the technical aspect, metaverse is a collective term for the comprehensive integration of information space-time formed by a series of new information technologies such as Internet, big data, artificial intelligence, block chain, etc. [17]. The Internet, mobile Internet, Internet of Things and other technologies try to interconnect everything in the world, linking people with people, people with things, and things with things interconnected to form a huge and interconnected world. Cloud computing integrates various computing methods and capabilities distributed all over the world to build a world with great arithmetic power and super data storage capacity; big data turns everything into data, turning the real world into a digitally encoded data world and reconstructing it in virtual space; virtual reality technology relies on physical devices to let people freely enter and exit and immerse themselves in a virtual but highly compatible digital world; artificial intelligence relies on physical devices to let people freely enter and exit and immerse themselves in a virtual but highly compatible digital world; artificial intelligence relies on physical devices to let people freely enter and exit and immerse themselves in a virtual but highly compatible digital world. Virtual reality technology relies on physical devices to allow people to freely enter and exit and immerse themselves in a digital world that is virtual but highly compatible with the real world; artificial intelligence allows human capabilities and intelligence to be extended and amplified, and through the process of creating robots, the ideal future intelligent brain is carved out.

Thus, the metaverse unifies the various new technologies of the scattered information technology revolution into a single platform and becomes a comprehensive integration. It creates a social scene that coexists with each other, giving interpersonality and interaction a central role in the interactive scene. It surpasses all previous media and has incomparable advantages in terms of communication effects and communication channels.

2.2.2.2 Immersion

As a kind of full-fledged Internet space that provides users with immersive interaction experience, the metaverse is formally shaping a “mutual coexistence” social scene for users to adapt to the needs of both parties, putting interpersonal and human-computer interaction at the core of the scene [18]. On November 18, Justin Bieber, a famous American singer, held a meta-universe concert on the virtual entertainment platform Wave, through his virtual image sang songs from his latest album “Justice” [19]. Fans could go to the Wave platform to watch the concert and also watch the live stream on Bieber’s official YouTube account. The concert paid particular attention to audience immersion and interactivity, compared to traditional online concerts, this concert before the start of the singer to create avatars and the use of inertial motion capture system, which can capture more of the singer’s movements in a smaller space. To enhance audience interaction and immersion, the audience can choose the appearance and background for

the singer, and the audience can send love and other props to the singer while the avatar is singing to enhance the sense of participation and immersion.

Thus, the metaverse can meet the immersion experience required by the audience in this kind of viewing and immersion activities.

2.2.2.3 Embodiment

Embodiment refers to the practice of the body reaching out to the world and to others through intentionality, and is the foundation for meaning, understanding, and communication [20]. Peters said, “The body is the vehicle that cannot be abandoned, and in a certain sense, the body is the homeland to which we are returning” [21]. So even though the emerging technologies represented by VR/AR/MR, interactive technology, and Internet of Things technology are developing rapidly, the development is ultimately and constantly for the simulation of human beings themselves. For daily life, activities are simulated and emulated, and then the collected and produced sounds and physical reactions are incorporated into the process of communication, further turning audio-visual immersion into reality and acting directly on the human body.

For some sports communication processes, the fun of sports communication can be enhanced to a certain extent by transforming purely audio-visual communication into embodied communication. For example, the fitness game “Fitness Ring Adventure”, which was a big hit in 2020, only requires two game handles to be fixed by straps and bracelets, and then you can run and jump in the same place to perform the leveling activities.

Compared with the traditional physical game requires large equipment or a single scene has a stronger portability and higher playability. In addition this game can also be connected to VR equipment, so that players have a better immersion experience at the same time, but also physical exercise. According to Nintendo’s official financial report: In this fiscal year ending March 2021, the Fitness Ring Adventure has sold 7.38 million worldwide, and sales are currently continuing to rise [22]. At the same time, the sales of other physical games are also in the process of climbing. This also shows that with the continuous development of metaverse technology the public is choosing games not only for sitting in front of the computer or on the cell phone, but also for physical exercise as a factor of choice.

2.2.3 Audience Characteristics of Metaverse Communication

In the Web 2.0 era, users are no longer just information receivers, but participate in the production of information. In the context of metaverse, users can participate more deeply in the production of content and can create their own parts of the metaverse world to change the direction of the content according to their own wishes. In Roblox, the game platform provides a set of tools and methods to allow more people to develop games autonomously and invite more people to participate based on social interaction. When the TV series “Squid Game” was a global hit, developers added some of the scenes developed in the TV series to the game, which has now attracted hundreds of millions of people to participate in the game and post screenshots of their games to social networking sites to document the process of their creation. The technology trend brought by the metaverse has led to an extremely high level of user autonomy. So how to attract

users' autonomy to participate in the communication process and properly establish their participation mechanism has become a hot concern for major development companies.

2.2.3.1 Audience Centrality

In the new media era, the role of the media audience has changed, and the audience has started to participate in the media and become users. Information resources and information channels are no longer scarce, and users can choose media and information according to their own needs and acceptance habits. Users are no longer one-way audiences, but have become nodes in information dissemination and an important part of the communication process. The media model has changed from audience model to user model, and the production of media products has shifted from "audience"-centered to "user"-centered [23].

The audience-centered feature is further reflected in the metaverse. When users use the metaverse for activities such as movie-watching, meetings, and games, they choose according to their actual feelings of participation due to the diversity of choices and the different characteristics of various platforms. Therefore, in the process of media communication, we pay more attention to the diversified needs of users and their feedback and adjust the communication content according to their feedback in time.

2.2.3.2 Diversification of Audience Participation Perspectives

In the metaverse, users can participate in the communication process through various identities. Virtual doppelgangers and virtual characters can be chosen by users.

Virtual bilocation refers to the integration of social, economic, and identity between the real world and the virtual world with the help of digital twin, block chain, and virtual reality technologies when users enter the metaverse [2]. Virtual role intervention means that users enter the metaverse with the help of avatar identities in the virtual world, for example, users can use the identity of game characters to participate in interactions. Through virtual personas, users can temporarily transcend their physical limitations, perform self-transcendence, and release their abilities to a great extent.

2.2.3.3 Changing Audience Needs

In the metaverse, the audience wants to have the experience of expanding and extending their own bodies, and they can even "create" and "fulfill" their dreams in the process. Because in the metaverse, it is possible to go beyond the usual perspective, beyond the real experience, and at the same time, it is possible to restore the real life. Users can use more high-precision physical interactive control devices, so that virtual doppelgangers and intelligent dummies can replace the natural human body to wade through dangerous situations and explore the world. And use sound input devices to better feel the subtle changes in the world around them. Especially in the metaverse, people with disabilities can significantly improve their ability to perceive, transform and participate in the world. Society's ability to assist people with disabilities will also be greatly enhanced.

3 The Use of Metaverse Communication in the Communication of Sports Events

3.1 The Relationship with Event Communication

The emergence of metaverse meets the needs of sports event communication, which needs the support of technology. In sports event communication, the immersion and participation of the audience are important factors in determining the choice of communication media.

Compared with the traditional mode of sports event communication, sports event communication under the background of metaverse will pay more attention to the user experience and the effect of communication. Whether it is the use of VR/AR or other emerging technologies, it extends human perception from vision and hearing to touch, so that users can hear and see to feel, and make the sensory organs participate in the immersive communication process in a more three-dimensional way. This is a great attraction for audiences who are involved in sports events to be able to feel the live atmosphere and communicate with others remotely through the metaverse with virtual doppelgangers at home.

The metaverse will fundamentally change the main aspects of sports communication and will become the main reason for audiences to participate in sports communication because of its embodiment, immersion and two-way nature. The development of metaverse makes more possibilities for sports event communication, and immersive participation in sports events will become possible soon.

3.2 Realistic Application of Metaverse Communication in Sports Event Communication

The promotion and use of metaverse is a dream-making process for the public, but because metaverse itself requires high equipment and is relatively complicated to enter, people do not rely on it for all their social activities, and only in some specific occasions will they use it for high-fidelity and out-of-reality communication activities. The communication of sports events can meet the conditions for audiences to choose metaverse, and audiences can immerse themselves in the exciting communication of events through metaverse.

3.2.1 Based on Sports Event Ontology

With the development and implementation of metaverse technology and related technologies, some sports events have been held in the metaverse world. At present, there are two major manifestations of sports events in the metaverse, which are the virtualization of physical events and the virtualization of network events. The virtualization of physical events refers to the virtual tournaments held in the metaverse for the sports events that exist in the real world; the virtual events in the network refer to the events that do not exist in the real world but are held in the metaverse.

3.2.1.1 Virtualization of Physical Events

The virtualization of physical events, combining reality and virtual, breaks the space-time distance between the physical event venue and the participants, and since 2020,

the virtualization of physical events has become a new development trend for traditional sports events. The first virtual sports event to be officially licensed by the Olympics. The main events will include baseball, cycling, rowing, sailing and racing.

The Olympic virtual tournament has attracted players from all over the world. Unlike previous events that relied on local area networks to connect players in close proximity and limited space to compete together, the Olympic Virtual Tournament breaks through geographical boundaries and connects the world of sports with virtual sports communities. Players at home can compete and face off with players all over the world through gaming devices, bringing players a new and unique Olympic digital experience. And influenced by the new crown epidemic, NBA, F1 and other major events have held virtual events online and achieved good spreading effect. It can be foreseen that even without the impact of the epidemic in the future, with the maturity of metaverse technology, virtualization of physical events has become a trend in the development of sports events.

3.2.1.2 Holding of Virtual Events

In addition to virtualizing physical events, the development of metaverse is also driving a number of virtual events to be held. Virtual events are held in the metaverse, which helps to broaden the range of participants and is not affected by natural weather and other factors. Because virtual sports are highly similar and not restricted by weather, venue and time, they have unique convenience and participation, and are sought after by today's youth. While physical events rely on their own strong IPs to attract the public's attention, virtual events, as a new trend, are also attracting a large number of Internet residents to participate. The first virtual sports tournament in China, the Shanghai Virtual Sports Open, will be officially launched in 2022 and open for registration in April 2022. The event will include skiing, racing, cycling, rowing and other events [24]. Virtual sports events are based on traditional sports, and virtual participation and confrontation are realized through intelligent simulation equipment and Internet competition platforms. In the future, along with the maturity of metaverse-related technologies, there will be more novel competitions to attract users to participate.

The "National Fitness Plan (2021–2025)" issued by the State Council [25] proposes "to provide intelligent services for national fitness, promote online and intelligent sports events The policies such as "provide national fitness intelligent services, promote online and intelligent sports events, support the development of smart fitness, cloud events, virtual sports and other emerging sports" also promote the development of sports industry and virtual sports.

3.3 New Forms of Derivation

In addition to promoting the development of sports event communication, the meta-universe has also generated a large number of event-related products outside the event, among which the derivatives of digital entertainment and education services are the most representative.

3.3.1 Digital Entertainment

Digital entertainment industry refers to the cultural industry based on digital technology such as animation, cartoon and online game [26]. Under the development of virtual

events, a number of games derived from the events are liked by users. For example, NBA's derivative game NBA2K online2 [27] In the new update, the player's avatar image will be more realistic to the players, and the reaction and effect made by the character's confrontation in the game will be more close to the real situation of the players themselves This will allow players to become more immersed in the game. With the development of metaverse technology, there will be more markets for such digital entertainment products as well as development to bring users a better gaming experience.

3.3.2 Education Services

With the development of AI artificial intelligence, avatars also play an important role in sports events, especially in educational services. In the current Winter Olympics, there is a virtual human coach - Guanjun. Guanjun is an AI referee and coaching system developed by Little Ice. In the 2021 Winter Olympic Games test event, Guanjun was the only judge for the aerial skills event. Through Little Ice's deep neural network rendering (XNR) technology, Kuanjun has been given virtual human characteristics, including appearance, voice and unique personality. So that Guanjun then has biological characteristics that are highly similar to those of humans. With this, it can be seen that along with the development of the metaverse and the use of artificial intelligence, such as Guanjun and other artificial intelligence in sports events and other applications, the fairness as well as objectivity of the event has been greatly guaranteed.

4 Conclusion

The development of the metaverse has brought a new spring to sports event communication and made more possibilities for sports event communication. The metaverse can break the physical distance between sports events and the participants and spectators, and bring the world's sports event fans together in a virtual, highly immersive and highly simulated world.

The current vision and expectation of metaverse is very good, and there is a lot of capital investment and R&D team, but the construction and perfection of metaverse will not be completed in a short time. However, it will be a long-term trend in the future development of the Internet, especially in sports events, plays, movies and other applications that require a high degree of user immersion.

It is worth noting that the meta-universe is not yet mature, and the protection of users' rights and interests, privacy and security, and anti-addiction are the issues that audiences are concerned about now and need to be further addressed by the relevant departments and enterprises.

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