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| RESEARCH ARTICLE

The Impact of Enhanced Digital Development on China's Economics in the Post-Epidemic Period

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| ABSTRACT
The global economy has been severely disrupted in the context of COVID-19, and China has not been immune to its impact. China is advocating a more comprehensive digital development plan, including a model that combines new technology and existing sectors, to offset COVID-19's influence on economic growth. The objective of this paper is to analyze the potential impact of enhanced digital development on the Chinese economy in the post-epidemic period. This paper uses a literature review and comparative case study analysis to analyze digital development in two of China's fastest-growing dynamic cities, Guangdong and Shanghai, and compare digitalization trends in developed countries. Finally, worldwide experiences and insights are used to analyze China's digital age prospects and problems and how to boost China's digitalization potential to boost economic growth. The study shows that enhanced digital transformation has a positive impact on China's economic development in the post-epidemic period. Digital development is advancing more quickly in healthcare and education, particularly under the influence of COVID-19, increasing people's digital literacy while eradicating traditional time and space restrictions and fostering resource sharing and information transparency. In addition, it may boost economic development, provide new business possibilities, and enhance individuals' quality of life. China's digital transformation and upgrading face many challenges due to global competitive pressures, ecological and security environments, traditional industrial models, and consumer perceptions, but international experience and inspiration provide many new ideas.

| KEYWORDS

COVID-19, digitalization, China, economy, transformation.

| ARTICLE INFORMATION

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1. Introduction

Digital transformation is in line with the trend of contemporary society, and it can combine data science and technology with business scenarios to enhance business practices. The Proposal of the Central Committee of the Communist Party of China on Formulating the 14th Five-Year Plan for National Economic and Social Development and the Visionary Goals for 2035 explicitly proposes to "accelerate digital development" and makes systematic arrangements in this regard (News, 2020). The Chinese government has taken a strategic and holistic approach, grasped the laws of development, and made a major strategic decision to achieve high-quality development and build a strong socialist modern state. Digitalization includes many aspects, such as the digital economy, digital health, digital government, etc. It is important to accurately grasp digital development and governance. In the post-epidemic period, China is focusing more on digital transformation and upgrading, especially the development of digital health and education. The digital industry is embracing the digital world, and digital technology is reshaping the future of China's economic development, driven by multiple variables such as policy, technological iteration, market evolution, and the impact of COVID-19.

2. Literature Review

2.1 Digital Health and Healthcare Technology Transformation

In October 2019, the World Health Organization released the Global Strategy for Digital Health (2020-2024), which establishes the priority of digital health strategies and proposes strategic objectives and action guidelines to promote digital health development globally (WHO, 2019). According to the article by Li (2020), the fourth industrial revolution, with the internet at its core, combines traditional industries with modern technology, and digital health will be the biggest scenario for new technologies such as artificial intelligence. Digital health comes from e-health, but its meanings and traits go beyond what e-health is. It is an activity led by the government in which medical institutions, drug companies, social organizations, and other groups work together using information and digital technology to improve the health and welfare of residents.

According to an article by Huang and Jing (2022), the popularity of 5G and the Internet of Things has promoted the widespread use of mobile and telemedicine; artificial intelligence (AI) and cloud computing have given rise to new business models such as digital research and development and online sales in the pharmaceutical industry; and the use of health codes and trip codes has also played an important supporting role in monitoring and early warning of COVID-19 and resource deployment. China has built a digital health service system that combines digital technology with many different parts of health care. The demand side of healthcare services is increasingly at the heart of digital health, with more and more people using apps to monitor their health status in real time and demand for personalized healthcare services starting to grow gradually. In this process, consumers are no longer passive recipients of services; they participate in the entire healthcare service process, and both supply and demand sides continuously exchange information, forming a deeply integrated interaction (Huang & Jing, 2022). However, the uneven distribution of digital resources may cause conflicts among stakeholders. The distribution of digital resource use is affected by social status, economic conditions, and literacy, and there is an imbalance in the appropriation of digital resources by different groups (Raza et al., 2021). It is, therefore, difficult to avoid causing disadvantaged groups such as the elderly, low-income people, and people living in remote areas to have difficulty enjoying the dividends brought by digital health, such as telemedicine, reducing accessibility and health equity for these groups (Huang & Jing, 2022).

2.2 Digital Education Transformation

For the first time, the 20th Party Congress's report talked about the digitalization of education (Xinhua, 2022). It suggested promoting the digitalization of education and building a learning society where everyone can learn for the rest of their lives. Both digital education equipment and intelligent education scenarios have received widespread attention.

The steady improvement of digital teaching conditions has given the balanced growth of education a key hardware base. According to Wu and Ding (2023), by 2022, the national Internet access rate for primary and secondary schools will reach 100%, 99.9% of schools will have an outlet bandwidth of 100M or more, more than three-quarters of schools will have wireless network coverage, and 99.5% of schools will have multimedia classrooms. Open sharing of digital education resources is a key part of building up infrastructure to close the digital divide and education gap. By working together to build a public service platform for digital education resources, more people can help develop and use these resources in a way that protects intellectual property rights and makes sure everyone gets the same education (Wu & Ding, 2023). With the outbreak of the COVID-19, the digital classroom has become the most mainstream way of teaching and learning, as well as driving the overall development of digital education.

However, cybersecurity is an important factor in the healthy development of digital education and must be given high priority. The "online class blast" not only disrupts the public order of online platforms but also brings invisible harm to teachers and students. According to an article by Lu (2023), the "online class blast" at a secondary school in Xi'an's Xi'an New District is a very serious problem, and all sectors of society should focus their efforts on tackling the problem with a comprehensive and precise crackdown to explore the path to the healthy development of online education. How to carry out online safety education in online teaching, improve the digital literacy of teachers and students, and bring into play the function of online teaching to educate people has become a challenge for the development of digital education in China. The Beijing High School has refined the practical strategies of "guarding," "learning with pleasure," and "educating together." However, bullying in schools is a serious social problem that cannot be avoided, and cyberbullying is even more frequent (Lu, 2023). Lu (2023) also talks about how cyberbullying is handled in primary and secondary schools in Japan. This gives China a good idea of how to handle cyber safety education in China. While the Internet has brought convenience to people, it has also given rise to a variety of safety issues. Carrying out cybersafety education and building a firm line of defense against cybersafety play an important role in achieving both personal and national security. In the process of promoting the digital transformation of education, we must continue to improve the digital literacy of teachers and students, work together to create a green and safe cyberspace, and build a healthy new ecology of digital education.

2.3 Digital Economy and Industrial Structures Transformation

With the rapid development of the global economy and technology, China's economic development has officially stepped into the era of digital intelligence, and the development of the digital economy has also led to a certain degree of change in the industrial

structure of different industries. With the gradual maturation of technologies such as big data, cloud computing, and artificial intelligence, new industrial changes spearheaded by digital information technology have become the mainstream of development, enhancing industrial competitiveness through technological innovation and driving the development of the era and resource integration of enterprises with a new model, allowing the upgrading of industrial structure with a stronger focus. The 2016 G20 Hangzhou Summit first proposed digital since China's digital economy added value exceeded a cumulative 220,000, with the proportion of GDP exceeding 30% (G20 Summit, 2016). The spread of Internet information and the fast growth of the digital economy are both helped by how popular smartphones are. According to Gao (2023), as of 2019, the number of mobile phone network users in China is as high as 817 million. The trend of China's digital transformation has so far developed into a development model that takes policy as the core, uses the Internet as an important carrier, and allows for further optimization of resource allocation through the sharing of resources in an intelligent and informative manner, thus enabling the development of the digital economy to enter a whole new historical stage.

After the Third Plenary Session of the Eleventh Central Committee of the Party, the focus shifted to coordinating the growth of different industries (People.com, 1978). With digital technology at its core, it has also had a positive impact as far as the development of the three major industrial structures is concerned. Digital information technology has enabled China's production services, industrialization, and agricultural development to break the traditional constraints of time and space, making information more open and transparent through a model of resource sharing. However, accelerating the integration of traditional industries into the digital economy remains a challenge in the development process.

The development of China's digital economy has made it easier to share information and exchange resources between industries and has facilitated the efficient and rational use of resources. According to Gao (2023), the sharing of resources through the cloud can enable different industries to develop to varying degrees. For example, e-commerce-related industries can be combined with agricultural production and commercial marketing of industrial products, and through cooperation between each other's industries, a more accurate understanding of consumer needs can be achieved, promoting more personalized products and thus increasing sales of products. The digital economy allows for a trend of sharing industrial resources and helps to synchronize the development of various industries, thus leading to the transformation of China's industries and the rapid growth of the overall economy.

2.4 Digital Business Models Transformation

The digital transformation of enterprises is a necessary path for science and technology innovation in the context of the global double cycle (Liu & Liu, 2023). The digital transformation of business models is driving a shift in value creation from the enterprise to the demand and supply sides. China's 14th Five-Year Plan proposes to promote the integration of online and offline consumption, providing both opportunities and challenges for new retail enterprises. According to Cai (2022), digital transformation provides help in promoting the development and operational capabilities of enterprises, and there is a U-shaped relationship between digital transformation and operational capabilities at the collaborative level. According to Chi et al. (2022), the analysis of a "technology-market" framework for manufacturing firms shows that digital transformation of business models significantly improves financial performance, and the positive moderating effect of organizational change is evident. The study found that digital technology capabilities are a key feature in business model innovation and improve firm performance through self-direction and marketing confrontation (Li et al., 2022). The digital transformation of business models in new retail enterprises innovates digital value propositions and drives customer attraction and enterprise value creation through data embedding and linking (Lai, 2020). Traditional business models should be deeply integrated with e-commerce to improve operational efficiency and consumer experience. The government should play a guiding role in the digital transformation of new retail enterprises, and new retail enterprises should fully understand and grasp data as a new factor of production. Strengthening the digital platform of enterprises will help to accurately conduct operational management and reshape business models and customer experience.

2.5 Digital Governance Transformation

Digital governance is gradually breaking down the barriers to cross-departmental regulatory information and continuing to reduce the burden on businesses (Zhang, 2023). According to the article, the Shanghai Emergency Bureau has coordinated with various departments, including transport, customs, and railways, to enable the open exchange of data between their systems. According to the case study in the article, a customer of Sinotrans Chemical International Logistics recently needed to add 2-propanol to its warehouse. The normal process would have been very inefficient and time-consuming, but after reporting through the networked system, the contract could be signed within a few days. The digital governance model meets the new requirements of the new situation for safety products and provides a lot of convenience for enterprises in administrative licensing and daily management.

However, as digital reform continues to advance, grassroots communities have experienced problems such as duplication of systems, duplication of digital information collection, increased burden on the grassroots, data fragmentation, and rapid loss of

users. At present, all major cities in Zhejiang have responded to the call for "digital construction" and have built many digital projects at a fast pace. However, the use of digital systems at the grassroots level often makes it difficult to adapt to the real needs of grassroots governance. How to strengthen the personalization of the digital governance model is an important challenge at present.

3. Methodology

3.1 Analyzing Digital Trends in Guangdong Province - With a Focus on Digital Health and Digital Industries

Guangdong Province, the core city of the Pearl River Delta region and the southern gateway to China, has many growth opportunities, has been ranked first in China in terms of GDP and overall economic competitiveness for nearly 40 years, and should play a leading role in digital transformation (Gong, 2021).

As a result of COVID-19, Guangdong Province is first and foremost focusing on the transformation of digital health and healthcare. The 2023 Global Digital Healthcare Innovation and Ecology Summit was opened in Dongguan's Binhai Bay New District. The 2023–2027 Global Digital Healthcare Industry Economic Development Blue Book was also officially released (Qianzhan, 2023). Chen conducted an in-depth interpretation of the Blue Book, which included the increasing public attention to digital healthcare with the accelerated development of digital technologies such as artificial intelligence and 5G. According to the data, the global digital healthcare market size was US$211 billion in 2022 and is expected to increase to US$809.2 billion from 2023–2030 at a compound annual growth rate of 18.6%, and the global digital transformation of healthcare has become in line with the trend of the times (Qianzhan, 2023). The digital medical value of epidemic data models, 3D printing, and virtual simulation laboratories has come to the fore in the late stage of the Guangdong COVID-19, supported by the demand for epidemic prevention. According to Shanghai Securities News (2022b), Guangdong Province is fully implementing the development strategy of "building a healthy Guangdong and a strong health province."

By the end of 2022, Guangdong's telemedicine service network was connected to 1,838 medical institutions, with intelligent medical services covering 100% of tertiary hospitals and 90% of secondary hospitals, and 251 Internet hospitals providing online medical services. Digital health can promote the upgrading and innovation of the medical industry and has successively attracted many investors, pulling further economic development. At the same time, several public hospitals in Guangdong Province have successively held the launch meeting of "Internet+" Total Medical Process Management and AI Digital Therapy," marking a new phase of health management service innovation and AI digital therapy in Guangdong Province into a more standardized one (Shanghai Securities News, 2022a). Figure 1 shows a comparison between digital health care and traditional medical models. This shows that building an Internet hospital system is a key part of making digital health care and smart health care better. According to Yang et al. (2020), Guangdong Province has good policy opportunities, a robust industrial base, and a good geographical location, so its healthcare institutions can generate greater clinical and social value in the construction of "Internet + healthcare."

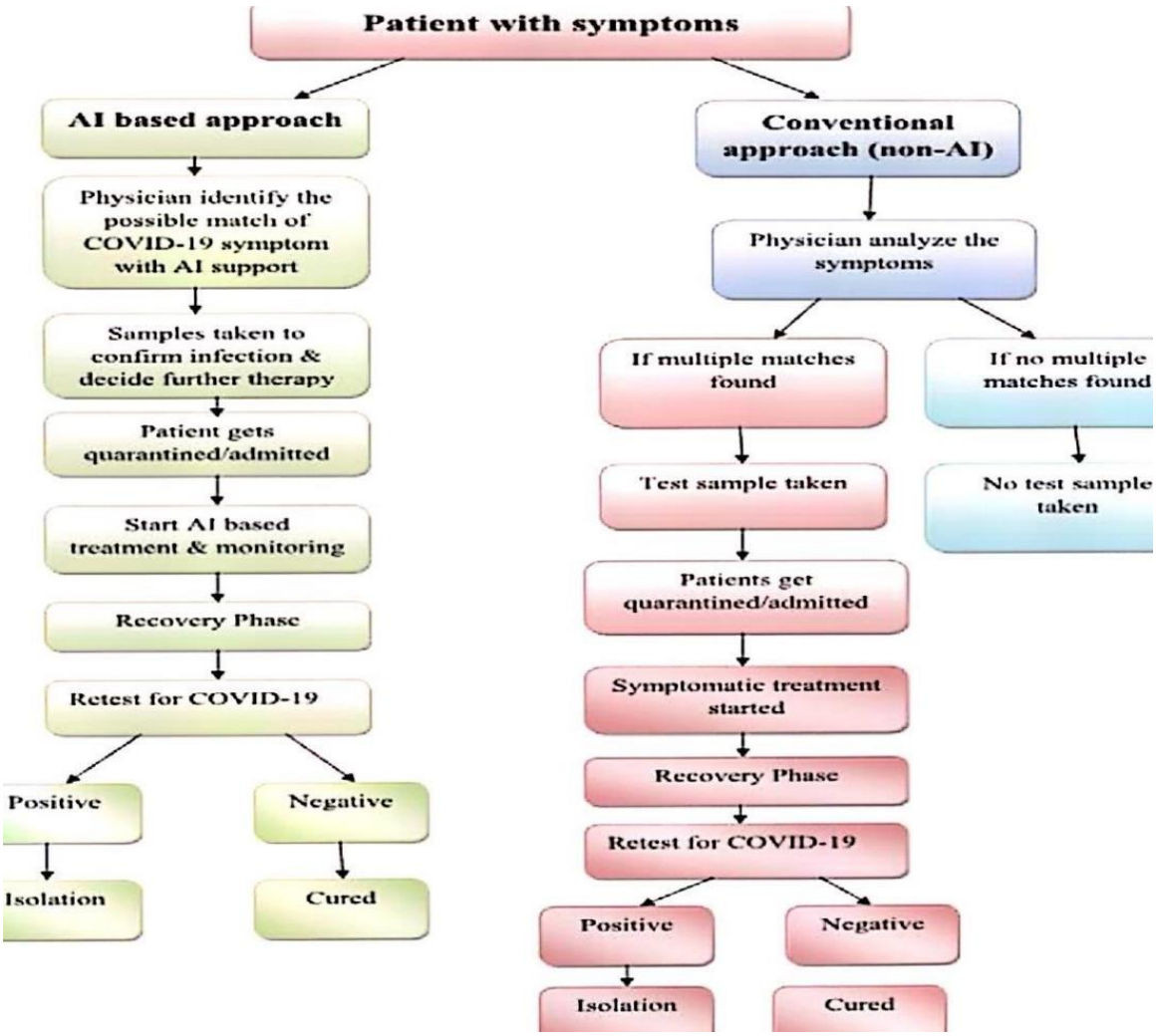

Figure 1: General products of AI and non-AI based applications that help general physicians to identify the COVID-19 symptoms
Source: Vaishya et al. (2020).

However, Guangdong Province also faces challenges in its digital healthcare transformation process, including the need to further improve synergy with enterprises. According to the Southern Daily News (2023), Liang Yaoming, chairman of the Guangzhou Federation of Industry and Commerce, said in a recent interview that enterprises are the main force of high-quality development and should further explore Guangdong's basic advantages, strengthen the integration and synergy of resources in the industry chain ecosystem, and create an industrial innovation ecology with Guangdong's brand characteristics that integrate life and health with the digital economy. Secondly, industrial chain innovation should be strengthened to solve clinical diagnostic challenges. Through the integration of biotechnology and new-generation information technology, a demonstration application base for the digital economy of intelligent medical examination should be built.

In addition, Guangdong Province places great emphasis on the transformation of its digital economy and industrialization. According to the White Paper on the Development of China's Digital Economy released by the China Academy of Information and Communication Technology in April 2021, the combined scale of digital industrialization and industrial digitization in Guangdong will reach RMB 5.2 trillion in 2020, with the two together accounting for 46.9% of GDP, 8.3 percentage points higher than the national level and 1.6 percentage points more than in 2019 (CAICT, 2021). Guangdong, with its policy advantages and geographical location near Hong Kong and Macao, has seized the historical opportunity of international industrial transfer and factor restructuring to vigorously promote industrialization and rapidly expand the scale of industries, forming a manufacturing system with a full range of categories and a large scale, laying a solid foundation for the establishment of a world advanced manufacturing base. The digital development of the manufacturing industry in Guangdong Province has the advantage of scale and is in line with the developed countries in the world at the technical level. Digital transformation and upgrading are of great significance to the future development of Guangdong's industrial clusters, especially for driving SMEs across the digital divide, which has important strategic and application values (Ren, 2021). The 14th Five-Year Plan of Guangdong Province clearly states that by 2025, the value-

added of the core industries of the digital economy in the province will account for 20% of GDP, which will be more than 10 percentage points higher than the national average (Office of the People's Government of the City of Guangdong, 2021).

However, accelerating the digital transformation, eliminating outdated and energy-intensive industries, realizing the strategy of simultaneous development of the service and manufacturing sectors, and accelerating the optimization of the industrial structure are the biggest challenges for Guangdong in addressing climate change. But it has also become the greatest opportunity to achieve green industrialization and modernization. China's manufacturing industry, which is mainly resource-intensive and labor-intensive, has been suffering from high consumption, an unreasonable industrial structure, and lagging development methods. However, Guangdong's superb market size, complete industrial system, and well-developed infrastructure give it sufficient strength to develop internal recycling and seize the opportunity of the digital transformation development strategy to seize new opportunities for industry chain reshaping, improve competitiveness, and boost economic development.

3.2 Analyzing Digital Trends in Shanghai - With a Focus on Digital Health and Digital Education

Shanghai is the core city of the Yangtze River Delta region and the international economic, financial, trade, and technology innovation center of China. According to the policy of the 14th Five-Year Plan for the Development of Shanghai's Digital Economy, by the end of 2025, Shanghai will rank among the top cities in China in terms of digital economy development, with the value added of its core digital economy industries accounting for around 15% of the city's GDP (Office of the People's Government of the City of Shanghai, 2022). Shanghai's industrial agglomeration and display will be significantly increased, the growth of high-potential digital new enterprises will be accelerated, the level of digital consumption will be continuously upgraded, and the basic framework system of the international digital capital will be formed.

Shanghai is mainly focusing on key areas such as new digital industries, new data elements, new digital infrastructure, and new intelligent terminals to accelerate the layout of the digital economy's development. The expansion of new digital industries includes digital health, and the creation of a digital health industry ecosystem is an important development area for Shanghai's digitalization in the post-epidemic period. As a result of the COVID-19, Shanghai is focusing more on the development of digital education and integrating more quality education resources to train new talents for the country. Foreign companies are also encouraged to set up functional digital economy headquarters, R&D centers, and open innovation platforms in Shanghai. State-owned capital is supported to form entities specializing in operating data industries. Play the leading role of leading enterprises in the digital economy, strengthen the sharing and opening of data resources, and promote the combination of online and offline innovation synergy, production capacity sharing, and supply chain interoperability.

In the area of digital health transformation, Shanghai aims to become one of the world's most robust cities in terms of public health systems. In the meantime, Shanghai will play a central role in driving the development of integrated health care in the Yangtze River Delta region. In 2021, Shanghai will focus on the shortcomings of “difficult access, long queues, and a lack of humanization” and launch seven applications for the digital transformation of “convenient access to medical services” scenario construction. To promote Internet treatment and smart health services, the Yangtze River Delta Smart Internet Hospital has been built in Qingpu District, and it has been working with Jiashan, Zhejiang Province, and Wujiang, Jiangsu Province, to promote innovation in the governance and service model of the medical industry and to create a “Yangtze River Delta digital trunk brand” for Internet healthcare and digitally empowered health urban areas.

As the core city of the Yangtze River Delta, it is difficult to achieve the goal of leading the collaborative development of digital healthcare in most cities in the region. The 14th Five-Year Plan period is a critical five-year period for Shanghai to comprehensively deepen the construction of the “Five Centers” from a new starting point and accelerate the building of a socialist cosmopolitan city with a world influence, and the development of health care faces unprecedented opportunities and challenges. Digital transformation is a global trend, so in the competitive marketplace, innovation and market sensitivity are required to maintain an absolute competitive advantage.

In terms of digital education, in 2019, the Chinese government stated that it would “capitalize on the strengths of online education and artificial intelligence to innovate education and learning, accelerate the development of a more open and flexible education system for everyone, and build a learning society.” The Shanghai Municipal Government attaches great importance to the development of a modernized and digitized education in the 13th Five-Year Plan and the 14th Five-Year Plan (Xinhua News, 2016).

According to an article by Yuan and Yang (2022), over the past decade, Shanghai has become a national leader in education, with a combination of top and bottom, and the level of digitization of education has been continuously improved. Shanghai has been at the forefront of the country in the digital transformation of education in terms of the construction of data centers, digital bases, digital teaching materials, e-schoolbags, and learning platforms, as well as the transformation of teaching methods, organizational structures, management processes, and governance models. The “School-to-School Network” in all districts of Shanghai covers all

education units in the district. Promote the construction of digital laboratories, innovation laboratories, virtual training environments, digital venues, and smart learning centers, and conduct research and demonstrations on smart education innovations. In conjunction with Shanghai's "Classroom in the Sky," a series of educational video resources have been built for all subjects, all academic levels, and high quality to meet the diversified needs of digital education. Shanghai was one of the first cities in China to explore the "e-schoolbag" and digital one-to-one projects, playing a forward-looking and leading role in the development of national education reform. The city of Shanghai has adopted the "same school period, same broadcast time, and same group of teachers" approach to minimize the impact of COVID-19 on education.

However, there are challenges in the development of digital education, such as the need to redefine the professional development of teachers, to redefine what really matters in learning, to redefine the "motivational divide" that is more difficult to overcome than the digital divide, and to redefine the mindset and landscape for systemic change, according to Yuan and Yang (2022). The future of education offers new opportunities for the creation of learning spaces that integrate the real and the virtual, learning spaces that are intellectually connected, learning spaces that are immersive and experiential, and learning spaces that are innovative and represented by STEAM education. At present, the world is set to witness the third major education reform, namely the digital transformation of education and the implementation of large-scale personalized education. Shanghai's efforts to strengthen the integration of data resources, focus on the integration of Internet innovation and education, and vigorously promote the digital transformation of education will definitely provide new impetus for the development of quality education.

3.3 Analyzing Digital Trends in Developed Countries - With a Focus on Digital Health and Digital Economy

Since 2022, countries around the world have been actively laying out innovations and applications in the field of digital health, driving long-term progress in digital health. Digital health has become the meeting point for all types of health-related hardware, such as smartphones, wearables, sensors, etc., and all types of services, such as telemedicine, remote monitoring, mobile health apps, etc.

In the wake of the COVID-19 outbreak, countries around the world have emphasized digital health and medical technology development, with policy support systems gradually improving. The National Drug Control Policy Strategy Report released by the US White House in 2022 mentions that agencies are encouraged to seek authorization from Congress to pay for reimbursement (Whitehouse, 2022). FDA (2022) revised the draft "Cybersecurity in Medical Devices: Quality System Considerations and Premarket Submission Content Guidance" 2022 to ensure the safety and effectiveness of medical devices. The European Union's Directorate-General for Health and Food Safety launched the European Health Data Space (EHDS) initiative in May 2022 to provide an innovative, advanced healthcare support system for EU residents and address cross-referencing of health data between EU member states (European Commission, 2022). The UK Government's Digital Strategy for the UK, updated in July 2022, sets out to continue to use digital and data-driven innovation to improve treatments, models of care, and the way health and care systems operate (UK Government, 2022).

Jabil Healthcare in the US, the world's largest provider of healthcare production solutions, partnered with Dimensional Research in 2020 to survey 420 healthcare professionals who have the power to make decisions about digital health product companies (SPD Silicon Valley Bank, 2020). The survey results in Figure 2 show that consumer demand is the main driver of digital health innovation, with over 92% of respondents agreeing with this view. The management of US healthcare companies can be more sensitive to shifting consumer demand to facilitate the development of digital health innovation. Digital health solutions in the US have been developed over a shorter period. Participants in the Jabil 2018 survey agreed that digital healthcare development was falling behind other industries. But the picture is now different, with two-thirds of participants reporting that their digital health product development and rollout cycle is less than two years, according to Figure 3, and 41% with a product cycle of less than a year and a half, up about 15 percentage points from 2018. The US digital health industry has become more competitive through good collaboration and knowledge input, with US digital health startups raising a total of $29.1 billion in 729 deals in 2021, with an average deal size of $39.9 million and total funding nearly double the amount raised in 2020, according to Rock Health's data graph. According to Figure 5, in 2021, the venture capital landscape in digital health heated up, with new funds and growth companies entering the market and a relatively healthy balance of new and repeat investors at 45% and 55%, respectively. Many startups saw an opportunity in these market conditions and closely followed through with multiple rounds of funding.

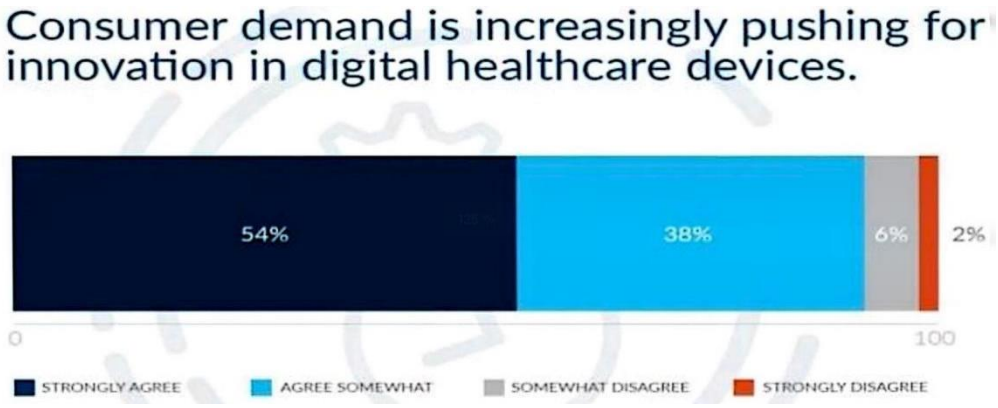

Figure 2: Consumer demand is increasingly pushing for innovation in digital healthcare devices. Source: (Google)

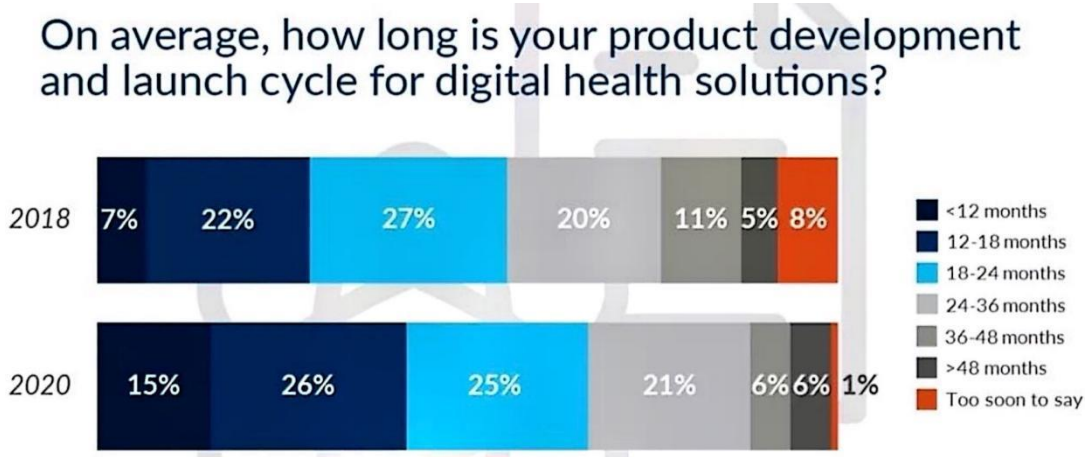

Figure 3: On average, how long is your product development and launch cycle for digital health solutions? Source: (Google)

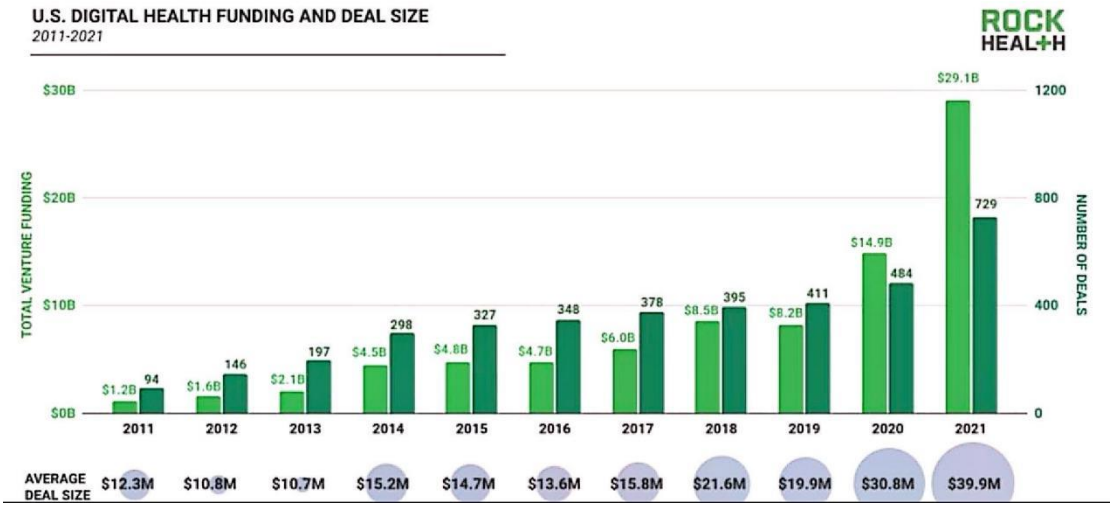

Figure 4: 2011-2021 US digital health funding and deal size Source: Rock Health (2023).

Figure 5: 2011-2021 Distribution of digital health investors
Source: Rock Health (2023).

But the digital health transformation in the US also faces many challenges and opportunities. Historically, the fragmentation of the US healthcare system has meant that it has been nearly impossible for participants to share data on things like coordination of care, billing, or research. So companies must either rebuild and manage their technology systems or adapt to existing EMR models. This is a huge challenge for industries in the early stages of transition. Direct-to-consumer (D2C) digital healthcare will reach a new peak in 2021, creating new opportunities for the growth of the digital health industry and medical technology in the U.S. The U.S. faces a critical shortage of talent for clinical positions in 2021. The new pneumonia epidemic has exacerbated career pressures in the healthcare industry, prompting more clinicians to consider leaving medicine while non-traditional healthcare employers begin to hire physicians and expand clinical talent. Since the end of the epidemic, more talented people have joined the digital healthcare industry, which has led to fast growth.

In terms of the digital economy, according to the White Paper on the Development of the Global Digital Economy, the US ranks first in the world in terms of size, with a digital economy of US$1.36 billion(China Academy of Information and Communication Research, 2021). However, developed countries are better able to cope with the risks of the digital economy than developing countries, with Germany, the UK, and the US dominating the national economies and accounting for over 60% of total GDP (China Academy of Information and Communication Research, 2021). The US relies on advanced Internet technologies to consolidate its competitiveness in the global digital economy, while the EU leads the construction of a unified global digital ecology with a sound digital governance system. Germany plays to its strengths in advanced manufacturing, while the UK's digital government building leads the development of the overall economic landscape. In the area of digital industry chain transformation, according to the 2021 US Executive Order on Supply Chains, the US has placed a high priority on reshaping the competitiveness of its supply chain with semiconductors at its core, requiring more frequent evaluation and testing of the semiconductor supply chain (CSIA, 2022). In 2021, the EU will launch a plan to diversify its industry chain, addressing dependence on other countries in six areas, including semiconductors, raw materials, and pharmaceutical materials. In terms of digital business models and governance, Germany set up a program to encourage the transformation of small and medium-sized enterprises (SMEs) as early as 2014 to help them improve their digital business processes and increase their operational efficiency. It also builds digital platforms for SMEs to improve the efficiency of their services. In its Digital Strategy 2025, the German government has allocated €1 billion to support the transformation of SMEs and encourage the enhancement of technologies such as big data, cloud computing, and artificial intelligence for commercialization models (Digital Transformation, 2020).

3.4 Analysis of the Opportunities and Challenges Facing the Development of China's Digital Economy Based on International Experience and Inspiration

In the future, China's digital development cannot be achieved without government policy guidance and supervision, international experience to draw on, and forward-looking governance models. China is the world's largest country in terms of population and has a huge digital user base, which brings a broad market for digital development and promotes the optimization of industrial structures and business models. China's information technology infrastructure is constantly improving, and the network, cloud computing, data centers, and other infrastructure needed for digital development are already relatively mature. Chinese consumers are upgrading their consumption needs from traditional consumption to digital consumption, which has created market demand for digital development. According to the digital transformation revelation in the US, consumer demand is the main driver for innovation. China has the world's leading technological innovation capabilities in areas such as artificial intelligence and 5G. These technological innovations will drive digital development and, at the same time, can attract more domestic and foreign investors, thus boosting digital economic growth.

However, as the digitalization process accelerates, privacy and security issues become increasingly prominent, which requires improving relevant laws and regulations, strengthening personal privacy protection, and creating a favorable online environment. The digital sector requires a large number of highly qualified personnel, and China's digital development may face the challenge of a shortage of talent, with a focus on the fair and reasonable allocation of digital education resources. Digital development requires continuous upgrading of industrial structures, and the digital transformation of traditional industries requires significant investment and technical support. China lacks the entrepreneurial spirit to take risks and take investment risks compared to the US. China's digital development still has a certain digital divide between urban and rural areas and regions, and it needs to make more efforts to promote digital infrastructure and digital literacy so that the digital dividend can benefit all people more.

4. Findings

A review of the literature reveals that new areas of digital health, such as telehealth and online services, are facilitating the formation of new business models and leading to the convergence of innovation in other sectors. Personalized healthcare delivery systems are being refined, leading to the creation of personalized healthcare products. This will increase consumer satisfaction and create a loyal customer base while also attracting more investors and expanding the market to drive China's economic growth. Digital education integrates quality resources to better promote balanced and equal development of education. Digital education enhances the teaching and learning environment and improves the traditional teaching and learning model, especially after the COVID-19 online education is more mature. The government leads business transformation and strengthens the construction of more open digital innovation platforms. Technological innovation can attract more customers and improve the competitiveness of China's industry to promote the upgrading of the industrial structure and thus contribute to rapid GDP growth. Coordinating the development of different industries, breaking down industry constraints, and integrating quality resources. Leveraging e-commerce technology to drive the development of traditional industries and agriculture by integrating online and offline development, improving efficiency and quality, thereby improving financial performance and facilitating organizational change. Digital governance facilitates cross-sectoral regulation and provides efficient and convenient services for business development, contributing to business efficiency and economic growth.

According to the analysis of Shanghai and Guangdong, the national government attaches great importance to the transformation and development of the digital health industry and areas such as medical technology, digital education, and the digital economy. In the area of digital healthcare, digital technology has brought greater convenience and efficiency to the healthcare industry while improving the patient experience and quality of care. The impact of COVID-19 has highlighted the importance of public health and increased public awareness of healthcare. To avoid cross-contamination, healthcare organizations have accelerated their digital transformation. Hospitals are using telemedicine and online services to provide more effective, convenient, and safe healthcare, which has also increased the competitiveness of healthcare institutions and facilitated the emergence of new technologies in healthcare. In the field of digital education, digital technologies are bringing new models and ways of teaching and learning to the education sector, as well as providing more learning opportunities and resources for students and teachers. Rectifying the cyberspace environment and improving the digital literacy of teachers and students are key factors in digital transformation. In the area of the digital economy, digital technologies bring more opportunities and possibilities for industries while also facilitating the integration of traditional industries with the digital economy. In the area of digital governance, digital technology provides government departments with more data and information, making them more efficient and transparent.

Although China's digital development is relatively mature, it also faces many shortcomings. The uneven distribution of digital resources has created social inequities that are not conducive to citizens' enjoyment of a happy life and increased confidence in government. Cybersecurity needs to be improved, and strengthening citizens' digital literacy is also an urgent issue. Facing the problem of cyberbullying, how to build a healthy online environment, and promoting a new ecology of digital education development. Secondly, there is also a need to accelerate the transformation and upgrading of traditional industries and to strengthen the personalization of grassroots governance.

Digital development requires the joint efforts and support of the entire society. Insights based on the digital development experience of developed countries include the need to further improve the regulatory system and enhance the safety and effectiveness of digital medical devices. Plans for the digital space should be developed in line with national development models, and innovation and talent development should be strengthened. Participants should be flexible in responding to the financing environment, stimulating creativity, and fostering an entrepreneurial spirit that is willing to take risks and invest. Consumer demand is the driver of transformation and innovation in the digital industry. China has a long history of traditional healthcare models, and further steps need to be taken to broaden consumers' horizons and make new digital service models accessible to an increasing number of consumers. Digital development has also led to huge market demand and technological innovation, driving the optimization of industrial structures and business models and the growth of the digital economy.

5. Discussion

The impact of digital development on the Chinese economy has been significant, particularly in addressing the challenges of COVID-19. The application of digital technologies has contributed to productivity improvements and promoted the synergistic development of traditional and new industries.

Areas such as digital health and medical technology, digital education, and the digital economy are important directions for digital development, and developing these areas will bring a wide range of economic and social benefits.

The potential opportunities and challenges of digital development are intertwined. Active exploration and timely policy adjustments are needed in practice to promote the sustainable development of the digital economy. At the same time, there is also a need to focus on the social and human impacts of digital development and make appropriate adjustments and management.

While digital transformation can have significant positive effects, it also faces many challenges, such as the impact of traditional industry models and consumer attitudes, which require solutions to be continuously explored in practice.

Cybersecurity and personal privacy protection remain important issues in digital development. The government needs to strengthen regulation and legislation to ensure that digital development is carried out in a healthy and orderly manner.

6. Conclusion

In conclusion, increased digital development has had a positive impact on the Chinese economy. Digital health and medical technologies are playing an increasingly important role in China's healthcare sector, especially in the post-epidemic period. The development of these technologies will not only improve the efficiency and quality of healthcare services but will also provide a boost to China's economic development. The application of digital technologies can drive the development of production services, industrialization, and agriculture, breaking traditional time and space constraints and promoting resource sharing and information transparency. At the same time, digital transformation can also improve the business models, profitability, and financial performance of enterprises, as well as reduce the burden of government regulation. However, digital development also faces a number of challenges, such as cyber security issues, traditional industry models, international competitive pressures, information privacy issues, the digital divide, and the impact of consumer perceptions. Therefore, China needs to actively address the challenges in its digital transformation, draw on international experience and inspiration, improve its digital governance capabilities, and promote innovation and the upgrading of digital industries in order to achieve sustainable and stable economic development.

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