A Practical Exploration of VR News Production and Dissemination from the Perspective of Media Technology (Postprint)

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Abstract

During the 2016 Two Sessions, Xinhua News Agency employed VR technology, presenting the grand and solemn Two Sessions scene in a spectacular and dazzling manner. Since then, VR technology has gradually entered China' s news reporting. Personnel in the news industry closely monitor its application in news production and development. However, certain problems exist in its news production and dissemination, such as a shortage of relevant technical personnel, high costs, excessive fees, and improper equipment management. To clearly understand the problems of VR technology in news production and dissemination, this paper analyzes them and proposes certain solutions. This paper analyzes the significance of VR technology for news production and dissemination, its current development status and future prospects, and proposes corresponding solutions to address the existing deficiencies in VR technology.

Full Text

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Abstract: During the 2016 Two Sessions, Xinhua News Agency employed VR technology to present the grand and solemn event with remarkable brilliance. Since then, VR technology has gradually entered China' s news reporting landscape, attracting close attention from news professionals regarding its application in news production and development. However, certain problems exist in its production and dissemination, including a shortage of relevant technical personnel, high costs, excessive fees, and improper equipment management. To clearly understand these issues, this paper analyzes VR technology' s role in news production and dissemination and proposes solutions. It examines the

significance of VR technology for news production, its current development status, and future prospects, while offering corresponding solutions to address its existing shortcomings.

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Introduction

VR technology was already born in the 20th century, but due to the lack of relevant theoretical research and complete equipment support, it was not well utilized at the time. VR first appeared in science fiction novels, and some researchers believe its origins can be traced back to flight simulators from the 1920s. The VR industry began with the US-Soviet military competition and was later adopted for civilian use. VR news has developed rapidly, relying on VR technology. Due to its novelty, it can shine brilliantly in the field of news reporting and bring certain prospects to the journalism world. Some foreign media outlets have already begun applying this technology in news reporting, such as the Wall Street Journal' s VR "roller coaster" and BBC' s 360-degree video reports. In China, whether it was the People' s Daily' s "September 3rd Military Parade" VR panoramic video in 2015, subsequent sports award ceremonies, or the 19th Party Congress, all have brought VR news into the public eye. Consequently, VR news has become a beautiful landscape under the perspective of media technology.

1. Related Concepts of VR Technology

The term VR comes from the English "Virtual Reality," which translates to "virtual technology" in Chinese. This technology uses computer technology to simulate a three-dimensional space into a virtual world and employs computers to perform complex operations on it. Through computation, it provides users with visual and other sensory simulations, allowing them to feel immersed and observe objects in the three-dimensional space without limitations. The three-dimensional space can move according to the user' s position without the user noticing. The components of this technology include computer graphics, computer simulation, artificial intelligence, sensors, and the internet. It is precisely because of the division of labor and collaboration among these components that the high-tech system of virtual reality has become an important direction of simulation technology. Immersion, interaction, and imagination are the three basic characteristics of virtual reality systems, emphasizing the human' s dominant role in the virtual system.

2. Current Status of VR Technology in News Production and Dissemination in China

As VR technology became popular abroad, China' s news industry also began applying it to news production and dissemination, with many media outlets conducting relevant experiments. In television, besides the major player CCTV, Hunan TV and Beijing TV have all collaborated closely with VR content teams. Official media such as the People' s Daily and Xinhua News Agency have also experimented with VR technology. Non-official media represented by Caixin Media have produced multiple news reports and documentaries primarily using VR technology. Additionally, web portals like Sina and Baidu have used VR technology to display panoramic videos. For example, Southern Weekly launched a running VR documentary in 2016 that mainly used panoramic cameras to record the experiences of five running enthusiasts during their runs, allowing interested viewers to watch directly on their mobile phones. The shooting locations were mainly famous scenic spots, giving viewers an immersive experience. Furthermore, during the 19th Party Congress, multiple media outlets used this technology to conduct comprehensive on-site reporting, perfectly presenting the grand event before hundreds of millions of people. Among them, the all-media special topic "Focusing on the 19th Party Congress" jointly launched by the Nanjing Municipal Cyberspace Administration and Nanjing Daily also employed VR panoramas. However, it is worth pondering that producing high-quality VR news like European and American powers still requires the joint efforts of relevant personnel. In time, this technology will become an indispensable and important component of the journalism world.

3. Problems in VR News Production and Dissemination

3.1 Lack of Authenticity Due to VR' s interactive nature, human intervention can occur during its application. Consequently, VR news reporting faces new challenges, as news authenticity is susceptible to certain challenges. As is well known, authenticity is the core and lifeblood of news, and objectively reporting events as they originally occurred is the duty of journalists. However, the principle of VR technology is to combine reality with virtuality using virtual technology. Although it can make people feel immersed and provide certain images, the environment it presents is not original. Therefore, this environment is susceptible to external questioning, and some may even believe that the news environment itself is created and that the scenes inherently contain certain falsehoods. Over time, people will begin to doubt whether what they see in VR news is real. Therefore, the authenticity of news will become a key issue of focus in the future.

3.2 High Costs Since VR news requires certain technical support, the cost of producing VR news is relatively high. Coupled with long production cycles, it is currently difficult to produce on a large scale. Additionally, completing a VR video takes at least several weeks at minimum, and longer ones may re-

quire several months. Since the birth of news, to coordinate its economic and social value, the common method has been to insert advertisements into news to achieve a certain balance between news production costs and advertising. However, how to adopt this business model in VR news and how to make audiences accept it are indeed difficult problems. Taking The New York Times as an example, when it added four advertisements to a VR video, the click-through rate of the advertisements was relatively high. This model not only allows viewers to experience exciting content in advertisements but also makes audiences fond of this novel advertising model. Although this promotional model is acceptable to both advertisers and media, and advertising revenue can compensate for VR news production costs, The New York Times itself has substantial financial resources and significant influence. The success rate for other media attempting to follow this model is very low.

3.3 Difficult Topic Selection Relevant research indicates that reports with strong visual sense or visual impact are more suitable for VR technology. Therefore, for general situations, especially dynamic news and abstract economic reports, this technology is not suitable. Currently, selecting topics that can perfectly apply VR technology to news reporting is relatively difficult, with applicability limited only to entertainment, sports events, or news events that are difficult to replicate on-site.

3.4 Lack of Standardized Systems Currently, most VR news on domestic platforms such as People' s Daily, Sohu, and Sina consists primarily of 360-degree panoramic videos, while foreign outlets like The New York Times even use helicopters to shoot panoramas for VR news reporting. Viewers only need a smartphone or VR glasses to watch the videos. Since VR video prototypes do not require borders when shooting videos, there is a significant difference from traditional video shooting methods. Because the shooting angle is 360 degrees, which angle viewers choose to watch the video from becomes a mystery to the producers. Video script designers face increasing difficulties when designing narrative videos, and due to low technical content, promoters have given up on promotion.

4. Solutions

4.1 Introduce Advanced Technology Why is VR news development closely related to the high-end route? The main reason lies in its excessively high costs. So how can costs be reduced? To complete a comprehensive VR report, besides assigning interview teams to collect video materials in the early stage, drones and panoramic cameras are also needed for shooting. The expenses spent on post-production special effects and display effects are far higher than those for traditional news reporting. To improve VR news quality and production efficiency, it is necessary to introduce scientific technology that is more convenient to operate, more humanized, and has more diverse functions. As an important factor in the field of news product production and dissemination, the role played

by science and technology is almost perfect. Additionally, personnel engaged in the news industry also need to actively learn technologies related to VR technology and better apply them to news product production and dissemination.

4.2 Select Topics and Content Suitable for Industry Standards Regarding relevant standards established for the VR news industry, experts from the BBC, after accumulating much experience in VR news production and audience feedback after broadcast, have proposed the following suggestions. First, internal testing must be conducted. Many viewers may have never seen VR-related news, so testing is required before broadcast, and reflection should be made based on audience opinions and feedback. Of course, the internal test group should also be selected carefully, requiring people of different age groups. Second, risks should be monitored. Besides monitoring risks from moral and justice perspectives, health and safety factors also need to be analyzed and controlled. If journalists neglect viewers' health and safety, the bright prospects of VR news will be limited. In the future, besides accumulating certain experience, the VR news industry also needs to be cautious in topic selection to prevent VR news from being pushed to the forefront due to moral and ethical issues.

4.3 Attempt Cross-Boundary Integration At present, "cross-boundary" has become a popular element. Media dissemination also needs to attempt cross-boundary integration. On New Year' s Day 2017, national leaders sent New Year greetings to the people through People' s Daily' s "two micros and one end" platform (Weibo, WeChat, and news app), attracting many readers. Additionally, sharing is possible on various self-media platforms, making it visible everywhere on social websites such as WeChat and QQ. From initial print media to today' s internet media, although People' s Daily keeps pace with the times, such a dissemination miracle would be difficult to achieve without VR technology as support. Therefore, when VR technology integrates with news, various media carriers can also be used for cross-boundary integration.

4.4 Transform Product Production Concepts At present, VR is still in its early development stage. To transform the content and form of VR news development and improve the integration degree between VR and news, it is necessary to use VR technology' s immersive mode to transform VR news. When delivering sensory experiences in news content, news production methods need to be updated, starting from all aspects of news and establishing diversified VR technologies to allow VR news to develop rapidly. To better apply VR technology in VR news and improve the value of VR news, it is necessary to deeply understand the functions of VR technology and accurately achieve information conversion.

In summary, since VR technology has been applied to news production and dissemination, many journalists have been striving to better apply VR technology to news production and dissemination and to achieve maximum innovation in news reporting. To continuously update the forms of news reporting that

audiences can accept, audiences can enjoy the visual impact brought by virtual technology in VR news. By leveraging the role of VR technology in news production and dissemination, virtual reality technology can become mature, occupy a place in the development stage of numerous self-media platforms, become an important component of new-era media, and bring more new products and corresponding professionals to China' s technological development.

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Note: Figure translations are in progress. See original paper for figures.