

Digital Rural Construction under the Background of New Quality Productivity Increase in Kinetic Energy and the Efficiency Optimization

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Abstract: With the ubiquitous application of information technology,digital technology has been transformed into new production factors and governance tools, and is becoming an important driving force to promote the integration of urban and rural development. At present, Chinas digital rural construction has been accelerated in an all-round way, digital technology is deeply integrated with various fields of agricultural and rural modernization, information, talent, technology, capital and other factors are accelerating to rural areas, and a new rural digital economy and digital governance system has gradually taken shape. However, the digitalization process in the field of agricultural production is relatively backward, the digital divide between urban and rural areas, and the serious shortage of talent support capacity have become the biggest constraints in the construction of digital countryside. At present, it is urgent to realize the digitalization of rural industry, governance data, service informatization and life wisdom through the construction of rural information infrastructure, with informatization, digitalization and network as the important carrier, reconstruct the modern development form of rural economy, and create a new model of rural governance informatization.

Keywords: New quality productivity; Rural revitalization; Digital countryside; Digital production

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1. Introduction

At present, the innovation of the new generation of information technology is unprecedentedly active, constantly promoting new technologies, new products and new models, and promoting the deep reform of the global economic pattern and industrial form.The pace of the integrated development of digital economy and rural industry has been significantly accelerated,which also provides unprecedented opportunities for promoting rural revitalization in the digital economy era.Digital countryside is an important strategic deployment made based on the current situation of agricultural and rural development in the new era of China.We have further liberated and developed digital productive forces, promoted integrated development between urban and rural areas and the replacement of old growth drivers with new ones, and digital rural development has become an important node in digital China and rural revitalization.Current China digital rural construction"digital divide" between urban and rural areas, suitable for the characteristics of "three rural" information service system is not sound, rural digital talent lack of such real problems is still outstanding, lead to digital rural construction to promote rural revitalization and realize rural modernization transformation is still facing many challenges and uncertainty.How to effectively enhance the development of new quality productive forces with new growth drivers and promote the efficient implementation of Chinas rural revitalization strategy is a problem that needs continuous exploration and deepening understanding.

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2. The Realistic Demand of Digital Rural Construction under the Background of New Quality Productivity

Under the condition of the new technological revolution, the construction of the digital concept not only drives the human society into the era of the Internet of everything, but also gives birth to the social community concept of mutual promotion and mutual integration. The traditional dual division between urban and rural relations is declining. Digital can be through the Internet dividend sharing, facilities hardware coordination and technology diffusion reverse propulsion capital, talent, science and technology, public service elements between urban and rural economic, social and ecological system to accelerate the circulation and transformation, so as to realize the sustainable of the urban and rural areas each promote, eventually to build digital urban and rural complementary mutually promote the new rural production mode lay the foundation. The integration and development of digital economy and all walks of life has become the trend of The Times, information and modernization, agricultural and rural modernization and the modernization of the country have been inseparable. As the overall focus of the work of agriculture, rural areas and farmers in the new era, the rural vitalization strategy is an overall and historic task for building a modern socialist country in an all-round way. Digital rural construction is based on algorithms, models, digital platforms, digital terminals and other equipment, realizing the concrete display of digital economy, agricultural economy and rural governance, and is an important strategic deployment made based on the current situation of agricultural and rural development in the new era of China.^[1]Realizing rural revitalization is an important strategic goal of economic and social development in the new era, and rural revitalization will become stimulating economic growthThe biggest new growth drivers will also be the fifth major structural adjustment we face since reform and opening up. With "digital economy + rural development" as the core content of digital rural development strategy for rural revitalization provides a new endogenous power, vigorously integrate various disposable resources, fully tap the potential of digital economy, with big data, data, data, block chain technology as the foundation, around the needs of agriculture and rural modernization, conduct a large-scale rural "digital revolution", promote rural production, ecology, life comprehensive transformation, make digital rural construction rural revitalization "powerful engine". The Chinese government has completed the top-level design at the national policy level to build a digital rural strategy in line with Chinas national conditions. In the next step is to explore the implementation of specific projects through the overall pilot demonstration at the county level. Digital economy brings new opportunities for agricultural and rural development, promoting digital rural construction, to promote data chain and agricultural industry chain, supply chain and value chain, support the transformation and upgrading of agriculture and high quality development, establish the effective docking of farmers production and citizen consumption mechanism, promote small farmers and modern agricultural development organic link, out of a Chinese characteristics, data-driven modernization of agriculture and rural areas

The proposal of new quality productivity requires rural communities to focus on strategic emerging industries, and combine them with traditional industries, improve the industrial digital infrastructure, and improve the efficiency of industrial development. We will vigorously develop new quality productive forces to provide new ideas for how China can further deepen the rural revitalization strategy and solve the problem of unbalanced and inadequate development in the new era. Rural development of new quality productivity through the innovation of labor elements with agricultural science and technology innovation breakthrough, and agricultural industry depth fusion upgrade, but limited by agricultural technology, the gap between urban and rural areas, rural hollowing out and realistic problems such as rural management system mechanism, at present new quality productivity to form power important thrust of rural revitalization. The investment of the national government is an important source of funds for the rural infrastructure construction in China. The state has made continuous efforts in increasing the investment in important rural areas such as transportation and information. According to the needs of the development of modern digital agriculture,it provides support for the construction of digital infrastructure in rural areas, especially in less developed areas, and establishes and improves the production and processing bases

of major agricultural products in rural areas and other pillar industrial facilities in combination with local specific conditions. At the same time, the participation and response of social capital also plays a positive role in alleviating the lack of governments financial investment and expanding investment channels. A new generation of information technology innovation and integration unprecedented active, promote agriculture rural industry new industry new mode, under the domestic and international binary new development pattern, rural areas as Chinas economic and social development strategy of digital deep key position increasingly prominent, inject huge energy for digital rural construction, bring digital new history of rural construction machine

At present, the construction of rural information infrastructure in China is accelerated, modern agriculture integrating online and offline is accelerated, and the rural information service system is accelerated. At the same time, there are also problems such as lack of top-level design, lack of resource planning, weak infrastructure and obvious regional differences. It is urgent to further explore the huge potential of informatization in rural revitalization, and promote the comprehensive upgrading of agriculture, the comprehensive progress of rural areas and the comprehensive development of farmers. It is worth noting that digital countryside is not a copy of smart city. We should follow the actual development of Chinese rural areas, deeply grasp the objective laws of agricultural and rural development, take measures according to local conditions, and actively explore new models of rural digital transformation and development.^[2] It is necessary to constantly iterate the self-cognition, base on the reality of agriculture and rural areas, find the combination point of the network power strategy and the rural revitalization strategy, and fully implement the digital rural strategy. In general, the national digital rural construction is still in the stage of continuous exploration. To accelerate the development of digital rural areas and take this as a breakthrough to activate new drivers of rural revitalization, we need not only strategic planning, but also targeted measures and appropriate efforts. At the same time, we will accelerate the formulation of guiding practice models and relatively clear standards and norms, so as to solve the doubts of local construction, and simultaneously promote the construction of digital rural pilot and standard system, so as to provide local digital rural constructionjoin

3. Chinas Digital Rural Construction Faces Realistic Risks and Challenges

(1) The overall construction is lack of planning and the digital rural development force is insufficient

Digitization is a booster to accelerate the integrated development of urban and rural areas. It is an inevitable trend to coordinate the construction of smart city and digital countryside, and the integrated development of urban and rural areas is an inevitable trend of digital rural development. Digital rural construction involves production and operation in many other fields, rural governance, public management and service. The implementation of digital rural strategy and overall planning and design are the primary task. If the construction direction is not clear, it is easy to lead to problems such as good image, less connotation, more view and less use in the construction. However, in the process of digital rural construction, some areas lack of thorough research and understanding of the areas under their jurisdiction, lack of efficient guidance mechanism, have not yet formed a reasonable investment mechanism, do not adapt measures to local conditions, fully explore local characteristics, and do not form a digital rural development model with local characteristics and development advantages. The relative weakness of digital infrastructure and the unstable foundation of digital rural construction, the lack of digital rural construction caused by the relative lag of agricultural production and circulation, and the pending improvement of industrial development caused by the insufficient supply of scientific and technological innovation are more prominent. It is necessary to strengthen the comprehensive connection of all levels of planning, combined with the 14th Five-Year Plan and the long-term goals of 2035, and on the basis of the existing plans and documents related to digital agricultural and rural development, consider formulating the implementation plan and implementation rules of digital rural construction. To achieve the effective connection with the top-level design and the development of different regions, to ensure the scientific digital rural planning and operational

(2) Urban and rural development is extremely unbalanced and lack of data acquisition mechanism

In recent years, Chinas telecom universal service pilot is increasing, and the construction of fiber broadband and other information infrastructure in rural areas continues to increase. However, compared with cities, there is a lack of data access, there is a big gap between infrastructure construction and cities, and it is facing the problem of upgrading. Compared with the construction of smart cities, the development of digital rural construction is relatively slow, and the digital divide between urban and rural areas cannot be effectively eliminated in the short term. At present, almost all cities, districts (counties) have no mature way to obtain grassroots data and lack digital rural comprehensive service big data platform, it is difficult to timely and accurately report grassroots data; a unified grassroots information co-construction and sharing mechanism has not been established, and task division and coordination are difficult.^[3] In addition, the foundation of digital rural construction itself is weak, and the lack of a large number of professional talents and construction funds exists, leading to the coordinated development of smart city and the construction of digital countryside faces many challenges. At the same time, the corresponding laws and regulations are not perfect, it is difficult to guarantee the timeliness of rural data information and break the "gap" between market subject data information, and failed to establish data property rights and protection mechanism, circulation and transaction mechanism, it is difficult to realize the fair, efficient, reasonable and safe allocation of data as a new production factor.

(3) Insufficient scale of agricultural production and lack of standards for digital production

The digitization of production can further realize the improvement of the production and operation mode by combining the existing technology with the digital means. However, compared with the service industry, industry and other fields, the digital research and application in the agricultural field obviously lag behind, such as the lack of special agricultural sensors, the poor adaptability of agricultural robots and intelligent agricultural machinery and equipment, and the research and development of key core technologies are also obviously insufficient. At present, most of the agricultural land is mostly retail investors, not formed large-scale planting, and even individual land into wasteland because of abandoned seed. Lack of agricultural sensors, low accuracy of animal and plant models and intelligent decision making, poor adaptability of agricultural robots and intelligent agricultural machinery equipment. Compared with urban areas and other fields, the application of digital research in agriculture and rural areas obviously lags behind. At the same time, in recent years, the construction of digital agriculture standard system in China has made some achievements, and a number of national and industrial standards have been issued, providing important support for promoting the development of digital agriculture and smart agriculture. However, these standards are only limited to agriculture itself, and they are the local standards of the industry. The overall construction of the digital rural standard system is still lagging behind, which is still far from the requirements of comprehensively promoting rural revitalization.

(4) The talent support capacity to meet the digital rural construction is seriously insufficient

The enhancement of human capital plays a decisive role in promoting economic and social development. In the comprehensive promotion of digital rural construction, talent training is more important. However, the ability between urban and rural residents to use the Internet and modern information technology. With the continuous acceleration of industrialization and urbanization, more young and middle-aged people in rural areas go out for work, the average age of rural residents is older and the educational level is low. Some elderly people have a low level of education and their ability to accept modern technology is weak.^[4] The same digital products and services extend from urban areas to rural areas, and they may encounter the problems of incomplete functional utilization and inadequate convenient enjoyment. Digital rural construction needs to take talents as the engine. At present, there are few enterprises engaged in the development of information services and information products related to "agriculture, rural areas and farmers", and it is difficult to implement the industry-university-research model. There is particularly a lack of talents who understand both agriculture and digital technology, which is an important

bottleneck to be broken through.

4. Suggestions to Improve the Construction and Development of Digital Countryside

(1) Take information infrastructure as the digital base to consolidate the foundation for digital rural development

We will strengthen the construction of digital infrastructure in rural areas, vigorously improve the accessibility of rural residents to modern information and communication technology, and open up the last kilometer of rural digital economy. It is necessary to focus on promoting the construction of rural information infrastructure, which mainly includes three aspects: network infrastructure, information service infrastructure and the digital upgrading of traditional infrastructure. By improving the level of rural network facilities, improve the information terminal and service supply, speed up the digital transformation of rural infrastructure, strengthen the construction of rural information infrastructure construction, and on the basis of agricultural iot platform, data collection, transfer, timely and accurate data processing analysis, improve the standardization of agricultural production, intelligent, precision level. At the same time, with digital technology empowerment as a means to realize the digitalization of rural management services. Public management and service of digital is to use big data optimization integration of government information resources, break the information barriers between departments, hierarchy, improve management efficiency, the key to solve regulation, signing, regulation, in order to realize the data exchange, information sharing, unified scheduling, accurate command, improve public management and service efficiency.

(2) Improve the rural industrial system by using the digital rural construction

Promote the development of smart agriculture as the starting point, and realize the digitalization of agricultural production. Great efforts should be made to upgrade and transform agricultural production and operation through digital development. With the support of digital technology, we will extend the industrial chain, connect the supply chain, upgrade the value chain, and comprehensively enhance the digital level of agricultural production and operation. The deep integration of the Internet and featured agriculture will also promote the vigorous development of new industries and new forms of business in rural areas. In this regard, it is necessary to further strengthen the interconnection of rural business and commerce, promote the connection between agricultural business entities and agricultural products circulation enterprises through various ways such as signing agricultural orders, direct purchase and direct sales and investment cooperation, and build an agricultural products industrial chain closely combining production, supply and marketing. Develop shared agriculture, gather scattered and fragmented consumer demand information, form a scale, and realize accurate matching and docking with the supplier; build shared information platform, improve the utilization rate of production means, and reduce the delivery cost and communication cost. In a word, we should give full play to the important role of digital rural construction in cultivating new industries and new forms of business in rural areas, and inject strong impetus into rural revitalization.

(3) Vigorously develop the information industry in agriculture and rural areas, and promote the new drivers of digital rural development

Taking the application scenario as the breakthrough point, we will seek the optimal solution of digital countryside. The needs of the government, the market, farmers and other multiple subjects under various scenarios should be comprehensively considered to expand the grounded, simple, practical, convenient and efficient digital application scenarios. In the field of production and operation, it emphasizes the digital industrialization and industrial digitalization of agriculture, and solves the problems of mismatch between urban and rural information and low utilization rate of rural resources. In the field of rural governance, we will focus on solving problems such as insufficient personnel, trivial affairs, repeated filling of forms, and difficult supervision and evaluation.^[5] In the field

of public administration and service, digital application and transformation improvement are carried out with the education, medical care as the starting point, focusing on solving problems such as the relatively low level of public service guarantee in rural areas and the difficulty of villagers in handling affairs. We will vigorously support leading rural informatization enterprises, strengthen their informatization, digital and network operation capabilities, and encourage the development and growth of precision agriculture, agricultural product quality testing, precision livestock, agricultural drones, and unmanned tractors, so as to provide strong industrial support for the development of digital agriculture. Relevant subsidy policies will be introduced for enterprise products of digital agriculture and digital countryside, and special funds for digital agriculture and digital countryside have been established to foster and strengthen China's agricultural and rural information industry. We should attach importance to the use of new technologies and new forms of business to inject new impetus into the digital rural construction.

(4) Strengthen the supply of scientific and technological innovation in agriculture and rural areas and accelerate the construction of digital rural talents

We need to make full use of the diffusion effect of information technology innovation, the spillover effect of information and knowledge, and the universal effect of digital technology release, and accelerate agricultural and rural modernization. We will accelerate the comprehensive and in-depth integration of cloud computing, big data, the Internet of Things, and artificial intelligence and other emerging technologies with planting industry, seed industry, animal husbandry, fishery, and agricultural processing industries, and build smart agriculture, science and technology agriculture, and brand agriculture. We will actively develop new forms of rural business, and build adoption agriculture, experience agriculture, sightseeing agriculture, urban agriculture, etc., to increase the added value of agriculture. With the help of "Internet +", we will further strengthen online and offline sales channels, establish smart logistics distribution stations, deepen the demonstration role of e-commerce in entering villages, and form an e-commerce brand of featured agricultural products.^[6] Accelerate the agricultural equipment intelligent level, promote a new generation of information technology and agricultural equipment depth fusion, enhance the level of intelligent agricultural equipment, at the same time, strengthen the rural digital economy personnel training, not only need based on the current, more based on the long-term, combining short-term skills training and long-term education input, cultivating rural residents digital consciousness, information and digital literacy. We will promote digital technology to the countryside, provide digital service capabilities, and provide specialization and integration for rural residents through the establishment of digital skills training points at the county and township levels. Sinochem training to improve the level of information education in rural areas.^[7] Drive the villagers to clarify the concept of digital, master the method and path of digital agriculture. To improve the digital literacy of farmers as a means, so that farmers can fully enjoy the dividends of digital reform. Practical measures should be taken to encourage talents to go to the countryside and promote their extensive participation in the construction of digital villages through multiple channels and forms

5. Conclusions

Standing at a new historical starting point, we should share the fruits of information technology, accelerate the development of agriculture, rural areas and farmers to digitalization, network and intelligence, and accelerate the comprehensive revitalization of rural areas with the help of the power of digital technology. Pay attention to build with knowledge update, technology innovation, data driven as one of the rural economic development policy system, pay attention to establish higher hierarchy, better structure, better sustainable rural modern economic system, pay attention to establish sensitive and efficient modern rural social governance system, is open urban and rural integration development and the new situation of modernization inevitable choice. Based on the national conditions and agriculture in the new era, we should take digital countryside as an important aspect of the construction of digital China, accelerate the development of informatization, and drive and promote the overall

development of agricultural and rural modernization. Further liberation and development of digital productivity, pay attention to build knowledge update, technology innovation, data driven as one of the rural economic development policy system, pay attention to establish higher level, better structure, better sustainable rural modern economic system, pay attention to establish sensitive and efficient modern rural social governance system, open the urban and rural integration development and modernization new situation.

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