Challenges and Countermeasures for the Integration of Digital Village Construction and Modern Agriculture

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Abstract: *With the popularisation of modern information technology such as artificial intelligence, big data and cloud computing, on-demand production and even on-demand distribution have become possible, promoting the integrated development of urban and rural areas, the transformation of old and new dynamics, and the digital economy is flourishing. Based on the construction of rural information infrastructure, informatization, digitization and networking are important carriers to realize the digitization of rural industries, dataization of governance, informatization of services and wisdom of life, reconstruct the modern economic development form of rural areas and create a new model of rural governance informatization.*

Keywords: *Digital countryside; New business; Rural revitalisation; Industrial integration*

1. Introduction

At present, the new generation of information technology innovation is unprecedentedly active, constantly giving rise to new technologies, new products and new models, driving the global economic landscape and industrial patterns to change deeply, and the pace of integration and development of the digital economy and rural industries has accelerated significantly. The construction of digital countryside is an important strategic deployment based on the current situation of China's agricultural and rural development in the new era, and is not only a strategic direction for rural revitalization, but also an important element in building digital China. As the overall grasp of the "three rural areas" in the new era, the rural revitalization strategy is a global and historical task related to the comprehensive construction of a modern socialist country [1]. The integration of the digital economy with various industries has become a major proposition and trend of the times, and there is no modernization without informationization, and there is no modernization of the whole country without modernization of agriculture and rural areas. It is necessary to continuously iterate self-cognition, base on the actual situation of agriculture and rural areas, find the combination point of the network power strategy and rural revitalization strategy, and fully implement the digital rural strategy.

2. Presentation of the problem

With the rapid development of science and technology and modern information networks, the world has entered a new era of scientific and technological revolution and industrial revolution dominated by the digital economy, and the digital economy has become an important engine to drive economic growth. Since the 18th Party Congress, the Central Government has attached great importance to the construction of rural informatization, and as an important grip, the construction of digital countryside is driving and enhancing the development of agricultural and rural modernization as a whole, providing a strong impetus for rural economic and social development, becoming an important combination point for the implementation of digital China and rural revitalization strategy, and coordinating the rapid development of rural digital construction and services [2]. in September 2018, the Central Committee of the Communist Party of China and the State Council issued The Strategic Plan for the Revitalization of the Countryside (2018-2022) and pointed out that "the implementation of the rural revitalization strategy is an important foundation for building a modern economic system" and that it is necessary to "deepen the structural reform of the agricultural supply side and build a modern agricultural industrial system, production In May 2019, the General Office of the Central Committee of the Communist Party of China

and the State Council issued the "Outline of the Digital Countryside Development Strategy", which clearly states that "based on the national and agricultural conditions in the new era, we should take the digital countryside as an important aspect of the construction of digital China, accelerate the development of information technology, and drive and enhance the development of agricultural and rural modernisation as a whole "It will further liberate and develop digital productivity, focus on building a policy system for rural economic development that is knowledge-based, technological innovation and data-driven, focus on establishing a modern rural economic system with a higher level, better structure and better sustainability, focus on establishing a sensitive and efficient modern rural social governance system, and open up a new situation for integrated urban and rural development and modernisation. The new situation of integrated urban and rural development and modernisation.

At present, the new generation of information technology innovation is unprecedentedly active, continuously driving the continuous and in-depth development of new products, new models and new business models. In January 2018, the Central Committee of the Communist Party of China and the State Council issued the Opinions on the Implementation of Rural Revitalisation Strategy, which pointed out that China's urban and rural development is unbalanced and the rural development is inadequate, among which, the urban-rural digital divide is the most prominent. is the most prominent. While the construction of rural information infrastructure has been accelerated, the integration of online and offline modern agriculture has been accelerated, and the rural information service system has been improved, there are also problems such as the lack of top-level design, insufficient resource coordination, weak infrastructure and obvious regional differences [3] . The issue of digital divide has become a constraint in promoting rural revitalization through the construction of digital countryside, and there is an urgent need to further explore the huge potential of information technology in rural revitalization, so as to promote comprehensive upgrading of agriculture, comprehensive progress of rural areas and comprehensive development of farmers. It is worth noting that the digital countryside is not a replica of a smart city. We need to grasp the objective laws of agricultural and rural development in accordance with the actual development of China's countryside, adapt to local conditions and actively explore new models for the digital transformation and development of the countryside.

The construction of China's digital countryside is still at a relatively early stage, and there are still many challenges and uncertainties in promoting the revitalisation of the countryside and thus the transformation of rural modernisation with the construction of the digital countryside, mainly in the following aspects: First, there is a lack of an efficient guidance mechanism. Relevant data show that the penetration rate of the digital economy in agriculture accounted for only 8.2% of the added value of agriculture in 2019, far lower than the level of 19.5% in industry and 37.8% in service industry. Secondly, a reasonable input mechanism has yet to be formed. Third, a scientific evaluation mechanism has not been established. Fourthly, there is a serious lack of talent support capacity and the difference in the ability of urban and rural residents to make use of the Internet and modern information technology [4]. Fifth, the corresponding laws and regulations are not perfect, making it difficult to guarantee the timeliness of rural data information and break the data information "gap" between market players, and failing to establish data property rights and protection mechanisms, as well as circulation and trading mechanisms, making it difficult to realize the fair, efficient, reasonable and safe allocation of this new production factor of data.

3. Literature review of the current state of research within foreign countries

3.1. Current status of foreign research

The world's agricultural development has experienced the first green revolution represented by dwarf varieties, the second green revolution with genetic modification of plants and animals, and with the deep integration of modern information technology and agriculture, a third revolution in agriculture - the "digital revolution in agriculture" - is on the horizon. In early September 2016, more than 340 rural stakeholders gathered in Cork, Ireland, to launch the Cork Declaration 2.0 under the heading "Better Rural Life", which sets out the aspirations and desires of rural areas. Among the priorities to be addressed, the Cork Declaration 2.0 calls for policies to pay particular attention to overcoming the digital divide between rural and urban areas and to develop the potential offered by connectivity and digitisation in rural areas. The European Commission has set up a Working Committee on Smart Villages, which has developed a medium and long-term development strategy to promote smart villages with EU funds. The core focus is on bridging the digital divide between rural and urban areas through the innovative application of digital technologies and knowledge for the benefit of residents and businesses in rural

areas. Five main areas are addressed: firstly, improving the quality of life of people living in rural areas; secondly, improving the living standards of rural residents; thirdly, providing quality public services for rural residents; fourthly, making better use of various resources and reducing negative environmental impacts; and fifthly, providing new opportunities for rural value chains through model innovation.

The digitalisation and networking of infrastructure is a prerequisite for the development of the digital village, with broadband and computers in the home being its basic features. Infrastructure is the basis for realising the construction of a digital village. At present, with the fourth industrial revolution flourishing around the world, intelligence, networking and digitisation have become the main features of social development. Countries around the world generally take infrastructure construction as the foundation in the process of developing a digital economy. For example, in the United States, in the field of agriculture, an agriculture-related information service network supported by satellite networks, the Internet, the Internet of Things and remote sensing networks has been formed. As of 2019, almost all farmers in the UK have mobile phones, 82% of which have access to the Internet; almost all farms are equipped with computers, and more than half of them obtain their income through the Internet.

Agricultural data resources are an important reliance for scientific decision-making in agriculture, and reliance on data for decision-making has become a fundamental trend. Agricultural data resources are necessary for realising scientific decision-making in agriculture. Most developed countries have taken the construction of agricultural databases as a basic research project for the development of agricultural informatization and decision-making, laying down the basic data support for scientific decision-making, agricultural production and operation, and government macro-control. For example, the US Department of Agriculture has established a national crop variety resource information management system, which can provide information on 600,000 plant samples; the Commonwealth Agricultural Bureau has established an agricultural database containing animal science, crop cultivation, agricultural growth environment and food nutrition, with more than 350,000 updated data annually, laying a solid foundation for agricultural scientific research and decision-making in the UK.

Production informatization is a sign of agricultural modernization, and the development trend of agricultural production towards digitization, networking and intelligence is obvious. Information technology is the main driving force behind the construction of the digital countryside. The in-depth integration and development of information technology and agriculture has gradually realised the scale, organisation and standardisation of agricultural production and operation, and accelerated the pace of modern agricultural development. Developed countries such as Europe and the United States have explored digital technology to promote the integrated development of urban and rural areas, while countries such as Japan and South Korea have explored digital technology to promote the reconfiguration and construction of rural industries, and thus promote the integrated development of urban and rural areas [5]. At present, smart agriculture with information technology, networking, digitisation and intelligence as its main features is developing rapidly around the world. Japan, the UK, the US, Australia and other countries have built unmanned farms one after another, realising efficient operation of agricultural production and greatly improving agricultural productivity. Digitisation is an important means to ensure the green development of agriculture, and precise application of medicine and fertiliser is an inevitable direction. Green development is an important goal of digital village construction. Most developed countries have adopted "green and sustainable development" as their main concept for agricultural digital development, with Australia being the fastest growing country in terms of green agriculture, with 19% of the world's total area under ecological agriculture [6]. Australia's agricultural growth environment is intelligently monitored and supported by an agricultural decision support system to ensure green and efficient production. In addition, New Zealand places special emphasis on soil conservation and greening, using computer simulations to plan for crops and apply fertiliser in small quantities to prevent soil degradation.

3.2. Current status of domestic research

As the overall grasp of the "three rural areas" in the new era, the rural revitalization strategy is a global and historical task related to the comprehensive construction of a modern socialist country. In 2018, the Opinions of the Central Committee of the Communist Party of China and the State Council on the Implementation of the Rural Revitalisation Strategy and the Strategic Plan for Rural Revitalisation (2018-2022) proposed to implement the digital countryside strategy and vigorously develop digital agriculture. In January 2019, the No. 1 document of the Central Government, "Several Opinions of the Central Committee of the Communist Party of China and the State Council on Adhering to the Priority Development of Agriculture and Rural Areas and Doing a Good Job in the "Three Rural Areas"" proposed the implementation of the digital countryside strategy. In December 2019, the "China Digital

Countryside Development Report (2019)", which is guided by the Information Development Bureau of the Central Internet Information Office and the Department of Marketing and Informatization of the Ministry of Agriculture and Rural Affairs and compiled by the Expert Advisory Committee on Agricultural Rural Informatization, was released at the 2019 Digital In January 2020, the Central Government's No. 1 document "Opinions of the Central Committee of the Communist Party of China and the State Council on Grasping the Key Work in the Field of "Three Rural Areas" to Ensure the Achievement of Comprehensive Prosperity on Schedule" proposed to carry out national digital countryside pilot projects [7]. In May 2020, the Central Internet Information Office, the Ministry of Agriculture and Rural Affairs, the National Development and Reform Commission and the Ministry of Industry and Information Technology jointly issued the "Notice on the Issuance of the Key Points of Digital Rural Development Work in 2020", which provides for the development of digital rural areas. In July 2020, the Central Internet Information Office, the Ministry of Agriculture and Rural Affairs, the National Development and Reform Commission, the Ministry of Industry and Information Technology, the Ministry of Science and Technology, the General Administration of Market Supervision and the State Council Poverty Alleviation Office issued the Notice on National Digital Village Pilot Work, deploying the national digital village pilot work. Rural pilot work.

From the "Strategic Plan for Rural Revitalisation (2018-2022)" proposed in 2018 to the "Outline of Digital Rural Development Strategy" released in 2019, it can be seen that our government has completed the top-level design at the national policy level for building a digital rural strategy that meets our national conditions, and the next step will be to launch a county-wide overall pilot demonstration by the next step will be to explore the implementation of specific projects on the ground. The Opinions of the Central Committee of the Communist Party of China (CPC) and the State Council on the Key Work in the "Three Rural Areas" to Ensure the Achievement of Comprehensive Well-being on Schedule clearly states that the construction of modern agricultural facilities should be strengthened [8]. In 2020, China issued the Outline of the Digital Countryside Development Strategy, which clearly states that "efforts should be made to give full play to the diffusion effect of information technology innovation, the overflow effect of information and knowledge, and the release of digital technology. In 2020, China issued the Outline of the Digital Countryside Development Strategy, clearly stating that "we should focus on the diffusion effect of information technology innovation, the spillover effect of information and knowledge, and the universal effect of digital technology release to accelerate the modernization of agriculture and rural areas". The Digital Agriculture and Rural Development Plan (2019-2025) proposes that "the current and 14th Five-Year Plan period is an important strategic opportunity period for promoting digitalisation in agriculture and rural areas, and we must respond to the trend of the times and grasp the opportunities for development. ". The Fifth Plenary Session of the 19th Central Committee of the Communist Party of China (CPC) emphasized the promotion of the deep integration of the digital economy and the real economy, as well as the promotion of the integrated development of rural industries and the enrichment of the rural economy [9].

In May 2020, the Central Internet Information Office, the Ministry of Agriculture and Rural Development and four other departments jointly issued the "Key Points for the Development of Digital Countryside in 2020" and called for "promoting the construction of new infrastructure in the countryside" and "promoting the development of digital economy in the countryside", so as to promote the modernisation of agriculture and rural areas with information technology and continuously stimulate the endogenous power and great potential of rural development.   The Fifth Plenary Session of the 19th CPC Central Committee emphasized that "priority should be given to developing agriculture and rural areas and promoting the revitalisation of the countryside in a comprehensive manner", and that the road to revitalisation of the countryside should be pursued through socialism with Chinese characteristics. Wang Guoping, Director of the Hangzhou Urbanism Research Council, gave a keynote speech on "Adhering to the Ten Comprehensive Measures" and "Promoting Integrated Urban-Rural Development". He pointed out that the first step in promoting the construction of digital countryside is to achieve "five integrations", i.e. to combine with the construction of smart cities, new infrastructure, future communities, special towns and the development of online economy [11]. The role of digitalization as a basic support in promoting the modernization of rural governance system and governance capacity, so as to make agriculture a more prosperous industry, farmers a more attractive occupation, and the countryside a beautiful home where people can live and work more peacefully. According to Yi Hongmei (2020), without the digitisation of industries and basic data, the "digital big screen" cannot stand. "In particular, the construction of the digital countryside should be guided by the development of the agricultural industry and farmers' needs, and the modernisation of agriculture and rural areas should be promoted through the combined application of advanced agricultural technology and digital technology."

Zheng Xinli, former Deputy Director of the Policy Research Office of the Central Committee of the

Communist Party of China and Executive Vice Chairman of the China Association for the Promotion of Urbanisation, gave a keynote speech on "Digital Economy as a Way to Achieve Leapfrog Development in Agriculture and Rural Areas". He pointed out that realising rural revitalisation is an important strategic goal for economic and social development in the new era, and that rural revitalisation will become the biggest new driving force to stimulate economic growth, as well as the fifth major structural adjustment task faced since the reform and opening up. He believes that the digital economy brings new opportunities for agricultural and rural development, the construction of 5G will enable agricultural and rural development to cross over to a new big platform, the development of e-commerce will effectively solve the problem of difficulty in selling agricultural products, and the modernisation of circulation and sales will force the modernisation, scaling and standardisation of agriculture [12]. Qu Dongyu, Vice Minister of the Ministry of Agriculture and Rural Affairs, said that the construction of the digital countryside should be promoted to drive and enhance the agricultural industry chain, supply chain and value chain with the data chain, support the transformation, upgrading and high-quality development of agriculture, establish an effective docking mechanism between farmers' production and citizens' consumption, promote the organic connection between small farmers and modern agricultural development, and walk out a road of agricultural and rural modernization with Chinese characteristics and data driven.

According to Chen Tan, Dean of the School of Public Administration at Guangzhou University, under the new technological revolution, the construction of digital concepts has not only driven human society into the era of interconnectedness, but also given rise to the concept of a mutually reinforcing social community, with the traditional dualistic urban-rural relationship diminishing. With the ubiquitous application of information technology, digital technology is becoming an important driving force in breaking the "urban-rural divide, one country, two policies" and promoting the integrated development of urban and rural areas. The digitalization can accelerate the flow and transformation of capital, talent, technology and public service elements in the economic, social and ecological systems between urban and rural areas, thus realizing the sustainable mutual promotion of urban and rural areas and ultimately laying the foundation for the construction of a new rural production model in which digital urban and rural areas complement and promote each other.

4. Realistic challenges facing the construction of China's digital countryside

4.1. Insufficient backbone for digital village development and lack of planning for overall construction

Digitalisation is a booster for accelerating the integrated development of urban and rural areas. It is an inevitable trend to co-ordinate the construction of smart cities and digital villages, and the integrated development of urban and rural areas is an inevitable trend for the development of digital villages. By synergistically sharing network facilities, digital resources and technical systems, information and digital technologies have greatly promoted the accelerated flow and transformation of capital, talent and technology flows in urban and rural areas. As early as in the Opinions of the State Council of the Central Committee of the Communist Party of China on the Implementation of Rural Revitalisation Strategy, the requirement of "implementing the digital rural strategy, making good overall planning and design, and accelerating the pace of broadband network and fourth-generation mobile communication network coverage in rural areas" was clearly put forward [13]. However, in the process of digital village construction, some regions lack thorough research and understanding of the areas under their jurisdiction, and do not fully explore local characteristics in accordance with local conditions, and do not form a digital village development model with local characteristics and development advantages.

4.2. Lack of data access mechanisms and highly uneven regional development

At present, almost all cities and districts (counties) do not have mature access to grassroots data and lack a digital rural integrated services big data platform, making it difficult for grassroots data to be reported in a timely and accurate manner; a unified grassroots information sharing mechanism has not yet been built, making the division of tasks and coordination more difficult. There is a large gap between urban and rural development, and it is extremely challenging to lead rural areas with urban areas. The development of digital villages is relatively slow compared to that of smart cities, and the digital divide between urban and rural areas is difficult to eliminate effectively in the short term. In addition, the digital village construction itself has a weak foundation and lacks a large number of professional talents and construction funds, resulting in many challenges to the synergistic development of smart city and digital village construction.

4.3. Inadequate scale of agricultural production and low demand for digital production

At present, most of the agricultural land is mostly used by scattered households and has not been planted on a large scale, and even individual pieces of land have been turned into wasteland due to abandonment. In addition, the young and strong agricultural labour force has gone out to work, and those left behind to grow are mainly middle-aged and elderly, with limited ability to accept new technologies such as information technology and digitalization [14]. The supply of scientific and technological innovation is insufficient, and industrial development is yet to be improved. At present, there are relatively few enterprises engaged in information services and information product development related to the "three rural areas", and it is difficult to implement the industry-university-research model, and the information service system suitable for the characteristics of the "three rural areas" is not yet complete. There is a lack of special sensors for agriculture, the accuracy of animal and plant models and intelligent decision-making is low, and the adaptability of agricultural robots and intelligent agricultural equipment is poor. Compared with urban areas and other fields, the application of digital research in agriculture and rural areas is obviously lagging behind.

5. Measures to enhance the integration and development of digital countryside construction and modern agriculture

5.1. Strengthening rural information infrastructure

Rural information infrastructure is the material basis for the implementation of the digital countryside strategy. On the one hand, better construction and improvement of rural information infrastructure is the only way to better develop the digital economy; on the other hand, further improvement of rural information infrastructure can also accelerate the use of new-generation technologies such as big data, cloud computing and blockchain in agricultural production and management. Specifically, we need to strengthen the construction of rural information infrastructure by upgrading rural network facilities, improving the supply of information terminals and services, and accelerating the digital transformation of rural infrastructure, and on this basis, establish an agricultural Internet of Things platform to collect and transmit data, process and analyse data in a timely and accurate manner, and enhance the standardisation, intelligence and precision of agricultural production. [14] At the same time, a boutique network serving the vast rural areas and a mobile network covering rural areas will be built to promote better integration of online and offline transactions.

Promote the construction of digital villages by category. To guide villages in the category of agglomeration and upgrading to deepen the application of network information technology and cultivate new rural businesses. Guiding villages in the category of suburban integration to develop a digital economy and continuously meet the consumption needs of urban and rural residents. Guiding villages in the category of characteristic conservation to explore unique resources and build villages with Internet characteristics. Guiding villages in the category of relocation and annexation to improve network facilities and information services to avoid the formation of a new "digital divide".

Vigorously promote the scale of agricultural production and strive to enhance the digitalisation of agricultural production. According to the characteristics and advantages of regional development, vigorously support family farms, farmers' cooperatives and large farmers in planting, implement appropriate and moderate transfer of land resources, and improve the organisation and intensification of agricultural production [15]. Continuously strengthen the supply of agricultural science and technology innovation, promote the deep integration of new-generation information technology with the whole process of agricultural production, promote the digitisation of agricultural production, actively create scientific and technological agriculture, precision agriculture and smart agriculture, and improve the agricultural land output rate, labour productivity and resource utilisation rate.

5.2. To play an important role in improving the rural industrial system by building a digital village

Coordinate the development of digital villages and smart cities. Strengthen integrated design, synchronized implementation, synergy and integration innovation, promote the digitalization, networking and intelligent development of urban and rural production, living and ecological space, and accelerate the formation of a digital urban and rural integration development pattern of common construction and sharing, interconnection and interoperability, each with its own characteristics and interplay. Encourage small towns with conditions to plan ahead, develop "Internet+" characteristic

leading industries according to local conditions, create "Internet+" industrial ecosystem of sensory experience, intelligent application, element gathering and integration and innovation, and radiate and drive rural entrepreneurship and innovation.

Agricultural Internet of Things can improve the efficiency and quality of agricultural production; rural e-commerce can enrich the rural circulation service system and help to achieve the integration of online and offline channels; the deep integration of the Internet and special agriculture can also promote the flourishing of new industries and new business models in the countryside. In this regard, it is necessary to further strengthen the interconnection of agriculture and business, and adopt various methods such as signing agricultural orders, direct harvesting and direct marketing, as well as investment and cooperation to promote the docking of agricultural business entities and agricultural products circulation enterprises, so as to build an agricultural products industry chain that closely integrates production, supply and marketing [16].

Promote the development of "Star Creation World" in rural areas, strengthen services to attract university students and rich rural experts to better innovate and create in the vast world of rural areas; develop shared agriculture, gather information on scattered and fragmented consumer needs, form a scale, and achieve accurate matching and docking with the supply side; build a shared information platform to improve The development of a shared information platform will improve the utilisation rate of production materials, while reducing delivery and communication costs. All in all, we should give full play to the important role of digital countryside construction in fostering new industries and new business models in rural areas, so as to inject strong impetus into promoting rural revitalisation.

5.3. Digital village development as an important tool for rural governance

Effective governance is the foundation for the revitalization of the countryside. Rural governance involves a wide range of areas, a large workload and complicated affairs. It is necessary to realize a combination of autonomy, rule of law and moral governance through the construction of digital villages. Specifically, to improve the level of refinement and modernization of comprehensive rural social governance. We will promote the standardisation of village committees, carry out online organisational support and cultivate the public spirit of villagers. We will also promote the extension of the "Internet + community" to rural areas, improve the level of information technology for comprehensive services at the village level, and vigorously promote information technology for rural construction and planning management. Accelerate the implementation of the rural "Snow Light Project" and deepen the construction of safe villages [17]. Accelerate the promotion of "Internet + public legal services" and build a village under the rule of law. Relying on the nationwide integrated online government services platform, the Government has accelerated the promotion of "the most run once", "no meeting approval" and other reform models to promote government services online, immediately, less run quickly, and improve the convenience of the public.

Deepening rural "Internet + government" services, opening up data interoperability at the city, county, township and village levels, strengthening the online approval service system, and realising that farmers can "do things without going to the village" and "run zero errands "The Internet is a tool to help farmers to do their business without going to the village. Promote the extension of "Internet+community" to rural areas, build an "Internet+community" comprehensive information platform, vigorously promote the informatization of rural construction and planning management, and improve the informatization of village-level comprehensive services. Improve the rural grid management platform to ensure that "major issues are linked to the whole network and minor issues are resolved in one grid". In-depth promotion of the construction of the Internet + public legal service system, improve the online and offline public legal service mechanism, and open up new channels for online and offline services. Integrating public legal service resources, linking judicial organs, legal workers and farmers through public legal service platforms, and continuously improving the professionalism and personalization of rural public legal services and the quality of rural public legal services.

5.4. Strengthening the supply of agricultural and rural science and technology innovation

Promote the intelligence of agricultural equipment. Promote the combination of a new generation of information technology and agricultural equipment manufacturing, and develop and promote intelligent agricultural equipment. Encourage the development of the industrial Internet in the agricultural equipment industry, to enhance the level of agricultural equipment intelligence. Promote the integration of information technology with agricultural equipment, agricultural machinery operation services and

agricultural machinery management applications. Optimise agricultural science and technology information services. Build a number of new farmers and new technology entrepreneurship and innovation centres, and promote cooperation between industry, academia, research and use. Establish a network service system for the transformation of agricultural science and technology achievements and support the construction of an online agricultural technology trading market. Improve the agricultural science and technology information service platform and encourage technical experts to solve agricultural production problems for farmers online.

Accelerate the development of comprehensive and deep integration of emerging technologies such as cloud computing, big data, Internet of Things and artificial intelligence with the planting, seeding, animal husbandry, fishery and agricultural products processing industries to create smart agriculture, technological agriculture and branded agriculture [18]. We will actively develop new rural businesses and create agriculture for adoption, experience agriculture, tourism agriculture and urban agriculture based on digital agriculture to increase the added value of agriculture. Leveraging on the "Internet+", we will further strengthen online and offline sales channels, establish intelligent logistics and distribution stations, deepen the demonstration role of e-commerce in villages, and form e-commerce brands for special agricultural products. Accelerate the level of agricultural equipment intelligence, promote the deep integration of new generation information technology and agricultural equipment, and enhance the level of agricultural equipment intelligence.

Vigorously develop the agricultural and rural informatization industry and enhance the new momentum of digital countryside development. Vigorously support leading rural informatization enterprises, strengthen their informatization, digitalization and network operation capabilities, and encourage the development and growth of precision agriculture, agricultural product quality testing, precision livestock, agricultural drones, driverless tractors and other fields to provide strong industrial support for the development of digital agriculture. Introduce relevant subsidy policies for enterprise products related to digital agriculture and digital countryside, and establish a special fund for digital agriculture and digital countryside to nurture and grow China's agricultural and rural informatization industry.

6. Conclusions and Insights

The significance of the construction of the digital countryside goes far beyond this. It is also a booster for solving the shortcomings of rural finance, building a deep rural governance system and improving the capacity and efficiency of the agricultural industry. Therefore, the digital transformation of agriculture and rural areas is undoubtedly of great significance to the times. The regions selected for the national digital countryside pilot list will carry out pilot construction from the overall planning and design of the digital countryside, improve the new generation of information infrastructure in the countryside, explore new modes of digital economy in the countryside, explore new modes of digital governance in the countryside, improve the information service system for the "three rural areas", improve the integration and sharing mechanism of facilities and resources, and explore the sustainable development mechanism of the digital countryside. This means that digitization and informatization have brought about a new generation of information infrastructure for social development. This means that digitalization and informatization have brought infinite possibilities for social development, and the "digital countryside" can make rural revitalization "wise" and "quality".

Based on the national and agricultural conditions in the new era, we should take the digital countryside as an important aspect of the construction of digital China, accelerate the development of information technology, and drive and enhance the development of agricultural and rural modernization as a whole. We will further liberate and develop digital productivity, focus on building a policy system for rural economic development that integrates knowledge updating, technological innovation and data drive, focus on building a modernized economic system for the countryside with a higher level, better structure and better sustainability, and focus on building a sensitive and efficient modern rural social governance system to open up a new situation of integrated urban-rural development and modernization.

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