

Analysis of the Significance and Dilemma of Digital Empowerment for Rural Revitalization

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Abstract— Internet technology, as a key technology in the field of technological revolution, is an important node to ensure the comprehensive application of technology. The integration of digital technology into different industry fields can achieve a new breakthrough in the industry and master sufficient development power, and digital and informatization technology is constantly promoting the modernization transformation of traditional industries as a way to adapt to the speed of social development. Rural revitalization as a key means of solving the problem of unbalanced and inadequate development in the new era, the application of digital and informatization technology in the process of rural revitalization can effectively map to promote the construction of digital villages and ensure the digital development of rural economy. Both respond to the national development policy call, but also to achieve breakthroughs in rural development, can be said to be two birds with one stone, so pay attention to the effect and strength of the integration of the digital economy into the field of rural revitalization, to ensure that the digital countryside construction in line with the expected development goals, and to provide sufficient power for the revitalization of the countryside.

Keywords— Digital economy; Digital countryside; Rural revitalization

I. CURRENT STATUS OF THE DIGITALIZATION OF AGRICULTURE IN CHINA

The report of the twentieth CPC National Congress proposes that the great rejuvenation of the Chinese nation should be promoted in a comprehensive manner through Chinese-style modernization, that priority should be given to the development of agriculture and rural areas, and that the revitalization of rural industries, human resources, culture, ecology and organizations should be promoted in a solid manner. At present, rural revitalization faces challenges in aging agricultural population, lagging rural infrastructure construction, and differentiated development of agriculture and rural areas. The Digital China Development Report (2022) realizes that in 2022, the scale of China's digital economy has reached 50.2 trillion, accounting for 41.5% of GDP, ranking second in the world. So adhere to the priority development of agriculture and rural areas, effectively revitalize the countryside (industrial revitalization, talent revitalization, cultural revitalization, ecological revitalization and organizational revitalization) to put into practice, and promote the digital economy, a new engine and a new driving force, is an inevitable expansion in line with the logic of reality. In recent years, the digitization of agriculture and rural areas has entered the fast lane under the premise of continuous favorable policy end. The process of agricultural digitization in China has shown a steady development year by year. The application of digital agriculture has made greater progress in China, providing more powerful support for guaranteeing national food security and consolidating and expanding the results of poverty alleviation. For example, Beijing's Xiaotangshan Technology Demonstration Park utilizes satellite remote sensing technology to monitor crop growth, the Yellow Huaihai and Beijing-Tianjin-Hebei regions have carried out remote sensing of wheat yield estimation and disaster damage

assessment, and Guizhou's "unmanned farms" rely on unmanned systems based on BeiDou satellite navigation to remotely manipulate the running routes and speed of agricultural harvesters. The "unmanned farm" of Guizhou rice relies on an unmanned navigation system based on Beidou satellite to remotely control the route and speed of agricultural harvesters. Shichian County, Guizhou Province, the use of moss tea big data cloud platform to realize the tea farmers tea planting the whole process of digitalization, fine management, Lanxi City, the use of digital agricultural technology on the greenhouse water, temperature and crop growth and other conditions for real-time data monitoring. The application of digital technology is injecting more and more power into rural revitalization.

II. THE SIGNIFICANCE OF THE DIGITAL ECONOMY FOR RURAL REVITALIZATION

(i) *The digital economy contributes to the transformation of rural economies*

Traditional rural development is mainly based on agricultural development as the main content, in the process of rural development needs to invest a lot of manpower and material resources to realize agricultural economic development, so as to ensure that farmers' income. However, with the increase in labor costs, the input cost of agricultural development and income gradually disproportionate, farmers engaged in agricultural labor can not guarantee their own income to meet the needs of life, greatly reducing the enthusiasm of farmers to cultivate. Therefore, relying on digital technology to reform the agricultural and rural development system is a necessary path for rural development. The integration of digital technology into the rural economic development system is conducive to promoting the development and transformation of the rural economy, in order to reduce labor costs and inputs, the formation of the

scale of production to improve production efficiency and economic benefits. The expansion of farmers' markets through digital technology and the integration of digital technology into all stages of production, distribution and circulation will ensure the stability of agricultural trade transactions, bring economic benefits to farmers and maintain the stable development of the rural economy.

(ii) The digital economy is conducive to improving rural governance

Rural governance is an important means of rural development and a key element in the integrity of the social governance system. Therefore, it is necessary to keep the level of rural governance above the level line and bring a brand new impetus to rural development and progress. The essence of rural governance is to satisfy the living needs of the peasant masses and to ensure the positive development of the economic and spiritual fields of peasant groups. Integrating digital technology into rural revitalization is conducive to improving the level of rural governance and helping rural development to be high-speed and efficient. Promoting the digitalization of rural governance and the transformation of informationization is a general trend, which can not only break the urban-rural dualistic mechanism and make up for the digital gap in the process of rural development, but also ensure that digital technology supports the development of various fields in the countryside. Building a rural governance system with digital technology is the main form of rural development nowadays, which can integrate the rural governance system into the digital China strategy system, and ensure that rural governance is based on digital technology and intelligent management system to realize the improvement of the overall governance level. At the same time, it can effectively strengthen the efficiency of rural governance, ensure the modernization and transformation of the rural government management system, provide sufficient convenience for agricultural and rural development, and strengthen the farmers' sense of well-being.

(iii) The digital economy is conducive to narrowing the urban-rural gap

Narrowing the gap between urban and rural areas is a key means for China to realize national rejuvenation and promote common prosperity, and an important way to cope with the great changes that have not occurred in a century. Therefore, it is necessary to ensure the modernization and development of rural areas, improve the content of China's modernization system, promote the increase of farmers' economic returns, and realize the ideal of affluence. The application of digital technology in the process of rural revitalization is conducive to narrowing the gap between urban and rural areas, maintaining the development path of common prosperity, making up for the shortcomings of social development, and improving the efficiency of social development.

As farmers generally have a low level of education, they do not understand the content of the digital system, which also brings certain obstacles to the digital construction of the countryside, so it is necessary to actively promote the popularization and full coverage of digital technology, and

make use of digital technology to make the rural development situation open and transparent, so as to provide basic conditions for the construction of the subsequent rural system, and to ensure that the effect of the rural development will be given to the expected standard. At the same time, we should comprehensively implement the effect of rural governance, realize the construction of digital countryside, and narrow the distance between urban and rural areas.

(iv) Optimization of the rural industrial structure by the digital economy

Rural development can no longer meet the needs of the times by relying solely on the traditional farming industry, so there is a need to promote the development of the digital economy so that the rural industry can diversify from homogenization and accelerate the transformation of the traditional agricultural industry. When modern advanced technologies such as big data and artificial intelligence are integrated with the traditional rural industry, the supply and demand relationship in the market will be able to be analyzed and evaluated more accurately, and the new rural industry formed on the basis of digital technology will gradually become a new economic growth point. On the one hand, the digital economy can, by virtue of the dandelion effect, widely penetrate data elements into every process of agricultural production, make agricultural production more accurate, intelligent and automated, and build a complete industrial chain from production to quality supervision. On the other hand, under the environment of digital economy, traditional agriculture has accelerated the intersection and integration with food processing, e-commerce, recreation, tourism, culture and ecological creativity and other industries, and villages all over the world, by virtue of the unique natural conditions and advanced digital technology, Star changed such as experiential agriculture, leisure tourism, rural lodging, and other new forms and industries, and formulated relevant policies to encourage farmers to develop the traditional industry at the At the same time, they should also take the initiative to invest in characteristic industries, which is conducive to accelerating the integration of primary, secondary and tertiary industries in agriculture and promoting the optimization of the industrial structure of agriculture and rural areas.

III. ANALYSIS OF THE DILEMMA OF DIGITALLY ENABLED RURAL REVITALIZATION

(i) Weak digitization of infrastructure

The essence of digital countryside is to utilize digital technology to promote rural construction and ensure the comprehensive application of digital technology. However, the lack of infrastructure support in rural areas in the actual application process affects the effect of digital technology sinking. Part of the rural network, information technology infrastructure equipment is missing, network coverage does not meet the construction standards. At the same time, the lack of a good digital environment and smart agriculture system affects the use of digital technology. Although in recent years China has been increasing the construction of infrastructure in rural areas, but due to the small population in rural areas, the

low level of economic development and other characteristics, so the construction of digital infrastructure in rural areas, warehousing and logistics and other related supporting facilities compared to the city there is still a huge gap, which restricts the popularization of digital technology in rural areas. On the one hand, rural areas are geographically remote, roads and other transportation facilities are backward, which not only leads to the construction of network equipment to the rural transport difficulties, but also restricts the rural local characteristics of the product through the Internet or other means of export, although some areas have excellent natural endowments, but still due to the inconvenience of the consumer is not willing to go, information blockage and other issues are not conducive to the development of its tourism industry; on the other hand, due to the rural area On the other hand, due to the backwardness of network equipment in rural areas and the weak signals of mobile electronic devices, the transmission of information in rural networks is hindered, and the e-commerce platform of digital technology is highly dependent on the network, so it will seriously impede the digital transformation of rural industries, and is not conducive to the popularization and utilization of digital technology in the countryside, which affects the rural residents' ability to buy or sell agricultural products online, and to obtain information.

(ii) Lack of professional digitizers

The construction of digital countryside has high requirements for the professionalism of talents, and traditional talents in the rural field cannot meet the needs of digital construction. The rural digital construction process lacks professional digital talent support, the rural leadership cadre structure optimization is insufficient, and college student village officials lack technical means. At the same time, there is a lack of new professional farmers, insufficient training, and in-depth application of network technology. Digital talents are the core elements of the digital economy to help rural revitalization. Although provinces and cities have attached great importance to the development mode of the digital economy and introduced corresponding policies to attract and retain digital talents, overall, a mature mechanism for cultivating highly qualified digital talents in the countryside has not yet been established. Specifically, affected by the urban and rural siphon effect, there is a huge gap between the social welfare treatment and economic development level of rural areas compared with that of cities, so most young and middle-aged laborers in rural areas will choose to work in the process, and most of the people who stay in the countryside are the elderly. Secondly, because the digital economy is a new economic form, and rural areas generally lag behind in infrastructure, the lack of digital technology development environment, the main body of rural governance is also a lack of scientific knowledge, the degree of understanding of digital technology is not high, resulting in some rural cadres are reluctant to introduce some highly educated and high-quality talents, highly educated talents are also reluctant to work in the countryside.

(iii) Poor development of new industries

Part of the rural construction system lacks the content of emerging industries, and cannot effectively promote the integrated development of digital technology and the agricultural industry. The lack of support for the Internet of Things system in rural areas has led to inefficiencies in the agricultural and rural industry chain, affecting the actual benefits of farmers. Some rural areas lack a perfect business network, and the supply and marketing system is not well integrated. At the same time, the degree of integration of the "three industries" is insufficient to form a modern rural business network.

(iv) Inadequate laws and regulations

Digital economy empowering rural revitalization cannot be separated from the leadership and guarantee of laws and regulations, and the construction of the rule of law for the digital economy in rural areas is also an important part of the construction of a society based on the rule of law. Since the 18th CPC National Congress, the state has successively issued the "Strategic Outline for Digital Rural Development", "Action Plan for Digital Rural Development (2022-2025)", "Guidelines for the Construction of Digital Rural Standard System" and other important documents such as guidelines for the construction of digital villages, rules for the construction of construction, action plans, and other important documents, which have built up a "top-down" framework for the construction of digital rural policies and systems. It has built up a "top-down" policy system and systematic framework, but the degree of standardization and legal protection of the development of the digital economy still needs to be strengthened, and the construction of digital villages is still in the exploratory stage, and universal practical experience has not yet been summarized. For example, the laws and regulations related to the digital countryside are not perfect enough. Data is an important production factor, its development and utilization need strict laws and regulations to guide, regulate and constrain, the ownership, control, use and interpretation of data need to be brought into the orbit of the rule of law in due course to accept the supervision of the law, but the total amount of legislation designed in this regard is insufficient, and the existing laws have been introduced in part for a long time, and it has been difficult to meet the needs of the current development of the digital countryside.

IV. COUNTERMEASURES AND RECOMMENDATIONS ON DIGITAL ECONOMY FOR RURAL REVITALIZATION

(i) Focus on digitalization of infrastructure

Rural development cannot be separated from infrastructure support, in the implementation of the digital village construction process needs to pay attention to the comprehensive application of digital technology, the digital engine into the rural infrastructure construction, to ensure the comprehensiveness of rural development and systematic. This will not only break the shackles of digital rural construction, but also promote the orderly revitalization of the countryside. Promote the construction of intelligent agricultural system, incorporate agricultural product production and processing into the field of digital technology, realize the deep

combination of modern information technology and agronomic production, and ensure the systematic development of agricultural product production and sales. At the same time, the construction of rural digital platforms, guiding farmers to conduct network business, simplifying the process to facilitate farmers, realizing the basic concept of what is needed for the people and what is used by the people, and ensuring the digital innovation of rural infrastructure.

First of all, it is necessary to coordinate the construction of digital technology infrastructure in rural areas, and new infrastructure construction should be taken as the starting point for exploring the establishment of new infrastructure steering funds and the implementation of earmarking. Due to the high cost of digital technology infrastructure construction, it is necessary to take advantage of the digital financing platform to adopt diversified investment models, encourage and call for the active participation of social capital through relevant incentive policies, and through the coordination and cooperation between the government and the market, support the infrastructure construction of rural digital technology technologically and financially, expand financing channels, and give full play to the public nature of the need for rural revitalization through the empowerment of digital technology infrastructure. .

Secondly, we should improve the construction of road facilities. All relevant departments of provinces, cities, counties and other relevant departments should put the revitalization of villages in a more prominent position and increase the support for the construction of village roads; at the same time, grass-roots level governments should also earnestly carry out the various policies of the state in the construction of rural roads and invest special funds in the construction of rural roads, so as to effectively strengthen the connection between the region and the outside world, promote the flow of factors of production, and reasonably allocate resources, thus realizing the sharing of resources.

(ii) Increased efforts to develop digital talent

The construction of digital villages requires the support of professional talents to ensure the transformation of rural governance into digitalization and informationization. Talent as the realization of rural revitalization of soft power embodiment, can ensure the comprehensive application and popularization of digital technology, to ensure that farmers to strengthen the use of digital technology and mastery, for the development of the digital economy to provide powerful help. To pay attention to the introduction of digital talents, the digital economy to help rural revitalization can not be separated from professional talents, the need for rural development process combined with their own development needs for the introduction of agricultural personnel, optimize the structure of the rural leadership cadre, through the cultivation of college student village officials to promote the integration of digital technology. Increase the training of new farmers, digital village construction to establish a systematic talent system, not only to pay attention to the introduction of foreign talent, but also to promote the training of local talent. Guide farmers to change their identity, modernize their training with digital technology, strengthen their mastery of

digital technology, expand their business methods, and ensure that they can use the network to realize the management and development of agricultural products.

First of all, it is necessary to implement a policy that emphasizes both introduction and cultivation. Not only should we focus on tapping local talents, improve the employment policy of returning talents, encourage people to return to their hometowns for employment, but also introduce foreign technicians to strengthen the rural digital talent team, in order to fundamentally solve the problem of attracting but not being able to stay, the government should also strengthen the construction of living facilities in rural areas, optimize the rural development environment, and also provide assistance to spouses' work and children's schooling and employment for the digital technological talents working at the grass-roots level. The government should also strengthen the construction of living facilities in rural areas and optimize the rural development environment.

Secondly, it is necessary to increase the popularization of and investment in digital economy knowledge education in rural areas, cultivate farmers' digital thinking, and improve their awareness and application of digital technology. The government and digital economy departments should carry out digital economy education and publicity columns and lectures to transfer relevant knowledge through a combination of online guidance and offline training, so as to inspire farmers to participate in the practice of the digital economy in a positive, proactive and creative manner, so that they can consciously change their mindsets and take the initiative to be educated with relevant knowledge.

Finally, education and application should go hand in hand, on the one hand, the combination of industry, academia and research should be strengthened to strengthen exchanges and cooperation with local enterprises, and colleges and universities should start from the actual needs of the digital economy to serve the revitalization of the countryside, and be oriented to create innovative and technical as well as composite professionals, and set up more information technology courses and increase the number of rural research and practical activities, so as to change the stereotypical impression of students on the countryside.

(iii) Enabling emerging industries through the digital economy

Rural development requires the development of new agricultural industries to make up for the shortcomings and gaps in rural construction in the process of modern social development, to promote the transformation of rural industrial modernization, and to improve the overall economic income of farmers. As the construction of digital countryside is still in the stage of rapid development, so its development content and development opportunities need government departments to give full play to the concept of local conditions, the development of new agricultural industries suitable for the progress of local rural areas. First, improve the rural Internet of Things system, to fully optimize the rural agricultural industry chain, to ensure that the production, management, sales and other content digital development, the application of digital technology in the construction of the industry chain, not only to achieve the perfect rural business network, but also

the establishment of the integrated development of the system of supply and marketing, to ensure the efficiency of agricultural products for external sales. Secondly, to promote the integration of the "three industries", digital technology should be used to lead the combined development of the primary, secondary and tertiary industries, to build an all-round and systematic agricultural management industry, to expand the scale of the industry and to consolidate the foundation of agriculture, so as to provide basic support for the revitalization of the countryside.

(iv) Leveraging the rule of law for the rural digital economy

First of all, we must establish a sound system of laws and regulations on the digital economy, and innovatively regulate the development of the digital economy. As a brand new field, the digital economy, in the process of its development, must combine the legalization of the digital countryside and the digitization of the countryside under the rule of law, and increase the number of relevant laws and regulations in a targeted manner. In the process of comprehensively promoting rural revitalization and the construction of the digital village under the rule of law, grassroots cadres should act according to the law, and local people should obey the law, so as to truly realize that there is a law to follow, and violations of the law must be investigated.

Secondly, we should address the problem of unclear rights and responsibilities in the process of digital village construction, clarify the boundaries of rights and responsibilities, and increase the supervision of law enforcement, to ensure that rural grass-roots cadres and the masses in the comprehensive promotion of rural revitalization and the rule of law in the process of construction of digital villages must be in accordance with the law, and the law must be strictly enforced, and the legal system should be reasonably arranged, and can be implemented to implement the system of hierarchical responsibility, so that the rule of law cadres to sink to the countryside work, and the same time, the countryside of the digital development of the countryside into the leading Cadres in the performance appraisal, to ensure that the rural digital economy rule of law work someone to do someone to manage.

V. CONCLUSION

The foundation of the comprehensive revitalization of the countryside is to realize the revitalization of rural industries, and the development of rural industries needs to integrate the digital economy into the whole process and all aspects of the revitalization of rural industries, and through the digital economy to give new vitality, new kinetic energy, and new modes of business for the revitalization of rural industries, and to promote a deep-level revolution in the rural industry, an innovative transformation, and the development of special characteristics. Under the wave of the new generation of information technology revolution, it is crucial to accelerate the exploration of new ideas, new methods and new paths for the revitalization and development of rural industries empowered by the digital economy, so we should constantly accelerate the pace of the overall development of the revitalization of rural industries empowered by the digital

economy, and promote the development of rural industries at a high level, with high quality and high efficiency, so as to achieve the overall development of the rural industries and their comprehensive revitalization.

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