

“New Infrastructure” Enhances the High-quality Development of Sports Competition Performance Industry

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ABSTRACT

High technology is an essential factor that can promote high-quality economic development. The in-depth development of the new infrastructure is expected to promote the subversive innovation and transformation of the sports competition performance industry. This study examines and analyzes three main points, namely, new infrastructure, new development, and new kinetic energy. In the context of the corona virus disease 2019 (COVID-19) pandemic, the sports competition performance industry is facing a double crisis of complete suspension and the need for self-innovation. This study proposes that the new infrastructure can help the sports competition performance industry by “cultivating opportunities and opening new games.” “Cultivating opportunities” refers to the application of science and technology in the field of new infrastructure construction in the supply side and demand side of the sports competition performance industry. Meanwhile, “opening new games” means improving the development of science and technology; increasing scientific research financing, combining the sports competition performance industry with the new infrastructure; promoting the development of the sports competition performance industry + and industrial chain; and enhancing the core technology and industrial services of the sports competition performance industry.

Keywords: New infrastructure, sports competition performance industry, high-quality, crisis

INTRODUCTION

In 2020, COVID-19 swept across the world, severely affecting every country. Under such circumstances, China’s national economy exceeded 100 trillion yuan, creating a new miracle. The Chinese government achieved epidemic prevention and control as well as socioeconomic development (“The main goal of stabilizing the recovery of the national economy in 2020 is better than expected”, 2020). Such achievements resulted from China’s practices, guided by new development concepts and high-quality development. As China’s economic transformation and upgrading progress steadily, emerging technologies are being used in various fields. Facing the severe challenges of COVID-19, new products, new business formats, and new models supported by emerging technologies played an essential role in preventing and controlling the pandemic and facilitating the resumption of work and production (Zhang et al., 2020). The new infrastructure is based on technological innovation and conducive to stimulating investment and upgrading consumption in the short term. In the medium and long term, the new infrastructure is conducive to the steady growth of the economy and can promote economic development. In addition, the new infrastructure can promote industrial

transformation and business model upgrading (Wei & Wen, 2020), gaining momentum for high-quality development. The sudden outbreak of Covid-19 adversely affected all aspects of life, including the sports industry (Zhang & Jiao, 2020). In the first quarter of 2020, China's sports industry basically shut down, and many domestic and international sports competitions and events were cancelled or postponed, thereby directly affecting the industry. Opportunities should be cultivated in times of crisis, and new games should be opened amidst change. How can the sports competition performance industry reduce the impact of the pandemic? How will the sports competition performance industry begin a new stage in the post-pandemic period? Promoting the maintenance of the high-quality development of the sports competition performance industry will become the focus. In 2018, the General Office of the State Council issued the "Guiding Opinions on Accelerating the Development of the Sports Competition Performance Industry," which predicted that the total scale of the sports competition performance industry will reach 2 trillion yuan by 2025, basically setting the overall goal of achieving rich products, reasonable structures, a solid foundation, and balanced development. At the same time, it emphasized that we must attach importance to and encourage the application of new broadcast technology, security monitoring technology, artificial intelligence, and other high technology supported by mobile Internet, big data, and cloud computing technology in the sports competition performance industry ("Guiding Opinions of the General Office of the State Council on Accelerating the Development of Sports Competition Performance Industry", 2018). The efficient development of the sports industry requires the driving force of industrial policies, market demand, corporate competition, and digital technology to reduce operating costs and deepen the division of labor and production (Ren & Huang, 2020). Big data are beneficial to the structural optimization of the supply side of the sports industry to stimulate transformation and upgrading, develop core technologies, and promote cross-industry integration (Dong et al., 2018). Digital technology can upgrade and transform the sports service industry from a digital perspective (Shen et al., 2020).

Meanwhile, digitalization plays an important role in enabling the sports service industry to generate new business formats, improve its industrial efficiency, optimize its allocation of factors, and strengthen market supervision. Zhu and Huang (2020) introduced the development status of smart stadiums from the perspective of 5G technology and analyzed the actual application status of 5G technology in the smart construction of stadiums. The transformation and upgrading of the smart construction of stadiums can be realized with the support of 5G technology. The application of 5G technology in the integrated development of the "sports + Internet" industry can develop related industries rapidly (Gao et al., 2020). Wang et al. (2021) discussed the digital application and development path of new technologies in sports and fitness consumption in the context of national new infrastructure and elaborated from the perspective of effective supply, consumption innovation, collaborative integration, and scientific decision making. Their research provides theoretical support for the digital transformation of fitness consumption and countermeasures and suggestions for the high-quality development of the sports industry. The application of blockchain technology in competitions and performances can enhance the independent innovation and application ability of blockchain technology and realize the high-quality development of the sports industry (Cui & Huang, 2020). Xiang (2019) analyzed the external macro environment to develop the sports competition performance industry against the background of "Internet +." The sports competition performance industry should seize the opportunity and advantages of the macro environment, accelerate integration with the Internet, tap the depths of integration, and expedite the transformation and upgrading of the industry.

To sum up, the new infrastructure can create considerable economic and social development opportunities. The new infrastructure is a new driving force for the high-quality

development of the national economy. The exploration of and research on the application of the various fields of the new infrastructure in sports are increasing. Sports scholars are also paying attention to the charm and value of the different areas of the new infrastructure. In the context of the rapid development of the new infrastructure, the sports competition performance industry should rely on the digitization, intelligence, network informatization, and scientific and technological improvement opportunities brought by the new infrastructure in the process of reform and development to help the high-quality development of the industry.

BACKGROUND ANALYSIS

NEW INFRASTRUCTURE

The new infrastructure was first proposed at the Central Economic Work Conference in December 2018, and its concept is constantly changing and developing. At present, the concept includes “seven fields theories,” “three aspects theories,” “new technology-driven theory,” and “new element theory” (Liu et al., 2020). The National Development and Reform Commission clearly stated that the new infrastructure is an infrastructure system guided by new development concepts, driven by technological innovation, and based on information networks to meet the needs of high-quality development and provide services such as digital transformation, intelligent upgrades, and integrated innovation. Moreover, the new infrastructure includes information infrastructure, fusion infrastructure, and innovation infrastructure (“The National Development and Reform Commission held a press conference in April to introduce the operation of the macroeconomy and respond to hot issues”, 2020). At the same time, with the technological revolution and industrial transformation, the connotation and extension of the new infrastructure are also dynamically changing. The new infrastructure can create development opportunities and motivate people from all walks of life. The field of sports is also exploring new developments in the new infrastructure domain. The General Office of the State Council and General Administration of Sports of the People’s Republic of China implemented various policies to promote the application of the new infrastructure in sports actively. The new infrastructure plays an irreplaceable role in developing and reforming the sports field. Therefore, the new infrastructure is an inevitable choice to boost the high-quality development of the sports competition performance industry.

NEW DEVELOPMENT

In the first half of 2020, the central government exerted considerable effort to accelerate the progress of the new infrastructure and positive advancements in many vital areas. The development of sports in the new infrastructure is also deepening. Relying on 5G, AI, big data, the Internet, blockchain, ultra-high-definition video, and other technologies, various sports and fitness applications (apps), cloud fitness clubs, sports community platforms, social platform sports anchors, and other new sports fitness models emerged as well as the online sports innovation of the 5G + 4k live broadcast mode and new 5G + cloud VR event viewing mode. According to relevant statistics, the number of active fitness app users was more than 9 million in 2019 and that of live sports app users was 193 million in 2020 (“Analysis of the development status of China's Internet + sports mass fitness service industry in 2020 The epidemic has caused the industry's popularity index to soar”, 2020). Relying on new infrastructure-based technological innovations, smart stadiums, smart sports clubs, smart sports equipment, smart fitness wearables, smart interactive large screens, smart outdoor fitness paths, smart physical measurements, and AI treadmills were developed. The rapid development of the new infrastructure also spawned subversive innovations in other industries. Similarly, various sports-related black technologies emerged to meet the unique needs of the sports domain. The

development momentum of scientific and technological innovation in the sports competition performance industry should not be underestimated. The promotion of the high-quality development of the sports competition performance industry through the new infrastructure is the development trend in the new era.

NEW KINETIC ENERGY

With the development of new information technology, the new infrastructure has become the new driving force to stimulate China's economic development by empowering different industries with technology (Zhai, 2019). In addition, the value attributes of emerging manufacturing and modern service industries driven by the new infrastructure are widely recognized. The sports competition performance industry involves a series of economic activities conducted by sports competition performance organizers to meet the sports-competition-viewing needs of consumers and provide various sports competition performance products to the market (Xiang, 2019). These economic activities are based on the pursuit of audience viewing and the value and continuous improvement of industrial service capabilities to realize economic interests. Technology-assisted sports is a significant development plan in the new era. The new infrastructure brought new momentum to the development of the sports competition performance industry. Furthermore, the application of high and new technology in the sports competition performance industry effectively improved its core technology. The application of big data, mobile Internet, cloud computing technology, and other applications in events registration, events broadcasting, media reporting, communication and interaction, and events participation effectively improved the comprehensive service level of the sports competition performance industry. The new infrastructure can serve as a solid foundation for the sports competition performance industry by providing an infrastructure system. Moreover, the new infrastructure field is embedded in the subversive innovative development of the supply side and consumption demand side of the sports competition performance industry, thereby creating a new engine for its high-quality development. The COVID-19 pandemic was brought under control in China. With the resumption of work and production, the sports competition performance industry has begun to recover. Although the crisis persists, under the overall economic environment of Chinese society, the sports competition performance industry seized the opportunity of the recovery of the economic climate and innovation and achieved positive development growth.

HIGH-QUALITY DEVELOPMENT OF SPORTS COMPETITION PERFORMANCE INDUSTRY

CULTIVATING OPPORTUNITIES

After the COVID-19 outbreak, exercise to fight the pandemic became a vital slogan. As a result, the public actively participated in physical exercise, and their awareness of physical fitness, sports consumption demand, and public sports facilities demand increased considerably. The pandemic transformed online sports and home fitness into the latest craze. As of June 2020, the number of online live broadcast app users in China reached 562 million, 193 million of whom were sports live broadcast app users, accounting for 20.6% of the total number of netizens in the country ("The 46th "Statistical Report on Internet Development in China", 2020). The massive scale of sports app users makes the live broadcast of sports events valuable and influential, bringing new hope to and creating new opportunities for the sports competition performance industry during the pandemic. The clarity, smoothness, and delay rate of live sports images are the leading reference indicators affecting user selection and stimulating user consumption. 5G, the Internet, big data, the Internet of things, artificial intelligence, and other

new infrastructure technologies improved the possibility for the high-quality and innovative development of live sports events. The 5G + 8K + AI + VR live broadcast mode of the 2021 Spring Festival Gala gave audiences a clear, smooth, and high-tech visual feast and immersive experience. The live broadcast of large-scale sports events can learn from the new model of the Spring Festival Gala live broadcast to seize the opportunity to develop new infrastructure technology and improve the core technology and service quality of the sports competition performance industry.

OPENING NEW GAMES

When the sports competition performance industry begins its new stage, the use of innovation to drive the “first engine” will be necessary. In the face of considerable changes unseen in a century, changing and becoming new are likewise necessary. Technological innovation financing, combining the sports competition performance industry with the new infrastructure field, should be increased; the integrated development of the new sports competition performance industry + and industrial chain should be promoted; and the core technology and industrial services of the sports competition performance industry should be enhanced. Therefore, the main aspects related to beginning the new stage of the sports competition performance industry should be examined for its high-quality development.

Sports news, games, and e-sports streaming platforms are the key technological innovation areas of the sports competition performance industry. Therefore, increasing financing for science and technology innovation, combining the sports competition performance industry with the new infrastructure field, is the basis and prerequisite for realizing the technological development, informatization, and digitalization of the new infrastructure in the sports competition performance industry.

In 2018, the State Council of China promulgated the “Guiding Opinions,” pointing out its adherence to the sports competition performance industry’s integrated development. As a result, a new sports competition performance industry + integration model was gradually formed. The new infrastructure penetrates various intersecting and integrated industrial fields. The integrated development of the new infrastructure with the sports competition performance industry will provide scientific and technological support, expand its new development model, and promote the new upgrade of the sports competition performance industry.

Research on the core technology of the sports competition performance industry should be increased. Through 5G, big data, the Internet, blockchain, VR, and other technologies, the core technology of sports event broadcasting can be improved to provide audiences with an immersive viewing experience. Each component’s core technology input and support should be strengthened, an industrial chain suitable to the sports competition performance industry should be created, and the comprehensive level of industrial services should be promoted. Furthermore, the subversive innovation of the sports competition performance industry should be realized.

CONCLUSION

High-quality development was the social and economic development theme during the “14th Five-Year Plan” period. With the changing times, the sports competition performance industry is at a crucial period of self-reform. High technology is the key to boost high-quality development, and technology can help development become mainstream. The new infrastructure is an essential product of the Fourth Industrial Revolution, providing technical support for technological innovation such as new-generation information technology, digital technology, and intelligent technology to various industries. The sports competition

performance industry achieved new development in integrating the new infrastructure. The new infrastructure field can provide a momentum to the sports competition performance industry to respond to the impact of the pandemic and achieve self-development and reform. Technological innovation in the new infrastructure created new opportunities for the sports competition performance industry. The sports competition performance industry can explore the self-structure upgrade of the supply chain and demand chain under the new infrastructure and build a development path to integrate the sports competition performance industry + model and upper and lower chains. The core technology of the sports competition performance industry should be examined, developed, and strengthened, and industrial services should be improved. The innovation and development of the sports competition performance industry, combined with the new infrastructure field, are currently in the initial exploration stage, and enormous space for growth in the future exists. This study examines the high-quality development of the sports competition performance industry with the help of new infrastructure at the macro level. At the micro level, the new infrastructure field has considerable research value and space for the embedded development of the sports competition performance industry and application of scientific and technological improvements.

FUNDING

Funded by Sichuan Provincial Key Research Base of Philosophy and Social Sciences — Tianfu International Sports Events Research Center (Project No. YJY2021Z01).

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