The Live Commerce of VTuber

Ziyu Zhao

Denison University, America, Granville, 43023

zhao_z2@denison.edu

Abstract. With the iterative update of mobile communication technology, the improvement of Internet technology, and the reduction of video recording costs, online video live broadcasting has entered a period of development. Webcast events are not only entertaining but have become a place to market products. Due to the low threshold of webcasting technology, it has attracted a large number of people into the livestreaming market, making the content and scenes of webcasting more diversified. Before the arrival of the Metaverse, these virtual digital people had already brought goods into the real world and become assistants to live broadcasters. People are looking forward to it, expecting virtual digital people to display their talents in more fields. This study uses the method of literature review to study the reasons for the rapid rise of virtual live broadcast and the current application situation in the future. In the end, the study found that there are still many problems with VTuber in live streaming, and there is a gap between live streaming and live broadcast.

Keywords: Vtuber, Live commerce, live streaming, metaverse

1 Introduction

With the iterative update of mobile communication technology, the improvement of Internet technology, and the reduction of video recording costs, online video live broadcasting has entered a period of development. Online live events are not only entertaining but have also become a social vehicle. Due to the low threshold of webcasting technology, it has attracted a large number of people into the livestreaming market, making the content and scenes of webcasting more diversified. The nascent crowd includes virtual streamers, also known as Vtubers. VTuber, non-real anchors, can realize a 24-hour uninterrupted rotation in the live broadcast room during the gap between live broadcasts, which makes up for the gap when there is no live broadcast in the live broadcast room, allowing consumers to enter the live broadcast room at any time, in order to retain consumers and increase consumer stickiness.

As not many papers focus on this aspect in detail, this paper will use literature review as the main research method. On the basis of synthesising previous research on VTubers or virtual assistants, this paper analyzes the current application status of VTubers in e-commerce live broadcasts and predicts the practical application of VTubers in the metaverse in the future. The purpose of this study is to understand how VTubers have

emerged and how they are used today. This study is intended to help identify the advantages and disadvantages of virtual live streaming.

2 VTuber background

2.1 Introduction of VTuber

Live-streaming E-commerce has gradually become the most popular way of selling goods, and "live-streaming with goods" has also become the most frequently used term on various e-commerce platforms and social networks. Not only have e-commerce platforms launched live broadcasts to sell goods, such as Taobao, Jindong, Pinduoduo, etc., but also Kuaishou and TikTok, which take short videos as their core business, have also made great strides towards live broadcast e-commerce. live broadcast host. In contrast to the direct display of product details, the anchors in live broadcast e-commerce can interact with consumers in real time and show consumers the attributes of the products and how they are used in a more intuitive manner. [2] At the same time, it can also be tried out according to some personalized requirements of consumers and share the trial experience with others, making consumers more interactive and immersive in the shopping process to achieve better sales results..

As a result, many brands are also paying more and more attention to live broadcast e-commerce, so they are investing more and more in live broadcast e-commerce. They not only cooperate with the live broadcast rooms of Internet celebrities but also develop their own live broadcast rooms. The author hopes that my products can appear in the live broadcast room anytime, anywhere, occupying consumers' time and generating sales. Whether it is a live broadcast room of a company or an Internet celebrity, they all hope to be able to live broadcast 24 hours a day, which means that consumers can stay for a while every time they enter, instead of finding out that they have missed the live broadcast and turning to other live broadcasts [1]. Such requirements are difficult for live anchors and brand owners to meet, so the form of VTubers appeared.

At present, there is no very clear definition of "VTuber". "VTuber" can be understood as the main body engaged in online live broadcast behavior with a virtual body image. Through facial capture, motion capture, and other technologies, the expressions and actions of the host are synchronized to the virtual character modeling in real time, so as to carry out activities such as webcasting. "VTubers" can be regarded as a development branch of "virtual idols" in the era of webcasting. They are all presented with the help of virtual body images, but the former focuses more on webcasting as a means of communication. Among the VTubers, only a very small part is AI, and most of them use 3D or 2D modeling, facial capture technology, full-body motion capture technology, and sound processing technology to transmit the expressions and body movements of real people to the second dimension in real time, to achieve a live broadcast.

2.2   Reasons for the rise of webcasting

2.2.1 Technology blessing: the product born of mobile communication technology.

With the support of technology, webcasting gives full play to the intermediary function of live broadcast media in the process of communication, thereby bridging the temporal and spatial distance in the process of communication. As Crotz said, "the boundaries between media activities and non-media activities are gradually dissipating." Live broadcast activities have involved economic, political, cultural, and other aspects and have become an indispensable part of people's daily lives. At the same time, online live broadcasting has also become a diversified content production subject, including news information, online games, e-commerce delivery, online marketing, audio-visual programs, and other content fields. [3] Multi-level communication not only enhances the user's sense of satisfaction but also provides the audience with multi-channel information choices, which leads to the merger of media and non-media activities and the elimination of the boundaries between the audience's social and life fields. The online live broadcast platform generated by 4G technology satisfies the audience's desire for performance and expression, and has become a tool for people to interact with virtual reality.

2.2.2 Collective presence: group carnival in pursuit of emotional belonging.

The online live broadcast space with a unique youth subcultural landscape is a network "new tribe" that has both a real new media space and a virtual meaning. Chen Lin, a professor at Soochow University, believes that "the new media space of youth subculture has the characteristics of aggregation and flow, which can give the youth subculture group a sense of belonging to the virtual space, so as to resist the huge pressure of life under many constraints in real life".[4] Individual activities in real life are often limited by the environment and identity, and the behavioral dimension of live broadcast subjects can be broadened in cyberspace. The unfettered self-presentation of live broadcast subjects in the live broadcast scene is also a way for individuals to vent their emotions and express their emotions. [5]

2.2.3 Differentiating Identity: Self-Construction of User Subject Image.

For network anchors, whether it is to show skilled operation skills in the game or unique personal talents, they become individuals who build their own image in front of live broadcast onlookers. For online onlookers, it is more of an identity projection and the establishment of a different image from others through consumption value. In the live broadcast room, user identities are differentiated by means of activity, fan level, and "rewarding," and the virtual identities of anchors and spectators are constructed. In the book "Consumer Society", Baudrillard believes that in postmodern society, people have begun to transform the consumption of objects into the consumption of symbols, and that behind the consumption of symbols is people's self-construction in society, including the presentation of self-image, identity, and social status. Users use value symbols to reflect the differences between themselves and others, to build their own identity and status, so as to show their differentiated differences and stay here.

2.2.4 Epidemic impact: The turn of live broadcast under the "catalysis" of the epidemic.

The outbreak of the new crown pneumonia in early 2020 not only quickly impacted people's normal production and lives but also profoundly affected people's thinking awareness and behavioral habits. From the perspective of information dissemination, since the beginning of 2020, epidemic prevention and control, social management, and national mobilization have changed the operation and functions of many media, resulting in a new mode of information interaction. The restriction of time and space activities in epidemic prevention and control has greatly stimulated the expansion of network time and space interaction, and online live streaming is a typical example. [6]. Data shows that during the epidemic, the demand for talent in the live broadcast industry soared against the trend. "The number of recruited positions increased by 83.95% year-on-year within one month, and the number of recruits increased by 132.55%."

On the surface, the rise of live-streaming goods delivery stems from the social organization and management needs of the epidemic, which has greatly stimulated the deep integration of the original Internet celebrity economy and traditional e-commerce. Among the trends, the epidemic is actually just a catalyst or a fuse: a new form of information interaction and business operation mode often has a long-standing deep motivation behind it, and live streaming is the reality of media operation and change. One of the manifestations is that under the catalysis of the epidemic, these internal motivations and essences are concentrated and strongly manifested.

3   VTuber status

In 2020, Taobao Live began to try to launch VTubers for live broadcast. At first, it was still from the perspective of the second dimension, but then it was found that its live broadcast effect was good, and then it was promoted to more live broadcast rooms and brands. In particular, in April 2020, Luo Tianyi entered the Li Jiaqi live broadcast room for cooperative live broadcast as an important milestone. As a representative of virtual idols, Luo Tianyi has accumulated a large number of loyal fans. Although there were silent live broadcast errors during the live broadcast, it opened the market for this virtual image to enter the live broadcast e-commerce field. Since then, Taobao Live has also continued to promote the entry of VTubers into the live broadcast room.[7]. Not only in daily activities but also in big promotions such as "Double Eleven," there is a certain bias towards VTubers in traffic.

At present, there are already many live broadcast rooms of merchants that use Taobao's VTubers in non-popular times, such as Philips, Mofa Shijia, etc. Merchants only need to set the image, voice, content, etc. of the VTuber in advance. Combined with the real-life motion capture technology, the VTuber can directly enter the live broadcast room to bring goods. At the same time, it can also interact with users in real time during the live broadcast. For example, when the user enters the live broadcast room, the VTuber will directly greet him, etc. Whether it is chatting or asking any questions about the product, the VTuber can respond anytime.

3.1   Live vs. Virial live

Is it a new tool for e-commerce live broadcast to reduce costs and increase efficiency in the future, or is it a new gimmick in the aftermath of the Metaverse? Compared with the delivery of goods in live broadcast rooms, the application of VTubers has several advantages. First of all, VTubers can fill in the live broadcast gaps of real anchors, so that the live broadcast room can be continuously rotated, and consumers who enter at different times can be retained to the greatest extent. Furthermore, the VTuber itself has a certain interest as an avatar because it is different from the real anchor in appearance, action, and language, which makes it more unique and interesting.

Judging from the data comparison, there is a big gap between the heads of VTubers and real anchors. A recent research report by Guohai Securities pointed out that the popular IP "I'm not free" among VTubers has been live-streaming and bringing goods since March 2020. In 2021, the GMV (gross merchandise transaction) will exceed 100 million yuan, becoming a virtual host. head star in the field of anchors. According to market agency data, in the past three months, the cumulative sales of live broadcasts of "I'm not free" on a short video platform reached 10.8899 million yuan, and there were 37 related live broadcasts. Luo Yonghao, the leader of the short video platform,'s live broadcast sales in the past three months totaled 915 million yuan and 128 related live broadcasts. [8] Calculated based on the average sales of each live broadcast, the sales of a single live broadcast of "I'm not free" is about 4% of Luo Yonghao's, which is not an exciting figure. The biggest advantage of VTubers bringing goods is their extremely low cost. Suppliers of virtual e-commerce anchors said that live anchors cannot do continuous live broadcasts and the cost of bringing goods for one hour is very high, but virtual people can live broadcast 24 hours a day and the cost is lower.

Enter the keyword "virtual human live broadcast" on a short video platform to search. There are already many tutorials for virtual human live broadcast. You only need to spend 999 yuan to buy "1 computer + camera". 5 minutes can quickly achieve 3D virtual live broadcast. "Yourself" You don't need any modeling, you don't need any technical skills; all you need is to use this software to broadcast live. " The cost is greatly reduced, and the 24-hour online live broadcast is aimed at consumers in various time periods. Is VTuber delivery really such a good business to reduce costs and increase efficiency? "At present, most of them are gimmicks." Cui Lili, executive director of the Shanghai University of Finance and Economics, believes that virtual human delivery of goods will rise in 2020, and its construction and operating costs will require a certain amount of financial support, which will test how the enterprise balances the cost of human resources, the potential risks of human anchors, and the input-output ratio of virtual human anchors. She also believes that, to a certain extent, the interaction and intimacy of live anchors are more acceptable to the audience. Of course, the 24/7 broadcast load of VTubers is still unmatched by real people. "VTubers are actually a pseudo-demand for food, beauty, or some highly interactive products." Wang Zhiwu, CEO of Yuanjing Technology, believes that it is difficult for VTubers to independently support a live broadcast room, and the greater value is drainage.

3.2   Difficulties with VTuber

The VTuber cannot do without a real person, and the interaction problem is difficult to solve. When will the virtual person be the main character of the e-commerce live broadcast? I'm afraid it's still far. In the field of e-commerce live broadcast with strong interaction, such as trial for consumers, tasting on behalf of consumers, and real-time interaction with consumers, the interaction between virtual e-commerce anchors and consumers is becoming the biggest problem. This may also be the reason why VTubers bring goods. The reason for the delay in the results of the data

According to the research report of the Toubao Research Institute, the application of virtual humans in the field of e-commerce live broadcast is still immature. In the case of daily traffic, the sales of virtual humans in the first three days after the application of the live broadcast room can reach 150% to 200% of the real live broadcast, but the sales after three days drop rapidly and stabilize at 10% to 30% of the live broadcast room. [9]. The market is anxiously waiting for the VTuber's delivery results, but the breakthrough of interactive technology still requires patience. Wang Zhiwu believes that the main reason for the development of VTubers with goods is that the interaction is not well done. "There is no interaction between VTubers and goods. No matter how good virtual people are, there is still no interaction. This will only change when there are more interactive games with goods. It is possible to attract attention. " Among the virtual humans created by 3D modeling technology, most of the strong interactions are driven by "people in the middle" in real time, rather than being driven by AI. The so-called "people in the middle" drive is to synchronize the movements of the real person with the virtual person through the motion capture drive. When technology can't keep up, real people continue to take the lead, which also increases the cost of VTubers' bringing goods.

4   Virtual Hosts in the Meta-Universe and future

At a time when the concept of the metaverse continues to be popular, the development path of virtual digital humans is the focus of common attention in industry and academia. The essential feature of the metaverse is the combination of virtual space and real space. In essence, the metaverse is a socialized field based on digital technology. Its basic foothold is still the real world, and its relationship with reality can be described as "alien": the virtual avatar in the metaverse has both connection and transcendence with the real person in the real world. In the future, in the imagination of the digital world of the metaverse, everyone may have a virtual avatar. The "human" appearance in the metaverse may not exist on Earth, but it has biological characteristics similar to real humans and can even have its own behavior or way of thinking. The author hopes that in the future, in the metaverse era, humans and virtual digital humans will have a harmonious and symbiotic relationship. That is to say, the development of the metaverse does not affect the existence of the real world, and the two sides are not a zero-sum game, but a state of progress and compatibility.

Although the virtual digital human will not be used on a large scale in all walks of life in the short term, it will have great application value in specific scenarios. At present, performing arts, variety shows, and entertainment are the core driving forces, but in the future, it may be the anchors and employees that will grow faster in the future, that is, assistant roles with auxiliary functions.[10] In addition, if we put these virtual people in the framework of the metaverse and give them more roles, for example, you can sleep at home, let your digital people help you as a host or customer service, then it may not be according to the so-called virtual employees, VTubers, and virtual idols who are divided in this way. We have to think about how human beings can use their virtual characters to achieve a second life, and we have to think about the rights, regulations, wages, taxation, and even morality of these virtual people.

5   Conclusion

The development of VTubers also faces opportunities and challenges. Through research, it is found that the rise of VTubers is mainly caused by four reasons: collective presence; technology blessing; differentiating identity; and epidemic impact. Such opportunities create a new stage for VTubers to achieve the value of capital. However, technology and challenges always go hand in hand, but technology needs to be accumulated for a long time. By comparing the live broadcast and the virtual live broadcast, we found that there is still a clear gap between the two, and the VTuber obviously lags behind the effect of the live broadcast. The paper finally focused on the popular topic of Metaverse because VTubers are also one of the hot topics in the Metaverse. Virtual live broadcast can enrich the metaverse, but due to the limitations of technology, VTubers still have the problem of using scenarios.

At the same time, there are also shortcomings in this research. Most of the conclusions in this research are derived from other papers, which lack support from data. In the future, there will be opportunities to use the data in the database to further analyze the situation of VTubers.

References

1. Xu Xiaoli, Research on the influence of interpersonal interaction on consumers' impulse purchase intention in e-commerce live broadcast—taking Taobao live as an example. Advances in Psychology, 2021, 11(11), pp. 2612–2622. https://doi.org/10.12677/ap.2021.1111298
2. Lin Haixiang, The predicament of Chinese virtual streamer crossover marketing and the ways for breakthrough. Advances in Social Sciences, 2020, 09(12), pp. 1867–1876. https://doi.org/10.12677/ass.2020.912262
3. Ying XIE, Chunqing LI, Peng GAO, Yi LIU, A study on the effect of social presence on online submissive consumption in live marketing and the mechanism of action - Behavioral and neurophysiological perspectives. Advances in Psychological Science, 2019, 27(6), pp. 990-1004. https://doi.org/10.3724/sp.j.1042.2019.00990

4. Verhagen T,Van nes J,Feldberg J,et al., Virtual Customer Service Agents: Using Social Presence and Personalization to Shape Online Service Encounters[J].Journal of Computer-mediated Communication, 2014, 19(3), pp. 529-545.
5. Wei, Hua, Gao, Jinsong, Duan, Fei-Fei, The impact of information interaction on user engagement behavior in live e-commerce model[J]. Intelligence Science, 2021, 39(4), pp. 148-156.
6. Yang Xiao, Problems and countermeasures of tourism live broadcast under the background of Corona virus disease 2019. Advances in Social Sciences, 2020, 09(11), pp. 1757–1760. https://doi.org/10.12677/ass.2020.911246
7. Xue-Liang Pei, Hui-Mei Deng, A study of live e-commerce platform based on Taobao Live The study of value co-creation behavior process of e-commerce platform based on Taobao Live[J]. Journal of Management, 2020, 17(11), pp. 1632- 1641+1696
8. Zhou, Gongjian, Innovation Analysis and Research of Live Streaming Model of Netizens under the Wind of Live Streaming. MICE Foresight, 2021, 02(02), pp. 134-139. https://doi.org/10.52288/mice.27069273.2021.09.15
9. Zhou, Gongjian, Innovation Analysis and Research of Live Streaming Model of Netflix with Goods under the Wind of Live Streaming. MICE Foresight, 2021, 02(02), pp. 134-139. https://doi.org/10.52288/mice.27069273.2021.09.15
10. Xuheng Xu, Guiheng Zou, Lifeng Chen, Ting Zhou, "Metaverse Space Ecological Scene Design Based on Multimedia Digital Technology", Mobile Information Systems, vol.2022. https://doi.org/10.1155/2022/7539240