

An Investigation on the Impact of COVID-19 on China's E-Commerce Industry

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Abstract:

E-commerce is very important in new era. To find out the inference of the COVID-19 on the e-commerce, investigating its whole situation is very necessary. The COVID-19 outbreak at the end of 2019 has had a major impact on the Economy of China and the world as well as the service industry and manufacturing industry in China. The epidemic has affected some industries, but at the same time, it has brought major development opportunities to new industries, new forms of business and new models such as e-commerce. In order to effectively solve the practical difficulties of the industry, the methods such as questionnaire survey, data collection and literature search can effectively find the actual impact on China's e-commerce industry, so as to provide intellectual support for the government's decision-making. The ultimate goal is to promote the better and faster development of e-commerce industry.

Keywords: COVID-19, E-commerce industry, Challenges, Opportunities, The overall impact.

I. INTRODUCTION

Since the middle of December 2019, the number of novel Coronavirus infected pneumonia cases has been on the rise, and the epidemic has rapidly spread across the country. By February 24, 2020, there were 77,262 confirmed cases and 2,595 deaths in China. Covid-19 has become another major epidemic since 2003 in China. The sudden outbreak of covid-19 has changed the trajectory of short-term economic growth. It is expected that the short-term impact of this epidemic on the economy may be greater than that of SARS.

Since the outbreak of COVID-19, the Chinese leader has pointed out that "the epidemic has had an impact on macroeconomic operations and will continue to have an impact on economic operations"[1]. On 23 February 2020, he pointed out in his speech at the Meeting on the coordinated promotion of COVID-19 epidemic prevention and control and the deployment of economic and social development that "We should strengthen macro-policy adjustment. Macro policies should focus on counter-cyclical adjustment, and the pace and intensity should be able to hedge against the impact of the epidemic, prevent economic operation from slipping out of

the proper range, and prevent short-term shocks from turning into trend changes. A proactive fiscal policy to be more positive and promising to continue studying stage, targeted tax cuts policy” [2], this strategic deployment indirectly promote the 2020 will be coronavirus outbreak accelerate China’s e-commerce evolution, indirectly promote the transformation and upgrading of China’s e-commerce industry chain in 2020-2025, by bigger and stronger China brand, to become bigger and stronger China electronic business transformation and upgrading of the industrial chain. So far, the epidemic has been most severe in Guanzhong, followed by Southern Shaanxi and the least severe in northern Shaanxi. Xi’an, Xianyang, Hanzhong, Tongchuan and other e-commerce areas covering pharmaceutical manufacturing (including traditional Chinese medicine, Chinese patent medicine manufacturing), chemical manufacturing and textile manufacturing will embrace development opportunities.

II. CHINA’S E-XOMMERCE INDUSTRY DEVELOPMENT STATUS ANALYSIS

2.1 General Situation of the Development of China’s E-Commerce Industry

E-commerce is an important part of the development of the national economy and a new engine to promote the development of the real economy. It’s conducive to stimulating social employment and promoting the rational transformation of the industrial structure. Nowadays, e-commerce not only needs to provide information sharing function, but also needs to provide professional and in-depth services to effectively control and manage logistics, capital flow and business flow. For enterprises that use e-commerce to reach the Internet, they are no longer satisfied with the original function of e-commerce to expand sales channels, but more hope to use e-commerce to carry out sales system integration, brand promotion, financial services, etc [3].

With the increasing Internet penetration rate, e-commerce in China has been developing steadily. According to data from iiMedia Research, in the first half of 2019, the total online retail volume in China has reached 1.52097 trillion yuan, accounting for 24.7% of the total social retail volume. By 2019, the number of mobile e-commerce users in China will exceed 700 million. Advances in mobile terminals and payment technologies have boosted the penetration rate of e-commerce among Internet users. The e-commerce system has developed and matured in China, and the user scale has gradually reached the ceiling of Internet users. With the steady development of e-commerce, major e-commerce platforms have spared no effort to explore new marketing models to increase consumers' desire. The most popular consumption models in 2019 are live streaming and group buying[4].

2.2 Analysis of the Development Characteristics of China's E-Commerce Industry

In the new retail era, the topic of traffic acquisition is prominent, and the platform is diversified and innovative to win users. The e-commerce system will accelerate the maturity, and the industry development will be more standardized. Consumers pay more attention to the quality of e-commerce shopping, and the influence of platform endorsement is expanding. E-

commerce platforms have strengthened social networking layout, and the development speed of group-buying mode has been improved. The improvement of infrastructure helps to strengthen the penetration of e-commerce platforms, and the competition for sunken cities will become more intense.

III. ANALYSIS OF E-COMMERCE MARKET IN 2019

3.1 General Overview of China's E-Commerce Market in 2019

In terms of transaction size, according to statistics, the total transaction value of China's e-commerce industry reached 36.8 trillion yuan by 2019, up 16.3 percent year-on-year[5].

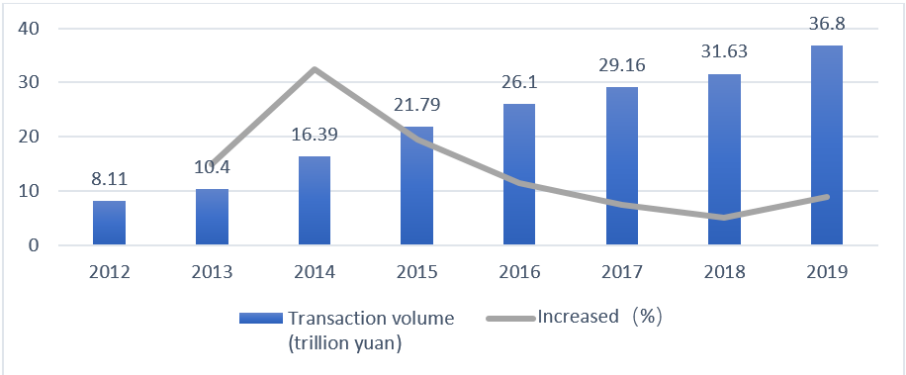


Fig 1: Total transaction volume and growth of e-commerce industry in 2012-2019

From the perspective of the structure of major market segments, B2B e-commerce accounts for 66.74%, B2C 16.48%, C2C 12.33%, and life service e-commerce accounts for 4.44% in 2019 [6].

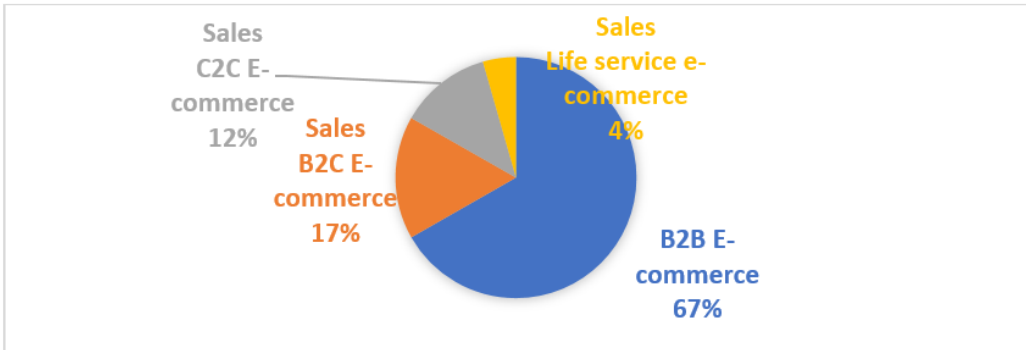


Fig 2: Market structure of China's e-commerce segment in 2019 (unit:%)

According to statistics, in 2019, a total of 66 enterprises were listed in China's e-commerce industry, including 28 retail e-commerce enterprises, 21 life service e-commerce enterprises, 10 industrial e-commerce enterprises and 7 e-commerce enterprises[7].

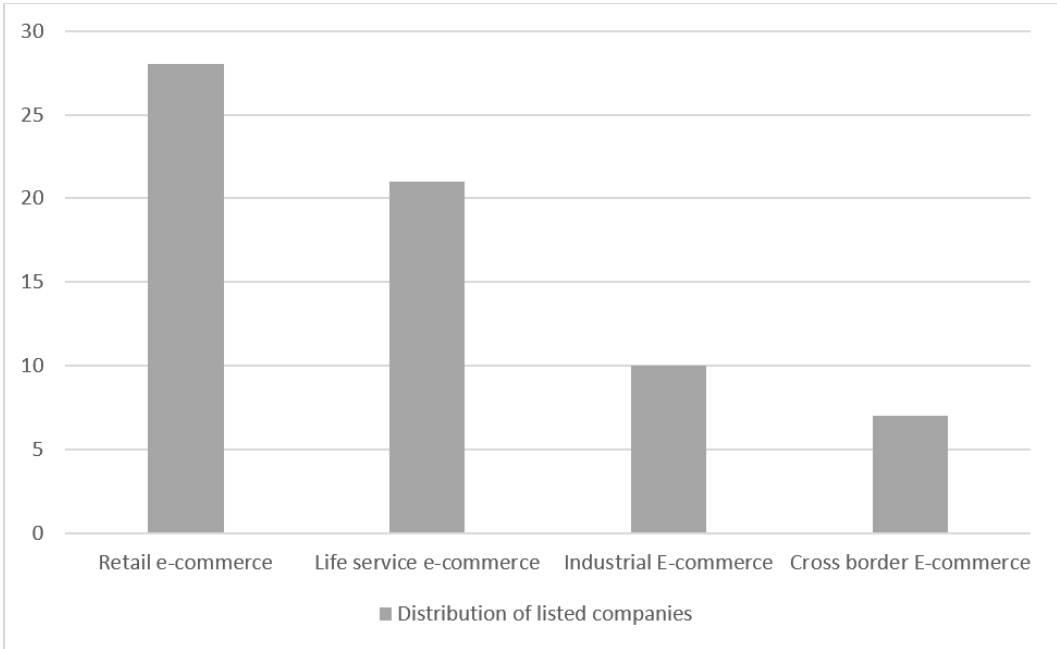


Fig 3: Distribution of e-commerce listed companies in 2019

In terms of investment and financing, statistics show that in 2019, China’s e-commerce industry received a total of 665 investment and financing cases, and the amount of investment and financing was 193.381 billion yuan, 12% lower than that of the previous year.

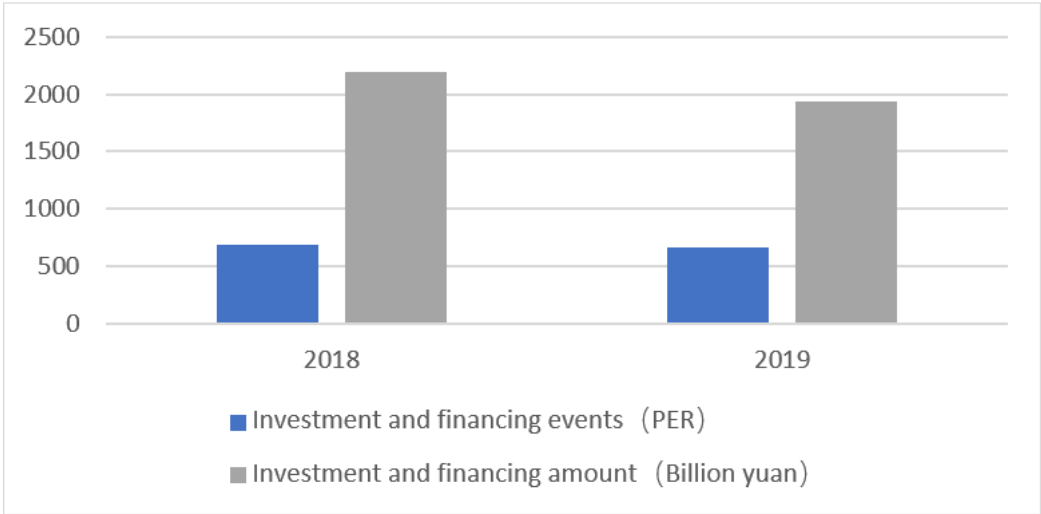


Fig 4: Financing situation of e-commerce industry in 2018-2019

In terms of the distribution of financing rounds, there are 240 rounds of Financing, 113 rounds of angel financing, 80 rounds of financing, 80 rounds of strategic investment, 54 rounds of financing in C, 23 rounds of financing in D, 14 rounds of seed financing, 10 rounds of merger and acquisition, 5 rounds of IPO, 5 rounds of E, 3 rounds of F, 1 round of H, and 13 rounds not disclosed[8].

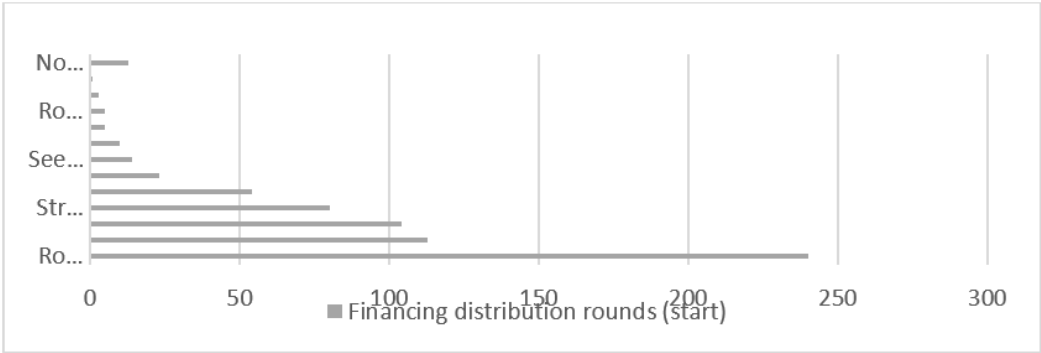


Fig 5: Distribution of financing rounds of China's e-commerce industry in 2019

3.2 Analysis on the Development of China's E-Commerce Product Market in 2019

In 2019, the TOP10 financing amount of China's e-commerce industry reached 97.86 billion yuan, among which alibaba participated in five investments, namely cainiao network, Ali local life service, netease koala and shentong express. Shentong express received two strategic investments from alibaba, totaling 14.642 billion yuan[9].

TABLE I. China's e-commerce industry financing top 10 list in 2019

China's e-commerce industry financing top 10 list in 2019				
Financing parties	Financing events	Financing rounds	Financing amount	Investor
Rookie network	2019.11.8	Strategic investment	\$23.3 billion	Alibaba
Alibaba local life service	2019.1.30	Strategic investment	\$3 billion	Softbank China capital,Alibaba
NetEase Koala	2019.9.6	Merge	\$2 billion	Alibaba
STO Express	2019.8.1	Strategic investment	\$9.982 billion	Alibaba
Shell search	2019.3.25	Round D	\$1.2 billion	Hanwu venture capital
One meter tick	2019.7.1	Strategic investment	\$8 billion	BOC,Tianshi Renhe
STO Express	2019.3	Strategic investment	\$4.66 billion	Alibaba
Love recycling	2019.6.3	Strategic investment	\$500 million	Jingdong,Chengxing capital,Qingxin capital

Egg shell apartment	2019.3.1	Round C	\$500 million	Tiger Fund (China), Ant financial, Chunhua capital
Suning store	2019.5.20	Strategic investment	\$450 million	SUNING, Great Maritx

(The above data is from the analysis of the market status and development trend of China’s e-commerce industry in 2019 [10])

IV. NOVEL CORONAVIRUS HAS AN IMPACT ON THE E-COMMERCE INDUSTRY

By 2020, value-added of the service sector will account for 59% of China’s GDP, employment of the service sector will account for 47%, and the dominant role of the service sector will be basically established. By 2030, the value added of the service sector will account for 72 percent of GDP and the employment of the service sector will account for 56 percent of GDP, basically reaching the medium level of strong service countries[11]. The epidemic has had varying degrees of impact on the supply chain of e-commerce, logistics and other industrial chains.

4.1 The Positive Role of E-Commerce

Because the epidemic has disrupted offline business, online has become the only channel and means of communication and sales. So, the epidemic actually accelerated the popularity of e-commerce. Medium and large traditional enterprises should still attach importance to their B2C platforms. The e-commerce of Beijing, Shanghai, Guangzhou and Shenzhen has basically matured, while the third-line and fourth-line e-commerce has just started[12].

First, the COVID-19 epidemic has had a huge impact on the online education industry, adding fire to the increasingly hot online education industry and accelerating its rise. Many parents have only heard about online education before, but have no contact with it, so they prefer traditional offline education in their choice[13]. Maybe in a few years, when online education develops better, parents will choose. However, due to the major epidemic crisis, online education suddenly appeared in front of parents, and many institutions launched free trial courses. In order to meet the learning needs of children, parents unanimously chose online education as a way of learning. After contacting with many parents, they find that online education has advantages over traditional education. The development of online education also makes a large amount of capital pour into the market, which makes the rapid development of online apps and has a far-reaching impact on e-commerce.



Fig6: The epidemic has brought about the development of online education

Second, the express delivery industry is prospering further when users gradually turned to online shopping behavior will directly pull the express industry development, especially the Jingdong, motion the two strong timeliness and security of express delivery companies, is expected to be further standardized and graining sent item standard, playing to their own Courier network advantage preemption to borrow the original belong to cross a small market.

Third, various advantages of the self-run e-commerce platform will be revealed in advance. Users' shopping behavior is further transferred from offline to online. Self-operated e-commerce platforms such as Jingdong and Suning have strong supply chains, which can guarantee commodity supply on the premise of stable prices, and can close the loop within their own logistics system. This model will effectively acquire a large number of new users during the epidemic and within a period of time after the epidemic, and is expected to achieve the continuous retention (customer acquisition + retention) of this part of new users.

As a result of the restructuring of take-out business, Meituan's revenue growth in the first quarter may be reduced to 16-22%. Due to the first-level response to major public health emergencies successively launched across the country, the ordering frequency of take-out food during this period may be reduced to a certain extent compared with normal times. According to bocom international forecast, assuming that Meituan takeout will operate normally for 2-2.5 months in the first quarter of 2020, and users will order orders 3.5 times per month, GMV growth may drop to -18%-2% year-on-year, significantly lower than the previously expected 30% year-on-year growth rate. Assuming that the growth rate returns to normal in the second and fourth quarters, the annual growth rate is expected to drop to 15-19% from the original 23%, and the revenue will drop to 22-26% from 31%. In order to reduce the contact during distribution, Meituan also launched "contactless distribution". In the future, Meituan will gradually provide smart food pickup cabinets for inaccessible communities, continue to improve the distribution efficiency and reduce the per-unit distribution cost.

The impact of the reduction of food and beverage takeout orders during the epidemic.

TABLE II. Estimation table of the impact of the reduction of food and beverage take-out orders during the epidemic[14]

	Thecurrent forecast		Year on year		Assumes normal operation for 2 months		Year on year		Assumes normal operation for 2.5 months		Year on year	
	1Q20	2020	1Q20	2020	1Q20	2020	1Q20	2020	1Q20	2020	1Q20	2020
Million yuan	98350	474315	30%	23%	65570	441530	-18%	15%	81477	457436	2%	16%
Orders (million)	2147	10415			1431	9699			1789	10057		
Daily unit volume (million)	24	28			16	27			20	28		
MAU(million)	207	229			207	229			207	229		

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Finally, community e-commerce and fresh e-commerce will accelerate their growth.

Under the epidemic, the supply of fresh e-commerce is in short supply, with jd.com’s daily live exceeding 1 million, Hema and Dingdong Shopping both exceeding 400 thousand, and the number of new users continues to grow. At the same time, affected by the "unified distribution" policy of the epidemic, a large number of users have gradually formed the shopping habit of “delivering vegetables to your door”, which is very compatible with the community group-buying model (radish, food club, etc.). It is estimated that fresh e-commerce will continue to grow steadily during the epidemic. After the epidemic, community e-commerce will usher in a spurt of growth[15].

4.2 The Negative Impact on E-Commerce

First, impact on production.

For the production enterprises, in general, the epidemic is a relatively strong financial strength of enterprises, facing a huge potential crisis; and those small and medium-sized

enterprises with weak capital strength and poor anti-risk ability are facing a more severe living environment. From the nature of enterprises, the biggest impact is small and micro enterprises, private enterprises, fortunately, local governments have introduced policies to help and rescue, but this is also limited, can survive the crisis, depends on the specific situation of the enterprise.

Second, impact on sales.

Outbreak of the new champions league a thorough and profound impact on social and economic activities, both directly influence, also have indirect effects, both the short-term impact, more long-term impact, in order to study will be coronavirus on the overall impact of electronic commerce, mainly from the samples collected in Jiangsu Province, the research time for March 28, 2020 to April 5. In this survey, 320 valid questionnaires were collected and sorted, and the samples covered Wuxi, Changzhou, Suzhou, Yangzhou and other regions in Jiangsu province, and the samples were relatively balanced on the whole. In terms of gender, there are equal numbers of men and women, 168 males, accounting for 52.5%, and 47.5% females. In terms of age, the 25-35 age group accounts for 45.95%, the 15-25 age group accounts for 28.1%, and the above 40 age group accounts for 25.95%, which is consistent with the age of the mainstream e-commerce consumer group in China[16].

TABLEIII. The overall impact of COVID-19 on e-commerce

	Increase sales	Reduce sales	No impact
Number of people	148	96	76
Ratio	46.25%	30.00%	23.75%

According to the data, consumers hold different opinions on the impact of the epidemic. 46.25% of consumers believe that the epidemic will increase the sales volume, 30.00% of them think that the epidemic will reduce the sales volume of e-commerce, and only 23.75% think that the epidemic has no impact on e-commerce. Therefore, the analysis shows that the epidemic has a positive impact on online sales, but a negative impact on offline sales.

During the seven days of the Spring Festival alone, the film box office lost 7 billion yuan, the food and beverage retail lost 500 billion yuan, and the tourism market lost 500 billion yuan. The direct economic losses of these three industries alone exceeded 1 trillion yuan, which accounted for 4.6% of GDP in the first quarter of 2019.

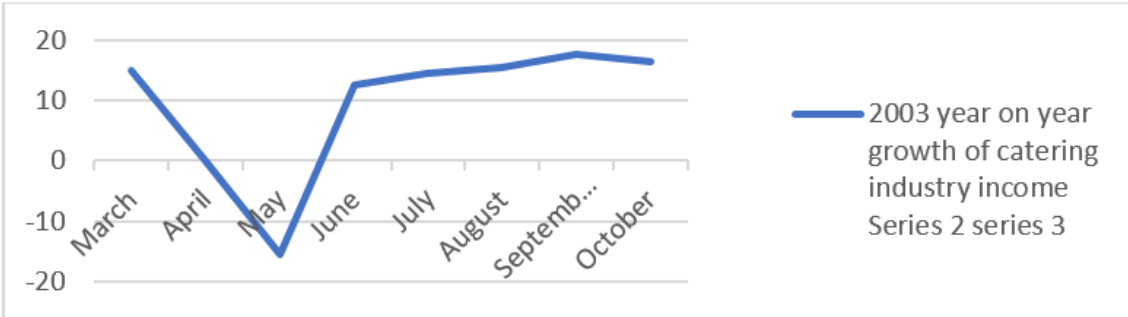


Fig 7: Restaurant revenue in 2003 year-on-year growth[17]

Jia Guolong, founder of Xibei Catering Group, a well-known catering company, said in an interview with the media, the epidemic has caused more than 20,000 employees to be laid off. However, according to the national policy, the salary should continue to be paid, and the monthly expenditure is only about 150 million yuan. Xibei's current cash flow is only enough for three months. If this is the case for large enterprises, it is even harder for small and medium-sized enterprises.

According to The survey conducted by Professor Zhu Wuxiang, 29.58% of the enterprises surveyed estimated that the epidemic had caused a drop in operating income of more than 50% this year, 22.43% planned to reduce staff and salary to tide over the difficulties, 21.23% were ready to take out loans, and 16.20% chose to suspend production and close their business. However, with the accelerated pace of resumption of work and the introduction of relevant supporting policies by the state, many industries began to resume production and business, catering and other enterprises are also demanding new business models to cope with the market supply in the special period.

Third, objective problems in e-commerce after the epidemic.

The suspension of international logistics, especially commercial flights, has a great impact on the timeliness and cost of supply chain. In order to prevent the spread of the epidemic, local governments have implemented strict traffic control measures. Vehicles unrelated to epidemic prevention will be impounded in some areas, making it difficult to carry out transportation operations. Supply chain operation is out of sync, reducing efficiency. Exports of goods are expected to recover gradually in mid-to-late March, in sharp contrast to the decline in capacity, as China's fight against the epidemic in February led to a drop in global stocks from overseas channels. The bulk goods exported by sea will be shipped by air, thus crowding out the capacity space of cross-border e-commerce direct shipments and FBA air shipments. The goods missed by the plane will be transferred to the sea express ship. It is very likely that there will be a cargo jam between late March and early April. In some countries, the development of the epidemic has led to changes in local logistics routes, affecting the delivery time [18].

The overall consumption power and purchasing power decline, specifically distinguish between life necessities and non-necessities, life necessities many people are panic hoarding, for e-commerce sellers is an opportunity. Uneven development of e-commerce imports. At present, according to the customs policy, e-commerce import platforms must be domestic registered corporate enterprises, but at present, there are very few domestic platform corporate enterprises with traffic, and most of these enterprises have taken root in the first batch of e-commerce import pilot cities and comprehensive test areas, while other cities have difficulty attracting these large platforms. In addition to domestic legal persons, overseas e-commerce platforms are also important channels for domestic consumers to purchase consumer goods. When the service capacity of several key pilot cities is relatively saturated, such e-commerce enterprises also hope to try new ports for service, so as to provide consumers with better

domestic customs clearance and logistics services. However, subject to relevant policies, overseas e-commerce platforms cannot realize filing.

There is a serious shortage of professional talents. On the one hand, due to the fragmented orders and international trade situation, traditional foreign trade enterprises have to take advantage of the trend to transform into e-commerce, and one of the barriers they face is the establishment of a talent system. On the other hand, e-commerce has entered the era of refined operation, the platform threshold has been raised, competition has intensified, the past mass distribution, lying down to make money era is over. E-commerce online enterprises have few products with independent intellectual property rights, independent brands, independent marketing, high-tech content, high added value and high benefit (i.e., three from three high). Therefore, it is urgent to guide, encourage and increase the export proportion of “three from three high” products.

4.3 Countermeasures of E-Commerce Development after Pneumonia Epidemic in Covid-19

4.3.1 Countermeasures for Post-e-commerce Development in Novel Coronavirus

The COVID-19 epidemic has negative impact on the development of e-commerce, and it also brings opportunities for development. Therefore, the government should actively formulate measures for governance. The measures taken by the government reflect the government's emergency response ability, quickly eliminate adverse effects and transmit positive energy. Not only that, the government should give full play to its positive effects in public opinion guidance, information disclosure, traffic control, commodity supply guarantee, market price regulation and so on.

First, a pure platform e-commerce is in urgent need of transformation. This type of e-commerce platform can build its own supply chain and distribution system to cope with any subsequent emergencies. In the short term, pure platform e-commerce companies such as Taobao and PDD will face certain growth pressure, because platform merchants are mostly dealers, resulting in poor overall supply chain capability of the platform; The low unit price of platform customers leads to a relatively high proportion of single-piece logistics costs, which greatly weakens profitability; Restricted by the third-party logistics, there is a risk of “delivery without shipment”.

Second, retailers should break through online and offline barriers and build new retail models. After the epidemic, consumers must return offline. Therefore, e-commerce should actively expand offline business, realize mutual coordination with online, open up online and offline barriers as soon as possible, and build a new sales model; Cross-border e-commerce should strengthen cross-border logistics and overseas warehouse construction, and consolidate the e-commerce supply chain system.

Third, the government should provide policy assistance to e-commerce enterprises to effectively alleviate the business pressure of enterprises. To ensure the normal sales and operation of e-commerce enterprises, relevant industry support policies were introduced. For

large-scale e-commerce enterprises, the e-commerce platform should flexibly adjust the operation criteria and make precise policies.

Finally, e-commerce large-scale enterprises should flexibly adjust their operating rules and make precise policies on the E-commerce platform. E-commerce platform should immediately adjust the operating criteria of the platform according to the epidemic situation, give full play to the advantages of resource agglomeration of the platform, and actively help enterprises tide over difficulties. During the epidemic period, e-commerce sellers should optimize their operation strategies and pay attention to inventory management and customer communication.

4.3.2 The Significance of Novel Coronavirus to China's E-Commerce

The world is facing an unprecedented change in a hundred years. In the four most important industrial revolutions in the world, China missed the opportunity in the three industrial revolutions including steam engine and electric power, but in the fourth industrial revolution, we just seized the opportunity.

First, it is conducive to the transformation and upgrading of e-commerce in China. China has taken the lead in some fields, including the Internet, artificial intelligence and e-commerce. We should seize the opportunity to transform and upgrade, and make every effort to cultivate and develop high-tech industries, especially the e-commerce industry, which has made great contributions to people's lives.

Second, it is conducive to the innovation of China's e-commerce model. For example, the new mode of "sharing employees" produced in this epidemic situation not only eased the employment shortage of enterprises, but also made employees get work income during the epidemic period.

Third, it is conducive to the development of China's e-commerce industry and promotes the sales growth of e-commerce. E-commerce is of great significance to the prevention and control of China's epidemic during the epidemic. Human development is accompanied by various dangers and struggles. The COVID-19 epidemic affects not only people's lives and e-commerce, but the end of the epidemic does not mean the end of the crisis. In the future, human development will still face various crises. Only by relying on people's wisdom and taking scientific measures can we resolve the crisis and promote the continuous development of society.

V. CONCLUSIONS

The significance of e-commerce for the prevention and control of the epidemic situation in China during the epidemic period is extraordinary. The development of mankind is accompanied by various dangers and struggles. The impact of the new crown epidemic situation is not only on people's lives and e-commerce, the end of the epidemic situation does not mean the end of the crisis. In the future, human development will still face various crises. Only by relying on people's wisdom and adopting scientific measures can we resolve the crisis and promote the continuous development of society.

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