

Research on the Development of Sports Industry under the Background of New Crown Epidemic Based on Big Data Analysis

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Abstract: The sudden COVID-19 outbreak in 2019 has had a huge impact on all walks of life around the world. Schools, shopping malls, companies and sporting events have closed or gone bankrupt. This study will focus on the impact of COVID-19 on the future development of the sports event industry. In this regard, we divided the overall impact into three perspectives to analyze: 1. We first analyzed the data of many major international sports events affected by the COVID-19 epidemic. We compared the financial data of event organizers before and after the pandemic and analyzed their revenue changes. 2. At the same time, we also studied the impact on sponsors of sports events before and after the pandemic. We used data from the Olympic Games over the years and sports events like the NBA to do the analysis. 3. Finally, we analyzed typical sports industry companies to study their financial statements and revenue changes before and after the pandemic, such as NIKE. In addition, we also conducted research on the surrounding industries of sports events, such as supplies for sports events, players' jerseys, energy drinks and so on. Broadcasters are also the subject of our analysis. We analyze the target events they broadcast and the ratings of broadcast events. Our findings suggest that the impact of COVID-19 on sporting events has been mixed: the good thing is that it has boosted new events, such as esports. Esports is an all-in-one format, and even offline events are staged on an electronic screen. So esports has emerged as one of the new mainstream events when so many major events have been canceled; The bad news is mainly the impact on the large offline industry, many events are shelved, and sponsors' ads are nowhere to be shown and shown, and sponsors' money is lost. But the pandemic has not caused major sponsors to pull back, just a small number of companies and investors. The significance of this study is to analyze the impact of the pandemic on the future development of sports events, so as to help people identify the current situation and future exit of major sports events, help investors understand the emerging and potential sports events, and help people understand how to mitigate the impact of the pandemic on sports events.

Keywords: COVID-19, data analysis, sporting events

1. Introduction

COVID-19 epidemic spread to the whole world in months, since epidemic force people to minimize offline interaction to avoid infection, seriously destruct or slow down different kinds of industries, and cause international economic recession. In these industries, social-sensitive industries such as sports industry and travel industry have been seriously harmed by COVID-19 epidemic. For sports industry, due to the delay or cancel of many matches, the people who depend on sports industry like sponsors, rebroadcasters and athletes are in dilemma. This research will analyze the current situation of sports industry, analyze the economic development of sports match-related companies to help organizers or government to adjust solutions for sports industry under the COVID-19 epidemic.

He Jia and Zhou Xiangzhen used big data analysis to analyze the impact of the new crown epidemic on Guangdong's sports economy and came to the conclusion that "home sports" should be developed [1]. Huang Haiyan and Liu Weiyu gave the current dilemma of sports events in response to the impact of the new crown epidemic on world sports events, and then gave solutions such as "event self-rescue" and "event optimization" [2]. Tan Shiyi analyzed the plight of sports-related industries and suggested relevant measures for resumption of work according to the impact of the new crown epidemic on sports events [3]. Cheng Xinquan and Wang Yunwu used factor argument analysis to analyze the impact of the new crown epidemic on sports tourists' intentional satisfaction. Imagery does not have a positive effect [4]. Paloma Escamilla-Fajardo, Juan M. Núñez-Pomar and others used the method of Paired sample-t tests on linear regression line for the impact of the new crown epidemic on the service quality of sports clubs and obtained that "the relationship between sports clubs and service quality in both stages is significantly different." Significantly positive correlation, but stronger before COVID-19" [5]. Ashley Ying-Ying Wong, Samuel Ka-Kin Ling and others have used graph analysis and experimental methods to analyze the impact of the new crown epidemic on football sports players and concluded that regardless of whether there are spectators, football games will make the epidemic serious, and wearing masks makes athletes Physical discomfort conclusion [6]. Giuseppe Musumeci, in view of the changes in people's mentality caused by the epidemic, came to the conclusion that the epidemic has seriously affected people's minds through social research, and measures such as online sports should be carried out [7]. Jonathan Grix, Paul Michael Brannagan, Holly Grimes and Ross Neville analyse the impact of COVID-19 on the field of sport: discussing the nature of "spectator less" sport and the impact of COVID-19 on the provision of physical activity in less affluent areas. Conclusions were drawn about the likely long-term impact of the coronavirus pandemic on sports [8]. ISE is approached from a resilience perspective by Lee Miles and Richard Shipway, who focus on eight key thematic resilience areas and reveal how disaster management and resilience research can better inform sport and event research by proposing an interdisciplinary research agenda for sport and event management research [9]. Research by Sarah Zipp and Young-hoon Kim shows that COVID-19 has both positive and negative impacts on the sports industry. The good part is the rise of esports, because instead of requiring spectators to be present online, players can compete at home. But women's and disabled sports, which are not mainstream sports to begin with, have been hit the hardest [10]. Liu Zhu and Lu Jinyu found that esports events have developed positively during the pandemic because they do not require spectators and are held online. So they think the running of sports events is getting better [11]. Huang Haiyan and Liu Weiyu found that from a macro perspective, residents' demand for sports consumption and sports events drive the long-term improvement of surrounding industries. Therefore, the ongoing trend in sporting events will not be fundamentally altered by the pandemic [12]. Zhang Jinpeng and Ren Feng found that under the epidemic situation, professional sports managers in various countries have successively resumed the

organization and arrangement of professional sports events through empty fields and stadium closures, reduced the transfer and salary costs of athletes, and re-signed media contracts to minimize the economic losses caused by the epidemic. At the same time, it solves the legal problems caused by a series of events, such as the suspension of athletes' contracts and the suspension of broadcast contracts [13].

Based on the above 13 literatures, there is insufficient research on the impact of the new crown epidemic on typical enterprises, the changes in the sports industry before and after the epidemic, and the impact on investors and broadcasters during the epidemic. Therefore, this paper research direction will be aimed at international large-scale sports events, event broadcasters, event investors, sports industry (surrounding industries other than events, such as: clothes, shoes and sports drinks, etc.) and operating companies (sports lottery) affected by the impact of the new crown epidemic and changes before and after the epidemic.

2. Data Analyzation of the Influence of COVID-19 Epidemic on Popular International Sports Competitions

2.1. Change of Sports Industry Caused by Epidemic

Population aggregation is non-avoidable for big sports meets, so many sports meets are forced to delay or cancel to prevent airborne transmission of virus. Under this serious condition, many sports meet have taken an enormous amount of lost. For example, Tokyo Olympics. Olympics can bring strong benefits for local people and government, it attracts international attention so local companies can spread their characteristics, which are beneficial for future business. Also, Olympics attract millions of people travelling to the host, this not only provide a part of revenue, but also strongly promote local travel industry, goods industry and also build better international image for the country.

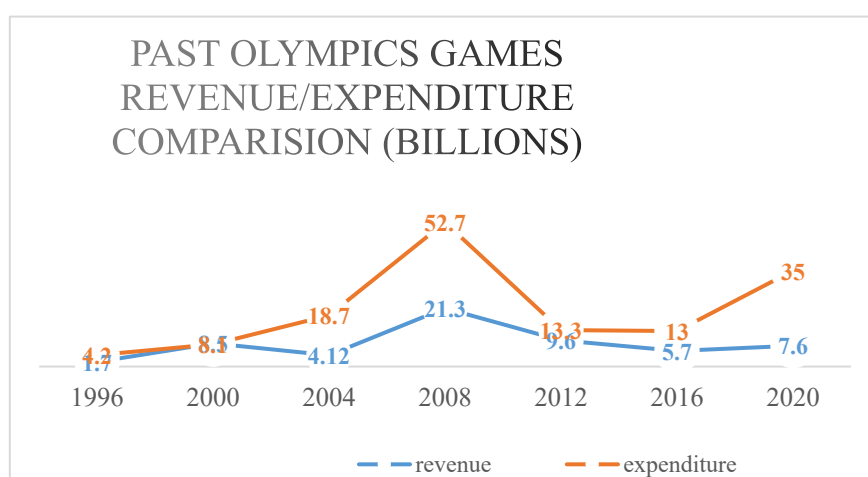


Figure1: Past Olympics games revenue/expenditure comparison (billions) (the data comes from online data).

The graph shows the comparison between revenue and expenditure of Olympics from 1996 to 2020. The graph shows that in 2020 Olympics spent a lot in investing the Olympics, but it eventually earn relatively very low revenue. Japan spent more than 30 billion dollars investing Olympics, and Japan earn about 7.6 billion dollars. This result mainly caused by epidemic, the meets delayed for a whole year, which means all equipment and sites were losing money without earning for a whole year. It caused Japan to lost about 2.8billion dollars, each sites for competition

needs 22million dollars for reparation [14]. The meets didn't promote travel industry neither, in 2021 there were only 245 thousands people went to Japan, which is about 1% of population compare with 2020 [15]. The fail of this management cause 68% of Japanese people to be unsatisfied about the government [16].

However, epidemic also promote online industry, in 2021, Olympics earned 3.1 billion dollars on TV rights, which is 73% of the whole revenue of Olympics organization in 2021 [17].

In conclusion, epidemic cause Japan to lost billions of dollars, and Olympics didn't promote Japanese economy a lot, but it promote online industry, it's not very beneficial for local people, but it provide a new way of sports meeting.

Besides the big sports meets, population's sports schedules were influenced by the epidemic. In 2020, almost every small competitions were canceled or be restricted, and many gyms and swimming pools have to be closed. Compare with 2019, the whole sports industry of China decreased about 7.2%, the investment for sports sites and site-management has decreased about 20.2%, advertisement related with sports has decreased about 16.9%.

2.2. The Correlation Between Sports Meets and Sponsors, TV Broadcasts

Sponsors is one of the major income sources for various competition, for example, beer company Budweiser spends about 25 million dollars each year to sponsor the world cup, the investment by sponsors of Olympics in 2021 exceed 3 billion dollars. Sponsorship can be very profitable for companies, it is one of the best ways for advertisement, and it's also a symbol of ability of the company, which can promote future cooperation with other companies. Especially for the perfect competition market, like beer market, or sports market, show company's advertisement on screen or on athletes' clothes of big competition like world cup can strongly increases sale and brand's image. However, because of the epidemic, the investment becomes risky for sponsors, for the Olympics of 2021, more than 10 sponsors repealed their sponsorships, include Toyota, Canon and Tokyo Marine, which are all important sponsors [18]. Because of the epidemic, sponsors increase their spending to ensure the Olympics can held without any problem, but Olympics in 2021 is too risky, and companies is doubt about whether advertise on Olympics can be helpful under the condition of epidemic, since the public opinion of this sports meet is not friendly, so some sponsors repealed the sponsorship.

However, the broadcasting right of sports competition becomes very profitable.

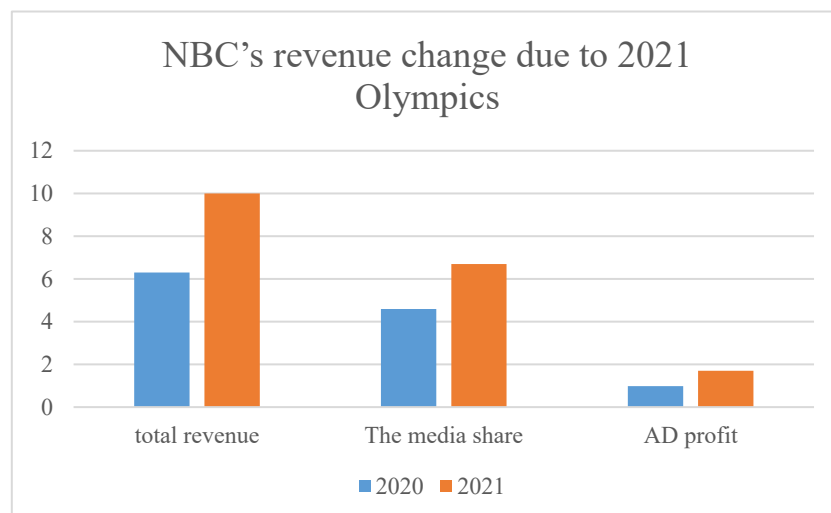


Figure 2: NBC's revenue change due to 2021 Olympics.

The graph is the revenue change of NBC, which is the company that own the America's broadcasting right of Olympics. The graphs shows that due to Olympics, NBC earn a lot more by Olympics. The IOC also hailed Tokyo 2020 as 'the most digital Games ever', stating that a total of 3.05 billion unique viewers tuned in to coverage across linear TV and digital platforms. Official coverage on Olympic broadcast partners' digital platforms alone generated 28 billion video views in total. The broadcasting right made 3.1 billion dollars of revenue for Olympics [19]. Under the condition of epidemic, many people choose to watch matches online, which makes broadcasting right very profitable. NBCUniversal, a casting company of Olympics, increase profit from broadcasting for 36.2%, the whole company increase profit about 58% compare with 2020 [20].

3. Analysis of Sports Event Sponsors Before and after the Epidemic

3.1. Analysis of Types of Sports Event Sponsors

There are three main types of sponsors for company. Companies can invest money, goods and devices or media as the sponsorship [21]. For most companies, they directly invest money, this is the most popular way of sponsorships. This is also one main income for sports competition. In 2016, world cup gained 483million euro, which is 25% of the whole income [22]. In Tokyo Olympics, Olympics gained 300 million dollars from sponsors. Give goods and equipment is the second way for sponsors, it is also the way which have best efficiency to expand fame for companies. This investment is especially important for sports brands, like Nike, Adidas, Under Armour and more. On big sports competition, the quality of equipment is very important, it directly influence the performance of athletes. When athletes use companies' equipment and won the competition, the payback for companies will be huge, it also promotes fame of companies a lot.

In world cups, Nike, Adidas and Puma is three main sponsors on jerseys, Adidas gives 350million euro on only one country's sponsorships: Italy [23]. If the team won the competition, the company can also earn enormous fame and generates from the competition. On another hand, this type of investment is very risky, if the equipment is not good enough or athletes fail, the investment will be meaningless or even be counterproductive. The last type of sponsorships are influenced negatively by epidemic, but the third type, media right, is very profitable under the epidemic, people watch almost every competition online, which makes tv right very profitable. Here is a graph illustrating some examples of sponsors.

Table 1: Examples of types of sponsorship.

Types of sponsor ships	Examples of types of sponsorship
Invest money	Coca-Cola, Airbnb, Alibaba, Atos, Dow...
Provide equipment	Nike, Adidas, Puma
media right	NBC, Tencent

3.2. The Correlation Between the Audience and Sponsors of Sports Events

For normal audience, few people will care about which companies invest the match, for audience, the sponsors who gives equipment or advertisement which related to the match is the only way they contact with sponsors. For example, sports' equipment companies will be very interested in sponsorship, because when people see athletes wearing clothes or shoes with their brand, people will appreciate the brand's goods more. Also, advertisement on competition is the rights for sponsors, which are very important. For example, Budweiser is the sponsor of world cup, and many people watch world cup in bar or at home, so beer is very important. People will be more willing to buy Budweiser because advertisement on the match clearly provide a choice for viewer. The

advertisement could also promote daily selling. Many food companies have sponsorship with competition, they will print “xx match’s sponsor” on their goods. This marketing method connect goods and the match, people will be willing to buy it after see the advertisement. The efficiency of sponsorship can be also be influenced by the characteristics of the audience. Most advertisement of sports equipment’s target are young people, they are more willing to buy popular goods, so advertisement is useful due to celebrity effect. Other kinds of advertisement will be focus on different kinds of people, since big competition will attract a enormous amount of population, which include different targets for companies, like car buyers, phone users, sports men.

4. For Typical Enterprises Affected by the Impact of the Pandemic

By analyzing the differences of different types of sports-related enterprises affected by the epidemic, typical companies in the apparel, sports lottery, sports goods and sports drinks industries were selected, and their revenue statements were extracted to quantitatively analyze the impact of the epidemic.

4.1. Impact of COVID-19 on Typical Sports Enterprises (NIKE)

The impact of the pandemic on NIKE can be roughly divided into three perspectives: 1. Revenue of offline physical stores 2. Publicity effect of sponsor advertising 3. Online revenue.

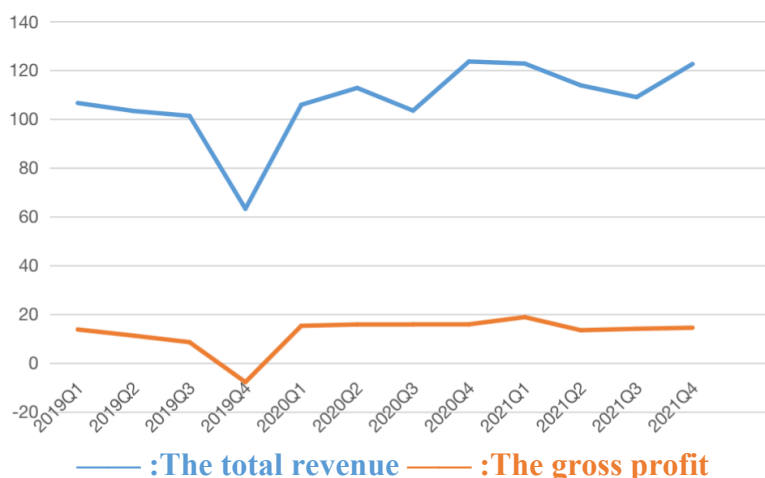


Figure 3: NIKE's total revenue and gross profit change before and after the pandemic (unit: 100 million US dollars).

1. Revenue from brick-and-mortar stores This sector has been the hardest hit by the COVID-19 pandemic, because brick-and-mortar stores have been forced to close as major malls have closed. Outside of China, where controls have been less strict, most shops have remained open. However, it is worth noting that China is NIKE's biggest market, and the management in China is very strict, so a lot of products should be released on time, but they are removed and shelved. NIKE products are mainly divided into limited edition and non-limited edition (take sneakers as an example, and sneakers are the most mainstream NIKE products). The non-limited edition will not be affected, because although offline physical stores are closed, they can still be sold online. But the limited category will be very affected, most of the lottery can only be offline, especially the super limited category is the most affected by the pandemic lockdown. NIKE quickly responded to this situation by launching an online lottery, but only for the original price of the overpriced shoes in most of the market, and the super limited or limited number of shoes will still have to wait until the pandemic improved. For NIKE goods appear fired or bid up the price reason is because the outbreak blockade,

resulted in China no shoe money sold abroad region, so for selling in mainland China people want to buy new shoes will pay far more than its own value price to buy, not only because it is limited, more because had a lot of people want to buy, But the number of units sold fell, so prices soared, deterring a large proportion of consumers. In the end, there will only be one situation, that is, the buyer can't afford to buy, the seller wants to sell but no one can buy, and then the price will be reduced and the loss of money, which is very embarrassing.

2. The publicity effect of NIKE's advertising as a sponsor mainly has four functions: 1. Advertising is the engine that drives a brand's development. 2. If NIKE doesn't take the AD space, it will be taken by someone else, and if NIKE doesn't advertise, someone else will. If NIKE doesn't advertise but its competitors do, then NIKE has one less opportunity to advertise than its competitors. So, NIKE will not give up any opportunity, what's more, as the world's No. 1 sports brand, its advertising places and sponsored events or companies are highly anticipated, so once the opportunity is taken away by rivals, that NIKE will be faced with a large loss. 3. NIKE advertising is also a way to reflect the strength of the brand, for example: NIKE in the previous Olympic Games sponsorship and broadcast advertising are in the audience to convey the strength of NIKE in the world stage belongs to the forefront of the brand, and the Olympic Games is sponsored by us, our strength. 4. New product promotion.

However, the arrival of the COVID-19 pandemic has led to delays and delays in the launch of the new product, as well as the promotion of its advertising. At the same time, the postponement of the Tokyo Games also caused a significant loss in NIKE's expected return on investment, because its expected return on investment was delayed by the Olympic Games and exceeded the estimated time. However, just as NIKE is the world's first sports brand, its popularity has become a household name, the whole world is well known, so the delay or even cancellation of part of the advertising for NIKE's popularity and influence caused by the loss is not big.

3. NIKE's online revenue has increased significantly in the face of the pandemic, and the online trend of sports brands continues. A brilliant new quarterly financial report from NIKE shows its opportunity to seize digital business. In the three months ended August 31, Nike reported revenue of \$10.6 billion and net income of \$1.5 billion, up 11% year on year, with an 82% increase in online sales, nearly offsetting a decline in revenue from its wholesale and store-owned businesses. The reason for the impressive results is the overall acceleration of Nike's online business. The announcement comes just two months after the company announced a series of leadership changes and layoffs to sharpen its focus on digital businesses, including e-commerce. Although offline stores have been restored during the pandemic, Nike is unlikely to stop focusing on online business. In the new quarterly results, Nike further reduced its spending on sports marketing to support its digital strategy. Similarly, its operating and administrative expenses fell 1% to \$2.3 billion.

Back in June, when Nike reported its Q4 fiscal 2020 results, CEO John Donahoe highlighted e-commerce as a major sales channel for its brands, accounting for one-third of the company's revenue, while online sales grew by double digits in every region of the world. At the same time, in view of the online trend, Nike made a series of countermeasures. A good way to increase your audience is by catering to your home sport needs. We've seen Nike intensively roll out online courses during the pandemic. In March, for example, officials made NTC's premium subscription classes, which cover training, nutrition, recovery, meditation, and more, free. Fitness apps such as Nike Run Club attract and retain users. John Donahoe noted that the Nike Run Club averaged 1 million downloads per month for four consecutive months.

In addition, the construction of online DTC platform is not limited to "online buying and offline picking up", but more to acquire users' consumption habits and cultivate consumption demands. For example, in November last year, the Chinese version of Nike APP was launched. In addition to buying Nike products, the APP pushed sports guidance, equipment suggestions and other content

according to users' interests, and booked offline activities and sports courses organized by Nike. Back now, there's still plenty of room for Nike to explore online [24].

4.2. Impact of COVID-19 on Tournament Operator

The total revenue and gross profit of the Chinese industry before and after the epidemic

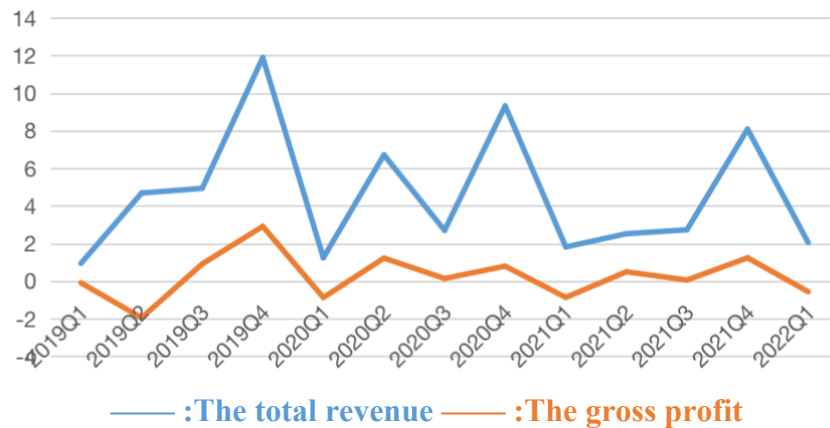


Figure 4: The total revenue and gross profit of the Chinese industry before and after the epidemic (unit: 100 million yuan).

For the Chinese sports industry and the sports lottery, the Chinese sports industry was the most affected by the COVID-19 pandemic, which saw its profits shrink by nearly 60% in 2020. The impact of the sports lottery is mainly due to the lockdown of the epidemic control and the delay and cancellation of the games. Most communities are under control, and citizens can't even go out, let alone buy lottery tickets. At the same time, the cancellation of the game directly let fans have no ball to bet, so the lottery industry is also a serious loss. On top of that, the pandemic has reduced demand for entertainment and, in many places, even food.

4.3. Impact of COVID-19 on the Sports Drink Industry

The total revenue and gross profit of the PepsiCo Inc before and after the epidemic

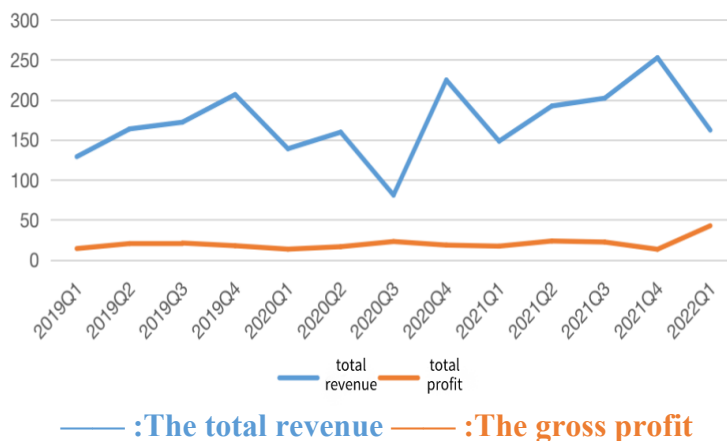


Figure 5: The total revenue and gross profit of the PepsiCo Inc before and after the epidemic (unit: 100 million dollars).

As a famous beverage supplier in the world, Pepsi was not affected by the epidemic. It involves not only cola drinks, but also mineral water and sports drinks. Either way, these products are essential to people's lives. In this case, the suspension and postponement of events caused a drop in sales of sports drinks, but other products did not suffer. So, overall, the impact of COVID-19 on Pepsi isn't that big.

The COVID-19 pandemic in 2020 made China's sports drink market worse. The outbreak of sports drinks industry will involve the influence of each big industry chain link and all the principals: enterprise management efficiency greatly reduced, a serious setback in their normal work, workshop production scheduling serious disorder, expansion of outlets was forced to postpone, marketing was forced to slow down, branding were forced to adjust, the decline of the market sales, enterprise and worker benefits are damaged. The specific degree of shock to sports drink depends on the prevention and control effect of novel coronavirus, so it is inevitable to cause severe shock in the first quarter and other short periods. The overall situation of sports drinks in China in 2020 depends on the novel coronavirus prevention and control efficiency. For the international market, Red Bull can be said to have not received too much impact: Reignwood Fast Moving Consumer Goods Group (hereinafter referred to as Reignwood Fast Moving Consumer Goods) mid-year results are one-way media, consumers and the public. In the first half of 2020, the sales of the five brands operated by Reignwood FMCG reached 14.326 billion yuan, achieving about 58% of the annual task set by the group at the beginning of the year. The total sales volume of the energy beverage segment is 14.109 billion yuan, among which the sales volume of Red Bull vitamin Energy drink is 13.393 billion yuan, the sales volume of Horse Energy vitamin drink is 716 million yuan, and the sales volume of three new products, Guobeshuang, Viatacco and Fusi Water, is about 220 million yuan. Compared with the same period last year, Reignwood FMCG sales fell by about 4.7 percent and Red Bull by about 3.6 percent, or about 500 million yuan. The person in charge of Reignwood FMCG said that a major epidemic, like a battlefield, tests the viability and resilience of every enterprise. Seriously affected by COVID-19 in the first quarter, the overall sales of the beverage industry fell by about 12%, and Reignwood FMCG was also greatly affected [25].

4.4. Impact of the Global COVID-19 Pandemic on Live Broadcast of Sports Events

Global travel due to the coronavirus pandemic that began in March 2020 blocked off the entire live sports market, and while some sports events have since been revived in isolation and fans have been able to watch them live on television, live sports are no longer what they were before the outbreak.

Sports leagues have taken measures to ensure their survival, such as shortening seasons, limiting the number of fans and leaving games empty, but these measures have had a significant impact on the production process and revenue streams of the television industry. Despite the negative external environment, people are still hungry for live entertainment and sports content in the face of the pandemic, whether through streaming services or traditional television broadcasts. Due to the COVID-19 pandemic, most sports events are not allowed to watch live matches, and the broadcast of sports events is the last guarantee for their survival. Since the outbreak of the pandemic, the number of people watching sports online has increased rapidly, reflecting the real demand from sports fans around the world.

In the post-pandemic era, this trend will accelerate as the number of sports streamed online grows. At the same time, live sports television has attracted a large sports audience, with 50 percent of sports fans subscribing to and watching live sports events via satellite or pay TV, according to Gallup. As demand for sports video content rises across the board from broadcasters, pay-TV operators and content owners, the coronavirus pandemic poses a major challenge for television - how to deliver sports content in the most reliable and cost-effective way.

At present, the production and transmission and delivery of live sports video are at a crossroads in the development of the industry. The COVID-19 pandemic has seriously affected the overall revenue and industry development of sports television broadcasting.

According to the sports events in Europe and North America in the past two years, the impact of COVID-19 on the development trend of sports broadcast is mainly reflected in the following five aspects: First, remote production will become the new standard for broadcasting sports events

The coronavirus pandemic has disrupted international and domestic travel for many industries, including those in the television business. As sporting events continue to restart in 2021, the number of people actually going to stadiums for sports coverage will have to decrease.

Broadcasters have had to put fewer staff on the ground, rather than sending a large number of people to cover the game as they did before the pandemic. On the other hand, the COVID-19 outbreak has also accelerated the adoption of cloud broadcasting, with most of the live production of sports events in 2021 using cloud computing solutions. Broadcasters broadcast the entire event using a remote studio cloud computing solution that simplifies all aspects of video production, including broadcasting, coding and delivery. Most importantly, the cloud broadcasting scheme also reduces the number of broadcast equipment required based on the location of the previous site, greatly reducing the cost of live production of sports events. Data from the International Federation of Broadcasters (IABM) found that the adoption of cloud technology by broadcasters and media organizations has accelerated significantly since the pandemic, with 45 per cent of respondents already deploying some kind of cloud technology and 40 per cent planning to do so. Given the current situation of the coronavirus pandemic, the trend of cloud broadcast applications will continue to increase, and the Tokyo Olympics will be the first major international event to use cloud technology on a large scale. Due to the social distancing rules of the Tokyo Olympic Games, it will be impossible for rights-holders to deploy a full production team on site as before, and rights-holders will manage most of the event broadcasts remotely through the cloud. The Tokyo Olympics will set a basic standard for the future of remote television production (REMI).

Second, live sports will become increasingly personal.

With the widespread availability of COVID-19 vaccines, 2022 will witness the rebirth of sports events and further push for a variety of TV broadcast solutions to better engage sports fans and provide products that meet the personalized needs of each type of sports fan.

Broadcasters and content service providers will pay more and more attention to the prominent position of sports fans and think about the strategy of live sports production around the different needs of sports fans. One way broadcasters and content service providers can personalise live sports is by using big data to provide complementary content. Take the IndyCar Sports League, for example. Many sports leagues are developing more advanced mobile applications on mobile phones.

These apps allow viewers to see information about drivers, teams, social media, video podcasts and even track weather forecasts, making it easy for viewers to learn all about the teams and drivers they follow. Personalized ads in streaming media also picked up steam during live sports in 2021. Content providers can insert personalized ads into the video stream or use them as superimposed subtitle information to facilitate AD marketing of the video stream.

In fact, sports fans prefer personalized content and ads. According to a recent report from Verizon Media, 2020 was the strongest year for streaming, with 86% of sports fans wanting streaming services to offer a different advertising experience and 29% wanting more personalized ads and services.

Third, hybrid delivery will be key to live sporting events.

It's very difficult for broadcasters and content service providers to gain audience loyalty these days because viewers have so many different ways to watch, watch content, and watch platforms.

Audience Fragmentation is a real challenge in sports broadcasting industry. Hybrid sports broadcasting mode is a feasible solution.

Hybrid Delivery refers to the use of satellite, fiber and IP transmission to ensure that the content is available on all the receiving devices. Hybrid Delivery makes the content distribution method no longer discriminate between audience types. Content service providers can switch between streaming (OTT) and traditional broadcast delivery methods to optimize distribution costs and ensure a seamless viewing experience for sports fans. In 2021, there will be a steady rise in the delivery of new sports events, especially 5G broadcast, which is widely used to ensure the transmission of live broadcast signals and hybrid delivery.

Fourth, 4K ultra HD will gain more traction.

There is still very little content available in 4K, and the footage from live cameras is often blown up, which is no longer a true 4K signal. In 2021, several major sports events will be produced using the 4K standard, and these events will be groundbreaking in exploring the need for 4K ultra HD sports experiences. To date, the market for 4K video has not matured globally for a variety of reasons, one of which is the low rate of consumer adoption of the technology.

According to Omdia, 52% of US households and 38% of Western European households have 4K TVs, and it will be two years before the proportion of Western European households with 4K TV reaches 50%. With the continuous promotion of 4K ultra HD applications, broadcasters should make technical layout and strategic preparations for future industry changes in advance.

Fifth, the rise of e-sports events.

Esports is an entirely online game, and even in offline venues, spectators look at the big screens of players' computers or mobile phones. This kind of online broadcast technology has been very developed, and the major game host platform is actually the same as the live broadcast of e-sports events, but the offline e-sports games will have more atmosphere than the online games, and the offline ticket fees and the sales of the surrounding souvenir flat are also a very considerable income. Among them, take King of Glory KPL matches as an example, players and teams are directly in the club base or directly through the online conference way, their game interface to the official website for live broadcast.

The coronavirus lockdown allowed people to watch factual matches online on their mobile phones without leaving their homes. It is worth noting that when people are isolated at home, in order to kill time, people's play of games shows an increasing trend. At the same time, more and more people are online, and people gradually deepen their understanding of games, so the popularity of games naturally increases, which also leads to the increase of attention to e-sports events.

The impact of the coronavirus pandemic on the sports industry as a whole has been mixed: the good news is that the pandemic has boosted the growth of online sports events and online stores. The downside is the hit to the offline sports industry, which includes the impact of physical store revenue, sports lotteries and sports drinks.

5. Conclusion

The impact of the coronavirus pandemic on the sports industry as a whole has been mixed: The good news is that the pandemic has boosted online sporting events and online stores. E-sports events have attracted more attention, while online stores have gradually become the mainstream market; The downside is the hit to the offline sports industry, including the impact of brick-and-mortar store revenue, sports lotteries and sports drinks. Many fringe events have also been affected, including disabled and women's events, which have not received much attention, and now the pandemic is making matters worse.

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