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The Development of Virtual Reality News and Feasibility Analysis on its Commercialization

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Abstract: Appling virtual reality technology to news spread makes the form and content of transmission more interactive and innovative, with researches on virtual reality news also gradually increased, this paper shows some new thinking on the classification of virtual reality news, and analyses the application field of virtual reality news widen and technology trends from the perspective of the business model.
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I. Virtual reality news and its communication effects under the perspective of communication studies

(1) Virtual reality news under the field of communication studies

Virtual reality technology is an emerging technology that uses computers to simulate the three-dimensional space of buildings and scenes in real life. It has achieved major breakthroughs in recent years, and it has been widely used in all walks of life, especially education, medical, games and other fields. In this context, the news media industry has gradually become more and more in keeping with the times, and virtual reality news has begun to show its edge in the industry.

Virtual reality news refers to a new form of news that uses virtual reality technology for news production and dissemination. Of course, compared with the news content itself, it emphasizes a form of communication. The 'news' here is not limited in traditional news form. In particular, the core appeal of VR news production lies in 'experience value', which is the 'additional value' in the sense of traditional news value. At this time, the use of VR technology as a medium of communication in the logic of news production and the pursuit of traditional news value are almost completely broken.[1]

Virtual reality news enables the audience to feel the news in all directions and in multiple dimensions through the modeling and reproduction of real scenes. Compared with obtaining information through a single video, copy, image, etc., virtual reality news provides a more biased network of multi-dimensional news space instead of a thin news event, giving the audience full freedom and autonomy to explore and discover news.

(2) Diversification of virtual reality news based on timeliness

As far as the author's literature is concerned, the types of virtual reality news are almost divided into three categories: virtual reality news documentary, virtual reality real-time report and virtual reality scene news.[2]It seems to be still debatable. The news documentary is one of the news content, scene news and real-time reports are both one of the broadcast methods. It seems that there is something wrong to be juxtaposed.

1. News documentary

After an in-depth study of the definition and form of the news documentary, the author believes that the news documentary in the virtual reality news emphasizes the weak timeliness. It does not care about the time when the news report is published. On the contrary, it may be a kind of public welfare and science that can be played at any time. For example, the New York Times used virtual reality to create the first serious news. The documentary film 《The Displaced》 revealed the most terrible humanitarian crisis of this era, and hoped to attract readers to pay more attention to the 3000 displaced by the war, especially the situation of thousands of refugee children.[3] Another example is the interpretive news project 《Changes in Harvest》 created by the US Des

Moines Chronicle in 2013 in collaboration with a film company in New York. It describes the history of the family farm in Iowa and shows it in a small place. Various aspects of the American agricultural society. Using virtual reality in this kind of news documentary is consistent with the source of the documentary, aim to teach people about the knowledge of science and education.

2. Scene news

Scene news emphasizes the real scene of a news event happening through virtual reality technology, mostly by creating a three-dimensional model for scene reproduction. Scene news can actually include real-time and outdated news, and some recent or just happening news events that can be shocked by virtual reality technology, such as car accident, disaster scenes, murders, etc. Based on today's technology, it is not much different from real-time news reports. If a three-dimensional modeling and reproduction of a classic building or garden is carried out, the audience can observe the structural space from all angles, thus the difference from the scene news can almost be ignored. In his book 《The Era of Emerging Scenes》, Robert Scober and Sher Isrell pioneered the concept of the mobile Internet era and predicted that mobile devices, big data, sensors, social media, and location systems would be the five technological trends in the scene era. The content scene under the technology empowerment gives each individual in the presence of an unprecedented presence, and the user will get an immersive media experience.[4] According to Scober's theory, virtual reality news itself is a process of scenes news. Each kind of virtual reality news can be called scene news, the only difference is the weight of scene and content.

3. Real-time news

Virtual reality real-time news is actually based on existing technology and can only achieve near real-time. In 2015, a mountain landslide occurred in a certain place in Shenzhen. At the same time when people were rescuing the victims, two virtual reality professional videographers took three hours of filming on the spot, and then edited by post-production for two hours before they were presented to the audience. In the era of communication 4.0, such reporting efficiency is not satisfying, and one of the most important indicators in today's era to get more attention is the speed of broadcast.[5] From the entertainment news incident exposed in early December last year, Ma Rong broke the news of Wang Baoqiang's domestic violence through the media. The event itself has received great attention, several news gifs are also spreading on various social platforms quickly. The content of the gif is Ma Rong being shooted by several news media on the way home from the hospital. Although this is just entertainment news, it can also be seen from the fierce competition between news media and the importance of news timeliness today. Therefore, there is still a big technical gap between the so-called real-time and actual real-time. The author believes that it can be divided into three levels: traditional real-time reports, near-real-time reports, and live broadcasts. Traditional real-time reports are similar to paper media. The events that take place today will be fully published after a day or two of precipitation and consolidation. The scope of application includes major conferences, cultural events, etc. Near-real-time reports are similar to the above-mentioned Shenzhen landslide event. The unknown nature of the disaster will definitely have an equation of time, and the significance of the news report is that the ordinary people can feel the tension of the disaster scene, and the rescue mission is the most important thing. Therefore, it is not necessary for the disaster news to be broadcast in real time through virtual reality. However, the difference between this and traditional real-time news has also become blurred. Live broadcast is a way that the current technical level has not yet been fully realized, and the main application areas including sports events, music scenes, electric competitions and other news can often be predicted in advance. The event, through pre-preparation work and live broadcast system arrangement, can perfectly present the scene environment to the audience through virtual reality technology. In summary, only in the author's view, scene news and real-time news are partially overlapped. Therefore, the classification criteria of virtual reality news can further distinguish the boundaries between various virtual reality news categories based on the timeliness, that is: News documentary, traditional real-time news and live news.

（3）Communication effect analysis

To study the commercial feasibility of virtual reality news, we need to know how the virtual reality news is spreading. At present, there have been many experiments to prove that virtual reality news is slightly weaker than the traditional text news in communication effect, but the intensity of emotional communication has been improved, and because the virtual reality news is more interesting, behaviors of the audience after accepting the news will be more active. Inputting comprehensive and multi-dimensional information, rich and free perspective selection can both bring a more real and detailed experience to the audience, so it can enhance the trust of immersive virtual reality news reports. Paul Levinson’s theory of compensatory media argues that ‘any medium is a remedy and compensation for a certain media function in the past’. Therefore, from the perspective of communication effects, virtual reality news can be seen as a kind of strengthening and

compensation of traditional news in subjective emotions and initiative. However, precisely because of the characteristics of virtual reality news communication, the development of virtual reality news faces a series of challenges. Lippmann puts forward the 'mimicry environment' in 'Public Opinion', that is, mass communication is not a mirror-like reproduction of the objective environment, but an environment that is selected, processed and re-structured to remind people. This is the difficulty that needs to be overcome in the process of virtual reality news communication. How to ensure that the objectivity of news is not affected by subjective emotional factors? In addition, how to choose the correct and appropriate theme for virtual reality of traditional news? How to avoid the weakening of information dissemination? A series of problems must be adjusted through repeated practice and theoretical revisions.

II. Virtual Reality News development and Commercialization Feasibility Analysis

(1) Developing technical needs

As mentioned above, virtual reality real-time news can be divided into three categories according to the strength of timeliness: traditional real-time reporting news, near-real-time reporting news, and live broadcast news. Because of the different timeliness and different types of news content, naturally there are different technical needs.

The first type of traditional real-time report news and the second type of near-real-time report news are available for later editing. The appropriate news topics are large-scale literary events, international and domestic conferences, natural disasters, and so on, which usually broadcast through the ordinary TV or webcast. However only using flat video to display these activities can not make the audience feel immersive and presence, so it is necessary to make the audience feel the atmosphere at the scene through the virtual reality technology. This kind of news report is not so strong that it can be achieved already. In the future, it may only be necessary to expand the depth of technology in terms of clarity and interactivity of VR video.

The third type of live broadcast report news has high technical requirements. The live report needs to be modeled in advance, and the news recording and dissemination is carried out in a whole set of real-time virtual reality rendering system, but the current technical level is far from such. It is required that China's current research in this area is mainly concentrated in virtual reality concerts and virtual reality sports competitions. In the author's opinion, this is also the most suitable theme for the third type of live broadcast. The live atmosphere of concerts, sports events, game events and other live events are consistent with the characteristics of virtual reality. It also helps the event itself to maximize the viewing experience. In terms of sound collection, the effect of stereo surround sound has been very realistic, and the change of the sound intensity and direction of the user's position is basically achievable.

(II) Analysis of the feasibility of commercialization

According to the characteristics and classification of virtual reality news, the author conceived several VR news topics that are most likely to flourish in the future. The news documentary includes war disasters, cultural relics, public welfare science, etc. Real-time news includes music scenes, spectacular meteorology, large-scale events or matches, etc. It is generally believed that the VR platform that emphasizes 'immersion' is more suitable for dynamic visual news such as emergency reports, sports events, and natural ecological landscapes. Subject to many bottlenecks such as technology, talent and business, the content scene constructed by VR news does not balance the relationship between personalized information and public information.[6]

Traditional media has a form of soft advertising that can spread business information to audiences through news. The application of virtual reality technology can present the news scene well, and deliver the panoramic view of the scene. At the same time, it also presents the details of the needs of the merchants at the same time, and solves the problem of the fusion of news and soft advertisements. Therefore, combined with the actual technical level and user needs, the most suitable for the commercialization, patterning and specialization of virtual reality news is the cultural relics, meteorological wonders, music scenes and large-scale event news, while the latter two are similar in form, so the business model is assumed from three major categories.

1. Heritage building

The cultural relics building category is a news documentary type news that has slow changes or even no changes, and is therefore the most stable business model envisaged. This model is similar to news for a particular scene, and now has a good foundation for development. For example, in various museums around the world, the normalized AR interaction design has been widely used, and it has also been popularized. It is conceivable if the background stories of some museum collections are made into VR news documentaries for people to watch and enjoy, which can play a huge role in the promotion of the museum and the science of the collection. Unlike the existing AR design, the VR news documentary can be displayed and sold on the museum's official website, even without the requirement for consumers to go out of the house, which is also a major advantage of the

impact of the new era on the development of news. The commercial development of museums is a kind of industrial structure with low energy consumption and high output value. As people's income grows, the demand for cultural consumption also increases. Therefore, the rich cultural resources of the museum are worthy of exploitation. However, the museum itself is a public institution that collects, protects and displays culture to the public. Its cultural and economic value is huge, so that the degree of commercialization should not be too high.

The architectural category includes visually ornamental attractions such as classical gardens, temples, and courts. For example, Suzhou Humble Administrator's Garden has built the VR experience museum, which is the first project in China to customize and use VR to interact. Visitors can take advantage of VR to take a six-axis dynamic sedan chair, enjoy the gardens of four seasons, classical and elegant courtyard pavilions, corridors surrounded by trees and flowers, and the charm of poetry and paintings. The Forbidden City also launched the 'The Palace Museum VR Experience Hall' project. The advanced VR technology breaks through the limit of time and space, let visitors walk, touch and experience in the vivid historical scene. These two applications are in the form of experience pavilion, located in the vicinity of the building site, based on the specific facilities to enhance the fantasy effect, and the author believes that the mature business model is based on when the VR device are normalized like smart phones, so there is no need to build an additional experience hall. Each classical garden, temple, and court can develop a customized version of the VR application for promotion, and carry forward the excellent Chinese classical traditional culture.

2. Meteorological wonders

Under the premise of social science and technology development, most meteorological spectacles can be predicted in advance. Therefore, it is possible to set up observation points of different locations, different angles and different orientations according to different meteorological conditions to carry out virtual reality systems and real-time rendering systems. The construction will be carried out in real time as the weather spectacle comes. However, based on the current level of technology, it may be difficult to achieve such real-time rendering function. Therefore, the business model that can be transformed in the near future is to record all kinds of meteorological wonders through high-definition camera shooting, and post-production for collection. On this basis, it is also possible to carry out various commercialization, for example: VR eclipse game based on live shooting, VR children's astronomical commons science film based on live shooting, VR healing room live wallpaper based on live shooting, and so on.

3. Large-scale events

Large-scale events include musicals, sporting events, game events, concerts, etc. It is also one of the most commercialized in its own right, so there have been various attempts and some are already very mature. For example, a holographic concert held that only needs to be viewed by the naked eye, because it does not need to wear any equipment and the effect is really loved by people, the most successful 'Ten Lijun Legend' through Hollywood's top visual effects three-in-one technology——virtual digital modeling, real-time motion capture and immersive stage experience reproduces Ten's elegant charm in the form of holographic images, which enhances the user experience in a traditional concert. At the end of October this year, Mango TV lined up a dance show 'Dance Storm', the biggest highlight of which was the use of a 360-degree panoramic camera to restore the most eye-catching moments of each dancer's performance track through technology. Its use of panoramic technology extends people's limbs and senses, enabling people to reach out to areas that are not reachable, giving full play to the advantages of virtual reality news, and achieving the perfect stage effect in a short period of time. However, the author believes that personalization is a general trend after all kinds of technologies becoming mature. Therefore, if the virtual reality concert is platformized after the visual effects technology is perfected, it may be better to give the user free choice and free viewing aspects.

III. Discussion

In general, when 5g and its supported IOT can be widely used, virtual reality news will definitely be widely applied to the consumer market, and drive the diversification, commercialization and integration of news industry, even be able to change our lifestyle and change the world. However at present, due to factors such as limited development of science and technology and single content of the news subject, there are still many challenges in the development of virtual reality news and subsequent commercialization.

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1. Li Minghao. Audiovisual Media Intelligence and Traditional Media Ethics [j]. Modern Audiovisual.

2018(11)
2. Wu Qingliang. Types and Characteristics of Virtual Reality News [j]. New Media Research, 2017, 3(11): 28-29+32.
3. Wa Zijun. The Application and Development of Virtual Reality Technology in News Reporting——Taking "The Change of Harvest", "Hunger Los Angeles" and "Displacement" as an example [j]. New Media Research, 2017, 3(20): 8-9.
4. Yuan Wenli, Mi Yazhen. Exploring virtual reality news from the perspective of scene theory [j]. Young reporter, 2018 (35): 7-8.
5. Chen Yuehong, Li Yiwen, Gao Minghui. Communication under the "Internet +" era 4.0 [j]. News knowledge, 2016 (03): 21-24.
6. Shi Yuhong. Application Analysis of Virtual Reality in the News Industry[j]. New Media Research,2018,4(19):46-47.

References

1. Yan Meichen (2018). The challenges and countermeasures of vr virtual reality technology in news report applications. Audiovisual, (07): 181-182.
2. Gong Yue (2018). The development and application of virtual reality news and its strategy research. Jiangxi University of Finance and Economics.
3. Yan Yan (2017). The impact of virtual reality technology on video news. Hunan University.
4. Yang Bohan (2018). vr+News: Multiple impacts and prospects of virtual reality technology on news reports. China Media Technology, (05): 124-125.
5. Ge Ran (2019). The application of virtual reality technology in the field of television news. Communication Research, 3 (01): 243.
6. Li Yiwen (2016). Virtual reality news design and its dissemination effect research. Harbin Institute of Technology.
7. Xu Yuliang (2017). Practical exploration of vr news production and dissemination from the perspective of media technology. Hubei University.
8. Jiao Yuping (2018). Research on virtual reality news production and its impact from the perspective of media technology. Shanghai Normal University.
9. Zhou Yong, Ni Lerong, Li Wei (2018). An Empirical Study of the Spreading Effect of "Immersive News"——An experiment based on information cognition, emotional perception and attitude intention. Modern Communication (Journal of Communication University of China), 40(05): 31-36.
10. Xu Yan (2018). From linear to high-dimensional – the application scenarios and production misunderstandings of virtual reality news. Chinese Cultural Industry Review, 26 (01): 79-101.
11. Zhou Wenjie, Wang Yu (2018). Compensatory interpretation of vr technology on traditional news dissemination [j]. Technology Communication, 10 (16): 1-2.
12. Wang Nan, Xu Tianyi (2018). Vr news current development dilemma and solution path research [j]. Southeast Communication, (12): 33-36.
13. Yan Yue, Zhang Wei (2019)."Seeing is virtual": Analysis of the current status of domestic vr news production - taking the upstream news client vr channel as an example. Audiovisual, (01): 162-164.
14. Zhu Dandan (2019). Provincial TV station vr news test and prospect analysis. New Media Research, 5 (03): 102-104.

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