



## **EFFECTS OF COVID-19 ON CHINA AND THE WORLD ECONOMY: BIRTH PAINS OF THE POST-DIGITAL ECOSYSTEM**

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### **Abstract:**

*Especially with the emergence of the digital economy in the last two decades, unprecedented changes in technology have come to the fore. Technology-induced unemployment has spread all over the world because developments in digitalization and automation reduced the need for human in all business lines. Digital economy has also shown its effects as changes in the lifestyles. Therefore, it called new ecosocial system. However, beyond the new ecosocial system, humanity awaits a new system as post-digital ecosystem. Most probably this transition would occur in an agonizing way. In the post-digital ecosystem, production methods are changing radically, and thus, due to the recent advancements in artificial intelligence technology, machines increasingly take over the jobs of humans. The steady upward trend in unemployment has made economic inequality a chronic problem in the society. The pandemic has the role of a catalyst that accelerates the emergence of the destructive effects of digital economy and augments these effects. After the pandemic, the post-digital ecosystem will rise from the ruins of the collapsing capitalist system. The purpose of this article is to attract attention to the future economic problems within the context of the pandemic.*

### **Keywords:**

Global Pandemic, Digital Economy, Post-Digital Ecosystem, COVID-19

### **1. Introduction**

At present, the new coronavirus (COVID-19) is rampant in China and has spread abroad. With the great attention of the Chinese state leaders, the people are mobilized. In the battle against the new coronavirus infections, it is necessary for professionals in scientific and technological disciplines to carry out research on virus transmission characteristics as soon as possible and use them in the battle against the new coronaviruses (Yang, 2019). The virus that causes COVID-19 is genetically related to the severe acute respiratory syndrome (SARS) virus, but it is not the same virus. Compared with COVID-19, the SARS fatality rate is higher, but the infectivity is much lower. Since 2003, SARS epidemic has not occurred anywhere in the world (Q&A, 2020). In the worst case scenario, the economic growth rate in the first quarter will drop by 2-3 percent and in 2020 by 5 percent. Compared to SARS, which broke out in 2003, COVID-19 is more destructive (Anthony, 2020). Furthermore, its economic impact is spreading globally (UN News, 2020). The growing economy generally means increased wealth and jobs. However, the Organization for Economic Co-operation and Development (OECD) has recently warned that this year, the global economy affected by the new COVID-19 epidemic may see its slowest growth rate since 2009. In the last week of February 2020, several major global stock markets showed their worst performances since the 2008 financial crisis (Jones, Brown, & Palumbo, 2020).

Although the pandemic seems to be the cause of economic problems, the main reason is deeper. Many former studies have drawn attention to the problems of digital economy and expressed the expectation of a global crisis. The problems that led the capitalist economy to a deadlock had existed before the pandemic. Changes in production methods in digital economy will inevitably cause unprecedented rise in the unemployment rates. Rising unemployment will cause demand uncertainty in the market. This phenomenon is called the vicious cycle of the post-digital ecosystem (Civelek, 2009). This vicious circle is unsustainable and will eventually lead the capitalist economy to collapse (Civelek, 2018). Advances in artificial intelligence technologies decrease the need for labor force. Inequality and unemployment will lead to chaos because consumers who demand products are constantly losing their jobs (Ford, 2009) (Ford, 2015). The digital economy manifests its impact on the habits, lifestyles, views and perceptions of individuals. Considering both the economic and social aspects, it would be apt to define it as a new eco-social system. The term of a new eco-social system was firstly suggested by Civelek and Sözer in 2003 (Civelek & Sözer, 2003). Beyond the new eco-social system, humanity is awaiting a new system that can be named as the post-digital ecosystem, which as a term was proposed by Sözer, Civelek and Çemberci in 2018 (Sözer, Civelek, & Çemberci, 2018). The current COVID-19 pandemic expedites the transition from the new eco-social system to the post-digital ecosystem. Most probably, this transition would occur in an agonizing way. Dystopian scenarios produced until now may be the future of the world economy after the pandemic; and the post-digital ecosystem will rise from the ruins of the collapsing capitalist system afterwards.

## **2. The Background of COVID-19 Virus**

Coronaviruses are a large family of viruses that can cause diseases such as the common cold and even acute severe respiratory syndrome (SARS) and Middle East respiratory syndrome (MERS). In China a global disease, COVID-19, has broken out recently; and it has been confirmed that its root cause is a new type of virus called 2019 new coronavirus (2019-nCoV) (Mayo Clinics, 2020). At present, the source of the COVID-19-causing coronavirus SARS-CoV-2 is unclear. All available evidence indicates that SARS-CoV-2 has a natural animal source, and it is not a constructed virus. Bats are likely to be the natural reservoir of SARS-CoV-2 virus. SARS-CoV-2 belongs to a class of gene-related viruses, including SARS-CoV and many other coronaviruses isolated from bat populations. MERS-CoV also belongs to this category, but the relationship is not so close (Q&A, 2020). People afflicted with the new coronavirus infection may develop the following signs and symptoms within 2-14 days after the exposure: fever, cough, and shortness of breath or difficulty breathing (CDC, 2020). The severity of the symptoms of the new coronavirus infection varies from person to person, with some being mild, some others being serious, and some may even lead to death. This disease remains to be understood in depth, but most severely ill patients are elderly or those suffering from other serious and chronic diseases. This situation is more similar to severely ill patients with other respiratory diseases such as flu (Mayo Clinics, 2020).

The virus that causes COVID-19 is mainly spread through droplets generated when an infected person coughs, sneezes, or speaks. These droplets are too heavy to be suspended in the air and will soon fall on the floor or onto various surfaces. If you are within one meter of a COVID-19 patient, you may be infected by inhaling the virus, or by touching a contaminated surface before washing your hands, and then touching your eyes, nose, or mouth (Q&A, 2020). There is currently no vaccine and any specific antiviral drug that can prevent or treat the 2019 coronavirus (COVID-19) disease. Yet, infected people should receive treatment to relieve their symptoms, while severe patients need to be hospitalized. Most patients recover after receiving a supportive treatment. Vaccines and some specific drug therapies are being researched and tested through clinical trials. The World Health Organization (WHO) is, for the time being, coordinating vaccine and drug development to prevent and treat the 2019 coronavirus (COVID-19) disease (Q&A, 2020). According to the latest prediction model of Harvard University, the epidemic may have a more serious outbreak, and there may still be a recurrence before 2025. Based on the data modeling, the researchers proposed to predict that in the absence of vaccines or other effective treatments, the pandemic may even recur before 2025 at the latest. The study pointed to a pessimistic possibility as such: this pandemic, which has given dozens of countries nightmares, will have the risk of coming back in the future. Relaxing isolation before the arrival of autumn could even have more serious outbreaks than today since it is expected that the epidemic may occur during the autumn and winter seasonal respiratory virus epidemics. By the same token, based on the data modeling,

the researchers propose to predict that in the absence of vaccines or other effective treatments, the epidemic may even recur before 2025 at the latest (MIT Technology Review, 2020). For herd immunity, it is required that a sufficient portion of the population should be infected. Lack of available hosts stops the transmission of the virus and it happens after the widespread exposure. With a disease as infectious as COVID-19, experts believe that more than two-thirds of the population would need to be immune so that the herd immunity can be created. Nevertheless, there is still much which is unknown about the duration of human immunity to COVID (Craven, Mysore, Singhal, & Wilson, 2020).

### **3. The Effects of COVID-19 on China's Economy**

The devastating economic effects of the pandemic are now spread all over the world. China was the first country to face this devastating effect. The World Health Organization's promotion of the 2019 coronavirus epidemic from an epidemic to a global pandemic indicates that the epidemic has spread widely around the world. Naturally, the effects of this global pandemic will be devastating on the Chinese economy and the global economy. In an interview, an economics professor and macroeconomist at the Faculty of Business Administration at the East China University of Science and Technology at Deutsche Welle, Shen Ling said that this has two main aspects. On the one hand, an increase in the epidemic means that every economy, especially large economies, should invest more resources in preventing the epidemic. For the epidemic prevention to work, a larger portion of cut is now required from the entire GDP, which will greatly affect production. The second point mentioned by Shen Ling is that other countries around the world impose flight control and entry restrictions on China since the outbreak of the virus in China and this situation have become more serious than before. This means that after the epidemic increases, the exchange of normal staff and goods will be restricted further, which will have a major impact on the already globalized Chinese economy. Since the outbreak occurred in China before, China encountered certain restrictions from other countries. Consequently, China's own economy has closed and the economy has been affected substantially. However, this epidemic will certainly have significant impacts on the exchanges, and China's imports and exports will be significantly reduced (Hong, 2020). In the worst case scenario, the economic growth rate in the first quarter will drop by 2-3 percent and in 2020 by 5 percent. Compared to SARS in 2003, COVID-19 proves to be destructive (Anthony, 2020).

China accounts for one-third of the global manufacturing industry and is the world's number one exporter. Travel restrictions have affected the supply chains of many large companies, such as Diageo, construction machinery manufacturer JCB and Nissan, all of which have to rely on Chinese manufacturing and its 300 million migrant workers. Jaguar Land Rover even stated that because some factories no longer have spare parts available, they did not hesitate to bring the spare parts from China to the UK with a suitcase. Consumers also faced some restrictions within this context. Some people are afraid of being infected with the new coronavirus and avoid participating in activities such as shopping in which they may be exposed to risk. Restaurants, car sales points, etc. have expressed quiet business (Jones, Brown, & Palumbo, 2020). Compared to other countries, the support measures implemented by the Chinese government have been relatively limited. In terms of enterprises, the social security contribution made by employers on behalf of the personnel between February and June has partially decreased. Supports were also provided in companies participating in efforts to combat against the spread of the virus. It has been relatively difficult for many Chinese companies to get loans too, which constitutes one of the related financial limitations. The bankruptcy of many companies seems inevitable under these current circumstances. Plus, surviving companies will experience major problems in collecting their receivables (Livermore & Shira, 2020).

For a period of time to come, the digital economy will become an important engine driving economic growth, and the pace of digital transformation in various industries and fields will be greatly accelerated. Wu Hao, the director of the Department of High Technology of the National Development and Reform Commission, stated at the press conference of the Joint Defense and Joint Control Mechanism of the State Council on the 23rd that the epidemic made us more aware of the huge benefits brought by the deep integration of information technology and digital transformation, Telemedicine, e-commerce, mobile payment, etc. , which played a significant role in the prevention and control of the epidemic and resumption of production. According to Pan Helin, the Executive Dean of the

Digital Economic Research Institute of Zhongnan University of Economics and Law, due to the impact of the epidemic, offline consumption activities have been transferred to online, and the consumption model of the digital economy field that eliminated space restrictions has shown its advantages. For example, e-commerce companies have actively used their platform advantages to develop supply sources and optimize inventory, which has played an important role in bridging supply and demand. However, many companies still have many problems and challenges in digital transformation (Zhu, 2020).

Although China hopes to turn the digital economy into the backbone of the new economy against the coronavirus, there are still many problems and difficulties in China's digital economic development. Firstly, most enterprises lack awareness of digital transformation paths and development models. For example, according to statistics from relevant agencies, currently about only 9 percent of the leading companies in China have opened up new businesses or services through digital transformation. Most enterprises, especially SMEs, lack the knowledge of how to improve efficiency or increase revenue through digital technology. From the perspective of all parts of the country, the following seem to be the main problems: the single method of development and the phenomenon of copying are prominent; focusing only on hardware facilities and overlooking the construction of soft environment, and lack of application scenarios. In order to attain "political achievements" and realize "face-saving projects", some places have rushed to the market without in-depth understanding and scientific planning of cloud computing, big data, artificial intelligence, block chain and other emerging technologies, resulting in waste of resources and low efficiency. Furthermore, the other difficulty concerns the insufficient supply and application guarantee for new digital technology infrastructure. Development of digital economy requires the development and maturation of digital technologies such as artificial intelligence, big data, cloud computing, 5G, whip and object network. There is also lack of digital and intelligent applications in key areas such as smart healthcare, smart education, smart transportation, driverless driving, smart cities, smart manufacturing and smart homes (Wu, 2020).

The construction of new infrastructure can better promote the transformation and upgrading of the Chinese economy and accelerate the development of high-end industries. Software infrastructure, on the one hand, promotes the adoption of digital and intelligent applications in key areas, promotes the widespread penetration of new generation information technology such as artificial intelligence, big data and object networks and intelligent education. It accelerates the promotion of smart economy, smart education, smart transportation, unmanned driving, smart cities, smart manufacturing, smart homes and other smart economic application developments. On the other hand, it is necessary to improve and perfect the relevant legislation on big data, network security, and platform economy, to strengthen the confirmation, opening, circulation, protection, and use of data resources, to regulate the development of platform-related entities, and to accompany the development of new formats of the digital economy. It is also essential to promote and use digital technology to resume production and production, and ensure the safety of enterprise supply chain and industrial chain. With the control of the COVID-19 epidemic in China, the orderly resumption of production and production under the premise of how to ensure the effective prevention and control of the epidemic will become the top priority in our follow-up work. Therefore, it is recommended that the government actively encourage enterprises and institutions to make effective use of digital technologies such as big data, artificial intelligence, cloud computing, 5G, object networking and blocking to achieve production and production recovery. The government makes use of the superior role of the industrial Internet platform in connection, data collection, remote collaboration, resource scheduling, data analysis, decision optimization, etc. Through the aggregation and modeling analysis of massive data, it can timely obtain the information of resumption and production of small and medium-sized enterprises for supporting small and medium-sized enterprises to overcome difficulties and achieve stable development policies providing decision-making basis (Wu, 2020).

#### **4. The Effects of COVID-19 on the World Economy**

Beginning in early 2020, new coronaviruses are sweeping countries, which has caused a dramatic impact on the residents' lives, work and study. In this epidemic, tourism, catering, production, real estate, education, etc. are mainly offline operations industry which are under great pressure, and industries or enterprises with solid information and automation foundations are more resilient to the epidemic. These developments have led to new thinking about online business, automation and zero-touch work methods (Yang, Ying & Hu, 2020). The economic effects of the

global pandemic are felt increasingly all over the world. The negative effects of long-term restrictions on economic activities in developed economies will soon spread to the developing countries through trade and investment channels. The sharp decline in consumer spending in the European Union and the United States will reduce the import of consumer goods from the developing countries. In addition, as global supply chains may continue to be interrupted, global manufacturing output may also shrink significantly. The worst case scenario is that global GDP may decline by 0.9 percent in 2020, compared with the previous forecast of an increase of 2.5 percent. The report warns that if global restrictions on economic activity continue into the third quarter of this year and the fiscal response fails to support residents' income and consumer spending, global economic output may shrink further (UN News, 2020).

The Asian Development Bank (ADB) reported that the cost of the new coronavirus (Covid-19) epidemic to the global economy may reach USD 4.1 trillion. The report updated the economic impact of the Covid-19 epidemic and pointed out that in this case, due to a longer period of cessation of economic activity, a greater demand shock will occur and these will spread to Europe, the United States and other major economies, therefore, the cost of the virus to the world economy may reach USD 4.1 trillion. According to the report, global GDP has contracted by 4.8 percent. With the suspension of economic activities and the impact of demand being smaller, the pandemic's damage to the global economy is limited to USD 2 trillion. Global GDP will shrink by 2.3 percent (TRT News, 2020). The World Trade Organization said today that as the 2019 coronavirus pandemic disrupted normal economic activity and life worldwide in 2020, world trade is expected to decline by 13 percent to 32 percent. Trade recovery is expected in 2021, but it depends on the duration of the outbreak and the effectiveness of the response policy. The WTO report on the impact of the 2019 coronavirus pandemic on trade indicates that in 2020 almost all regions will experience double-digit declines in trade, and North American and Asian exports will be the ones which suffer the most. The report stated that trades with complex value chains, especially electronics and automotive products may experience a significant drop in trade. According to the report, transportation and travel restrictions have the most direct impact on trade in services. WTO economists suggest that this decline may exceed the 2008-2009 global financial crises. The report points out that after the 2008-09 financial crises, trade has never returned back to its previous trend. If companies and consumers see the epidemic as a temporary, one-time shock, then a strong rebound is more likely. In this case, once the crisis subsides, spending on investment equipment and durable consumer goods may return back to levels similar to those of previous times. On the other hand, if the ongoing or recurring uncertainty of the epidemic becomes common, households and businesses may spend more cautiously. According to the report, in both cases, imports and exports in all regions will have a double-digit decline in 2020. If the epidemic is taken under control and trade begins to expand again, most regions may experience a double-digit rebound in 2021 (UN News, 2020).

According to the latest study released by the United Nations Department of Economic and Social Affairs today, due to the impact of the new coronavirus pneumonia epidemic, the global economic contraction rate may be close to 1 percent this year. The study also pointed out that if global restrictions on economic activity continue into the third quarter of this year and the fiscal response fails to support residents' income and consumption expenditure, global economic output may shrink further. In Europe and North America, the increasing restrictions on population movements and the adoption of lockdown measures have severely damaged the service industry, especially those industries that require actual interaction, such as retail, leisure and hotels, entertainment, and transportation services are among the ones mostly affected. Jobs in all these service sectors account for more than a quarter of total jobs in these economies. As corporate revenues decrease, the unemployment rate may increase significantly, thereby transforming the supply-side shocks to the economy into a broader demand-side shock, in contrast, during the global financial crisis in 2009, the global economy contracted by 1.7 percent (UN News, 2020). Declining tourism revenue and commodity exports and capital outflows will affect vulnerable countries. The economic risks faced by developing countries will increase further, especially for developing countries that rely on tourism and commodity exports. Decrease in the number of inbound tourists will cause serious damage to the development of tourism that employs millions of low-skilled employees in developing countries (Jones, Brown & Palumbo, 2020).

Declining incomes and reversing capital flows will make many commodity dependent countries more likely to experience a debt crisis. When expenditures need to be increased to control the spread of the pandemic and support consumption and investment, governments in these countries may have to cut down on public spending. The economic crisis will have a negative impact on sustainable development. The pandemic is having a severe impact on millions of low-income workers in the service industry. These workers often lack labor protection and the work they perform requires close contact with people. Without adequate income support, many workers will fall into poverty, even in many advanced economies, which will further exacerbate the already severe income inequality. In addition, the impact of school suspension may have long-term consequences. The report finds that as the COVID-19 epidemic worsens, slower economic growth and increased inequality will deepen deep-rooted economic anxiety. Even in many high-income countries, a large number of people do not have sufficient funds to ensure that their living standards can be maintained above the national poverty line for up to three months. For example, in Italy and Spain, which are heavily affected by the epidemic, it is estimated that 27 percent and 40 percent of the population, respectively, do not have sufficient savings to enable them to live more than three months without work (UN News, 2020).

The precariat class, mostly made up of immigrants, which has emerged as a result of the increasing globalization over the past 30 years, has been affected by the large wave of unemployment. This class represents people without job security (Standing, 2011). Especially people who live intensely in the cheap production regions of global capital, such as China, will be the source of major social problems in the post-pandemic period. Under the crisis condition, gold is often regarded as a safe haven by the investors. The price of gold has also risen recently. In February, the price of gold per ounce once reached a record high of USD 1682.35. Investors fear that the new crown virus will spread outside China, which will further dampen the global economy and consumer demand. Shutdown of the factories slows production globally. Large-scale quarantines, travel restrictions, and social removal measures cause stagnation, leading to a sharp drop in consumer and business spending by the end of the second quarter. Although the epidemic was brought under control in many parts of the world in the second quarter of 2020, the collapse will accelerate. If consumers continue to stay at home, businesses will lose their income, and thus, lay off workers. Unemployment will rise sharply. Increasing bankruptcies will put significant pressure on the financial system. Current low interest rates had a limited effect. Modest fiscal measures will be insufficient to overcome economic losses (Craven, Mysore, Singhal & Wilson, 2020).

Due to this sudden epidemic individuals are facing severe challenge. The financial turmoil brought about by the outbreak of the global epidemic has brought a new round of impact. According to the Deloitte Global Human Capital Trends Report 2019, which previously participated in surveys in 119 countries around the world, showed that 80 percent of the respondents believed that the application of energy will increase, and 64 percent of the respondents think that the application of robot technology will increase. As technology changes, the design of jobs will be integrated, incorporating more digital and digital drivers, a trend which has undoubtedly been accelerated by the epidemic. "New Thoughts on Enterprise Management under the Epidemic Situation-Intelligent Posts Guarantee the Lifetime of Enterprises in Crisis" proposes that in the case of an epidemic or a similar crisis, the configuration of more online, automated, and intelligent posts can bring greater resilience and flexibility to ensure the endurance of the enterprise, which was reported in the article "Facing Challenges and Planning the Future, Planning and Response of Human Resources in the Automotive Industry under the Epidemic Situation" describes the overall impact of the epidemic on human resource management in the automotive industry focusing on cost reduction and efficiency enhancement, and thus, ensuring survival (Wang, 2020).

How can we guarantee that the normal operation of the enterprise is not affected, or at least the impact is minimized in an epidemic or similar crisis? One of the solution is to trigger the integration of online and offline businesses by increasing the level of automation and by decreasing manual intervention. It is foreseeable that the epidemic will bring the whole work changes in the model (Yang, Ying & Hu, 2020). The epidemic has also triggered a profound reflection on how to improve the resilience and flexibility of enterprise management by practicing internal strength. The epidemic will inevitably pass, but entire way of working and the environmental impact is profound. From the current point of view, it is the general trend for enterprises to actively develop smart posts to achieve battery life in epidemic situations (Yang, Ying & Hu, 2020).

One of the important features of smart posts is that they do not rely on manual operations or a small part of them rely on manual operations. Remote communication is the mainstay in crisis situations. Enterprise employees cannot work on the job, and the opportunities of face-to-face contact between employees and customers have greatly reduced battery life. In other words, the large-scale use of automated and intelligent positions will not only minimize the contact between employers and employees, and reduce the possibility of epidemic infection, reducing the operational risk of the enterprise, but also will expand the business online; online and offline walking on two legs. According to the research report “Robot and Intelligent Automation Business Map” published by Deloitte in 2017, enterprises are under multiple influencing factors such as downward, slowdown in growth, and cost pressures, the use of smart jobs is considered a win-win move for society, enterprises and the public. According to the survey of the 2019 Deloitte Global Human Capital Trends Report, the vast majority of companies expressed that they hope to increase the use of artificial intelligence, cognitive technology, and robot technology in the next three years, and with these developments, future jobs will be integrated into more digital, cross-border integration (Yang, Ying, & Hu, 2020). Compared with traditional positions, smart positions have obvious advantages, first of which is that the post automation part can work 24 hours, verify and audit strictly in accordance with the rules, so high degree of standardization can be established while human error is minimized; Secondly, smart positions can reduce manual operations so that employees can communicate and deliver work without leaving the house. A further advantage is that the online response speed of smart posts is not affected by the epidemic. Smart jobs have been widely used in many industries such as banking industry (“drone bank” outlets have been welcomed by robots from the process of collecting points received by robots in unmanned banks). Therefore, the positions of lobby managers, tellers, and guides that must be provided in the bank’s business outlets can be replaced by machines. Coincidentally, in recent years, the recruitment of tellers by major banks has decreased significantly. Instead, the recruitment of scientific and technological talents and information technology talents has increased. These technology and information talents will be added to the digital jobs in the banking industry, using advanced digital technology combined with their own information technology background to complete more complex and cutting-edge work tasks and accelerate the transformation of banking technology. Regarding the takeaway industry: under the epidemic, “no contact” businesses are rising. For example, the intelligent food cabinets of takeaway companies, and the self-service tea cabinets of catering companies have started to become widely used. The intelligent meal cabinet replaces part of the responsibility of the food delivery staff (distance delivery from the door of the community to the meal delivery at the customer's door). People can save time for meal delivery, which also reduces distribution pressure, and increases distribution efficiency. For catering companies, it can also increase the turnover rate, reduce costs and increase revenues. For a single person, it also reduces the contact between people and the risk factor of infection. After the epidemic is over, the “no-touch” model may be retained and optimized, and more methods of replacing traditional manual jobs will appear in the take-out industry, such as the large-scale use of drones. In the case of catering industry, it can be noted that the food and beverage industry suffered most from this epidemic. However, before the epidemic began, some catering companies were already using automated, intelligent technologies such as electronic kitchens. In the traditional ordering process, poor communication between the front-end order and the back-end order results in slow serving speed and wrong things may happen, which in turn disrupts the customer’s dining experience and affects the turnover rate. The kitchen can effectively communicate with the front hall so that the front hall can master the progress of dish production in real time. More importantly, the electronic kitchen can store and analyze a large amount of obtained data, and master important information such as raw material quality, production rate, the production department’s dish and dish click rate and dish cost changes. (Yang, Ying & Hu, 2020).

As reported by the Deloitte customer service is challenged in the epidemic. In the design of intelligent posts, all the specific work facing the customer can be completed by the machine. The artificial customer service truly acts as the brain of the machine and becomes the experience and wisdom output behind the work of the customer. It is valuable to be deposited in the machine, prompting AI customer service to continuously learn and iterate. Such operations can greatly reduce the amount of manual work, improve work efficiency and reduce the operational risks of enterprises. For enterprises, talent acquisition, employee training, the design and implementation of crisis plans, a full set of process simulation are the basic means. Externally, it is necessary to enhance the customer's awareness and acceptance of smart posts so that companies can quickly use smart posts for customer communication in crisis

situations without causing a decline in customer experience (Yang, Ying, & Hu, 2020). The pneumonia epidemic caused by the COVID-19 is still spreading. Affected by the epidemic, industrial production, business operations, and residents' lives have encountered varying degrees of force. As one of the pillar industries of the national economy, automotive sector also faces impacts from all levels of industrial chain. In the short term, the epidemic has brought pressure on the survival of enterprises. In the medium and long term, it poses challenges to enterprises' cash flow management, supply chain management, risk resistance, and strategic orientation (Jiang, Yan, & Ying, 2020).

Under the new crown virus epidemic, for the real estate industry, in addition to the direct impact on land acquisition, contract sales, push-in rhythm, asset prices, etc., other deeper impacts are gradually becoming more prominent. Issues such as how to transform and upgrade, increase speed and increase efficiency and security that become urgent problems for housing managers. Although the short-term and long-term impact of the epidemic on the real estate industry cannot be ignored, challenges and opportunities always go hand in hand. For housing companies, it is also a good opportunity to force housing companies to reform and upgrade. Affected by this epidemic, as buyers' willingness to see the property on the spot declines, the challenge of de-selling is becoming severe. Major housing companies have launched measures such as online home sales and VR viewing to cope with the impact of the outbreak. In fact, online housing viewing is by no means a "last resort" for real estate companies to suspend their offline businesses under the epidemic. The major housing companies have already prepared for the digital transformation. Today digital transformation is as a new way of survival. In addition, the infiltration of new technologies such as cloud computing, object networking, big data and artificial intelligence have brought many opportunities to the real estate industry. Therefore, actively embracing new technologies, realizing the deep integration of digitalization, intelligence and real estate business, and promoting new business models will be the main themes of the future. In the digital era, the human-centered management model will become a trend, and the management of human resources will gradually change from process-oriented one to scene-oriented one, from hierarchical to network-based and from modular to interactive. Digitalization brings not only the continuous evolution of technology to human resources, but also unprecedented opportunities for innovation and change (Zheng & Teng, 2020).

Contrary to trend, life insurance companies accelerate digitalization transformation. According to the historical experience of SARS in 2003, affected by the epidemic, the number of residents has generally decreased when going out, the amount of social public activity is reduced, and the huge impact on the development and management of life insurance agents is self-evident. As most life insurance companies still have the highest volume of business in individual insurance channels, the pandemic will have a certain impact on the number of new life insurance companies and the increase in agents. In the face of overall business challenges across the industry, if life insurance companies can effectively and reasonably adjust the agent management model and provide agents with effective exhibition tools, they will be effectively able to achieve the goals of resisting business risks and optimizing management quality. While meeting various business challenges, life insurance companies also need to further sort out and refine their future business models, fully embrace the concept of digital transformation and occupy a favorable position in future business development. Under the epidemic situation, the activity of life insurance agents will decrease, while the frequency and time of customer visits, contacts and interviews will be significantly reduced. The life insurance company product description will be generally postponed or canceled, which will bring great challenges to the business development of life insurance companies. Life insurance companies can be effective for agents during the pneumonia outbreak by optimizing the management model and promote the digital transformation of the agent management system in the daily management of agents. In the past, by arranging morning and evening meetings and periodic performance review meetings, the performance of agents could be quickly grasped, and various matters of personnel management could also be mastered as soon as possible. During the outbreak the lack of direct communication brought some difficulties to the management of agents (Zheng & Wu, 2020).

At present, the agent management system in the industry is designed more from the perspective of business advancement. The perspective is centered on insurance policies. In terms of personnel, the main goal is to achieve business. It exists between the HRP used by companies to manage internal staff. Differences in essential ideas by upgrading the existing agent management system and incorporating the prescribed actions of the agent's daily management into the system are crucial. It is conducive to strengthening the management effect on the agent and

the management quality will be greatly improved. In the long run, the digital transformation of traditional insurance companies is the only way for business development. In the process of digital transformation, how to clarify the long-term development direction of the business and the effective talent strategy matching are among the issues traditional insurance companies need to face directly in the future. From the perspective of business development, digital transformation is a core proposition that life insurance companies cannot ignore. Whether to do traffic or products, this is always the first thing that life insurance companies need to return in digital transformation. Under the digital transformation, high-tech talents have moved from the background to the forefront. Leading large insurance groups in China have begun to adjust the company's positioning from the traditional "comprehensive financial service enterprise" to "financial technology enterprise", which is a new inspiration for other traditional financial institutions including insurance companies (Zheng & Wu, 2020).

Artificial intelligence is the core driving force for a new round of industrial transformation and will promote the transformation and upgrading of digital economy. The history of the three industrial revolutions shows that regardless of mechanical technology, electric power technology and information technology. Especially, information technology can greatly promote production standardization, automation, and modularization. Artificial intelligence technology also has similar characteristics and great application potential. The State Council's "New Generation Artificial Intelligence Development Plan" pointed out that by 2025, the scale of China's artificial intelligence core industry will have exceeded 400 billion yuans, driving related industries to exceed 5 trillion yuans. Artificial intelligence is the commanding height of a new round of scientific and technological competitions, which is crucial to economic growth and national security. In this global competition, China's advantage is that platform companies such as Baidu, Huawei, and Ali have accumulated a solid technical foundation, rich application scenarios, and massive data. Under the new infrastructure strategy, they will create a new competition for national development advantages and become a new growth momentum, being expected to become the leading force in the new artificial intelligence infrastructure. China still has shortcomings, which is for sure, with regard to basic scientific research, basic algorithms, core chips and high-end talents. The scientific and technological strength of major countries is the core of their national strength. Whether or not to seize the opportunities for change in the smart era is the key to China's modernization. Artificial intelligence is an important part of the fourth industrial revolution and will promote the transformation and upgrading of the digital economy industry. Since the 18th century, three large-scale technological revolutions have occurred in human society, namely the steam engine revolution, the power revolution and the information, namely the Internet revolution. Artificial intelligence will be an important technology in the fourth technological revolution. Since first proposed at the Dartmouth conference in 1956, artificial intelligence has been under the process of development for more than 60 years. It is generally believed that computers constantly need to learn by themselves and expand their knowledge base to master many skills such as "painting, singing, reading, designing" that humans possess, the expression of which is "intelligence". Artificial intelligence can be understood as the continuous perception and simulation of human thinking processes by machines, with machines achieving or even surpassing human intelligence, ability to perceive, think and even make decisions. Artificial intelligence has been applied in many vertical fields. Currently, more mature fields include home furnishing, finance, transportation, and medical treatment. Integrated with many vertical fields, artificial intelligence technology can enable industry empowerment in two ways: on the one hand, it can increase production efficiency, reduce costs and increase efficiency. One example of this aspect is seen in financial industry. At present, artificial intelligence is mainly used in risk control, payment, claims settlement and investment advisory. Intelligent investment advisory applications are the most mature one. Artificial intelligence has also played a crucial role in the prevention and control of the pandemic, mainly covering aspects such as epidemic surveillance, body temperature detection, virus detection and resumption of production. The outbreak of the COVID-19 epidemic during the Spring Festival brought great challenges to virus detection, tracking, isolation, prevention and control. The application of artificial intelligence, supported by data, mainly helped temporal tracking and epidemic research and judgment. New business models and new economic growth points take the automobile as an example, in which intelligent network connection is area of artificial intelligence application in the automobile industry. On the one hand, intelligent network connection can improve the intelligence of cars, including automatic driving, intelligent voice, and intelligent cockpits; on the other hand, it can be combined with 5G to improve the ability of automobile information communication to achieve network connection, including personnel and vehicle safety management, road traffic planning of the cities, etc. (Ren

& Xie, 2020). In general, artificial intelligence has had a significant impact on the global economy for all the reasons specified above.

## 5. Conclusion

Economic impact is spreading globally with a further rise in the influence of COVID-19 in 2020. It accelerates digitalization transformation. At present, governments of various countries attach great importance to and provide support and encouragement in infrastructure construction, basic scientific research, talent training, funding research and development as well as cooperation and exchange. Capital and enterprises are also actively seeking commercial landing scenarios to assist technology transformation. The COVID-19 has accelerated the digital transformation. In the wave of the digital economy, 5G is like an “information highway”, providing high-speed transmission channels for the transmission of huge amounts of data and information. Artificial intelligence has an obvious spillover effect, and it will promote industrial transformation and upgrading in the era of digital economy together with 5G and data centers. Competition in the artificial intelligence industry is the competition of the comprehensive strength of various countries in terms of policy, basic research, technology and capital. The technology has landed in the vertical field, which in turn generates new data, promotes the algorithm update iteration, and can further serve the vertical field, and so on. The emergence of artificial intelligence chips significantly increases the speed of data processing and supports increasingly complex algorithms to process complex data, which is an important foundation for the development of artificial intelligence. China and the United States are gathering places or hubs for global artificial intelligence companies. Chinese companies focus on the application layer, while American companies focus on the technology layer. As of February 2019, there were 3438 artificial intelligence companies in the world. The United States and China are the top countries. From the perspective of enterprise types, China is mainly an application-layer enterprise, and the United States is mainly a technology-layer enterprise. It should be noted that China’s artificial intelligence industry is still in the early stages of development, facing many problems such as lack of basic research and development, technology and scene integration, and traditional infrastructure not keeping up with technological development (Ren & Xie, 2020).

In the light of this development it can be said that the biggest effect of the pandemic will be radical and irreversible shrinking in global economy. In the pandemic process, work from home increased, unemployment reached an unprecedented level, and consumption fell. All this increased the destructive effect of the digital economy. In this way, the world is at the beginning of a new era. This period can be named as post-digital ecosystem.

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