

Grassroots Affairs Governance Under the Rural Revitalization Strategy Empowered by WeChat Mini Program Technology

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ABSTRACT

With the strong support of governments at all levels, WeChat mini programs have been widely used in the field of urban governance. However, due to the lack of support of professional information tools, the actual operation process is too complex, resulting in too many management levels and cumbersome operators, reducing the efficiency and accuracy of information transmission, it is difficult to achieve information and grid management, and seriously limiting the popularization and application of grass-roots transaction processing mini programs at the grass-roots level. This paper aims to explore how WeChat mini programs can effectively solve the challenges in practical applications and propose a new development plan for social governance applications based on WeChat mini programs, which has been tested in many places and achieved remarkable results. In the future, WeChat mini programs will be continuously optimized and promoted in practice to help the country's rural revitalization.

KEYWORDS: Rural revitalization; WeChat mini program; Grassroots affairs governance; Transaction flash

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1. Research background and significance

In recent years, with the strong promotion of local governments, WeChat mini programs have been well practiced and applied in cities, especially in the field of big city governance, such as 12345 mini programs in Beijing. In the current development of smart agriculture, if the deep integration of big data, Internet of Things, artificial intelligence and other technologies with grassroots people's affairs governance is actively promoted, it can provide a steady stream of power for the smooth realization of the rural revitalization strategy ^[1].

However, after conducting in-depth field investigations in grassroots communities and rural areas such as Beijing, Hebei, Jiangxi and Shenyang, the team found that rural grassroots and other areas have not fully enjoyed the dividends of WeChat mini programs, and the use of mini programs in various places is still in the initial stage, and there are many challenges that need to be solved:

1. Due to the complex management structure at the grass-roots level, the wide jurisdiction, the lack of

data on people's lives, the lack of data on the development of villages and towns, and the lack of effective communication channels, the government's decision-making becomes slow, the effectiveness of government decision-making is weakened, and the regional development momentum is inhibited.

2. At present, grassroots social governance has not yet made full use of modern science and technology, resulting in inadequate construction of grassroots governance information platforms. In many places, grass-roots cadres and residents still rely on "running broken legs" and "grinding their mouths" to deal with affairs, such as dealing with contradictions and disputes, reporting security risks, etc., which require face-to-face communication between residents and grass-roots cadres. Inevitably, grass-roots cadres cannot be found, resulting in the inability to deal with the affairs of the people, making the efficiency of affairs processing slow, and the life satisfaction of the residents is low.

- There are problems in platform operation management and merchant benefit award and subsidy policy, such as inconvenient data summary and delayed information release and update, which restrict the use scale of mini programs to a certain extent [2].

In this paper, the team's self-developed transaction flashed through the grass-roots transaction governance mini program, and the main effects of the use are reflected in two aspects: First, the function of the mini program home page is modular and the operation is simple. Meet the use needs of the vast majority of people, especially the grassroots people. Using advanced science and technology, we can help grassroots cadres make all the basic community governance work more clear, so as to effectively solve the gaps and shortcomings in rural governance. In addition, our mini program can provide immediate processing and timely response, ensure the public safety of rural residents, and emphasize that rural cadres provide quality services to rural people and work in a way tailored to local conditions. Provide a new carrier of grassroots social governance; The data generated in the process of helping grassroots cadres serve grassroots people to deal with grassroots affairs has been connected to the database, and the data screen is automatically generated to achieve real-time update. Grassroots cadres can understand the living conditions of local grassroots people in real time through the data screen. mini programs help grassroots cadres serve grassroots people and improve the quality of life of grassroots people. Good results have been obtained.

2. Design and development of transaction flash mini program

2.1. General Idea

Due to the lack of the full application of modern scientific and technological means in the handling of

grassroots social affairs, this paper proposes a development plan for the grassroots social governance WeChat mini program created for the township grassroots. The main function of the mini program is to build two main modules of "I want to complain" and "I want to encourage" as well as multiple auxiliary functions such as "multiple have you" and "two queries". So that grassroots people can more easily express their demands, so as to greatly improve the efficiency of grassroots governance and services. Transaction flash mini program page is simple and convenient, the use of large font, big icon, graphic combination of ways to facilitate the masses to understand is conducive to the middle-aged and elderly grassroots people to reflect the demands and suggestions. The infrastructure layer is responsible for providing the necessary cloud, network infrastructure, and front-end iot devices to support the computing power and data acquisition of the entire system. The data layer is responsible for storing, managing user accounts, and interacting with data to ensure the security of the system.

Data content includes, complaints and encouragement number information. The support layer is the middle layer component of the system, which is built based on the middleware software of the database platform to achieve unified user management and permission control. According to the different needs of the application layer, managers can provide corresponding solutions. The application layer provides various service functions required by system users, such as management, sequence ranking, and processing progress. The display layer supports users to log in to the system by mini programs, WeChat public accounts, etc. The system architecture design is detailed in the system architecture diagram shown in Figure 1.

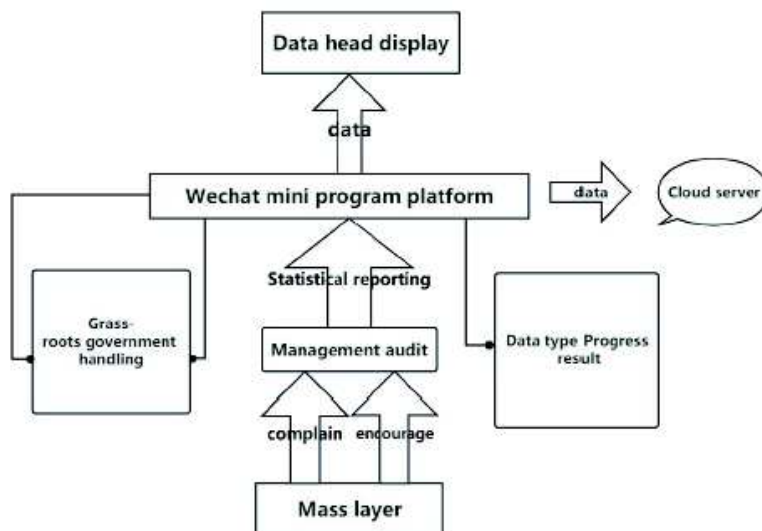


Figure 1 Function flow chart of WeChat mini program system

2.2. Function Description



Figure 2 Schematic diagram of transaction flashing applet

2.2.1. Basic working principle of mini programs

The page design of "transaction flash" mini program is simple and convenient, and ADAPTS to the needs of middle-aged and elderly people. The page uses large fonts and large ICONS, so that the text and ICONS can be combined to convey the message. The keys on each page use simple graphics to indicate the meaning, even if the user does not understand the text. The homepage design of the mini program is simple and clear, including only two main modules "I want to complain" and "I want to encourage" and auxiliary modules such as "public security" and "personnel online",

and the page is clear and simple. This design can meet the needs of most grass-roots people. The data generated in the process of basic transaction processing is connected to the background database, and the visual chart is automatically generated by the summary of all kinds of data, and the real-time update is realized.

2.2.2. "I want to complain" function

In the "I want to complain" page, there is a complaint time module, the public can choose the time of the matter to complain. The administrator background can easily obtain the relevant demands in the corresponding time period through intelligent screening. This makes it easier for the administrator to handle the corresponding complaint transaction more quickly.

The complaint type module includes multiple options such as theft, security risks, loss, conflict, etc., covering the complaint needs of the vast majority of the masses. According to the type of complaint, the system can realize intelligent classification of appeals, avoid the situation of mixed appeals, and help the administrator to better deal with complaints.

In addition, the Complaint Area module allows the public to fill in the exact address where the complaint occurred. According to the jurisdiction of the address, the back-office system can automatically assign complaints to the corresponding grass-roots cadres, improving work efficiency. Even if the complainant is not at the complaint location, the complaint can be made remotely to facilitate the people's complaint needs to be met.

2.2.3. "I want to encourage" function

In the "I want to encourage" page, we are committed to providing a relatively simple interface, so that the masses can easily affirm and encourage the grassroots cadres who have sincerely paid for everyone.

The operation process of this page is relatively simple, so that the masses can quickly and easily express their appreciation and gratitude to the grassroots cadres. The masses can choose appropriate means of expression, such as text, pictures, videos, etc., to express their affirmation and encouragement of grassroots cadres.

Through the above simple operation process, we hope to provide a convenient way for the masses to express their appreciation and gratitude to grassroots cadres, and strengthen community interaction and participation through the mechanism of likes and comments.

2.2.4. "I want to entrust" function

The "other agent" function is a service that can help users delegate various tasks to others. The user only needs to inform us of the specific requirements and time limits of the task, and we will confirm the details with the user and resolve the problem as soon as possible. In this way, users can save time and effort.

Through other agents, users can delegate tasks to trusted agents without having to deal with tedious

affairs in person. In order to protect the privacy of the user, the agent needs to provide two documents, submit a copy of the agent's ID card, the agent's power of attorney, the agent's ID card can continue to handle.

2.3. Advantages of mini program technology

Technical competence is the basis for making mini programs, and familiarity with relevant programming languages and frameworks is required. The front-end technology of "transaction flash" mini program uses JavaScript language and framework vue.js for development; the back-end language mainly uses Java language, frameworks Spring Boot and JPA for development; and the mini program framework is uniapp. At the same time, we will continue to learn and update their technical knowledge, keep up with the development trend of the industry, in order to improve their competitiveness, update the iterative mini program in time, so that the mini program better serve the public.

Considering that most of the users facing the "transaction flash" mini program are not highly educated and have poor ability to use intelligent products, our page is mainly aimed at simplicity and efficiency, providing an easy-to-use, intuitive and friendly interface and operation.

mini programs need to adapt to different sizes of the screen, in the design we take into account responsive design, so that mini programs on different devices have a good display effect.

mini programs usually need to interact with back-end databases, so they need to master database design and management skills to ensure data security and stability. The "Transaction flash" applet uses MySQL database to sort and distribute information, and can do data modeling, data analysis and data mining. Considering that it takes a certain amount of time to process the transaction, we will store the data for one month, and have backup recovery, disaster recovery backup, etc., to ensure the integrity and reliability of the data.

At the same time, adding voice complaint option, grassroots people are not highly educated, adding voice complaint option can avoid the masses with low education level typing efficiency slow, typo, sentence error, easy to cause misunderstanding and other situations. Directly through voice complaints, it greatly facilitates such mass complaints and improves the efficiency of complaints, and indirectly improves the handling efficiency of grass-roots cadres' affairs.

3. Grassroots social governance effectiveness based on transaction flash mini program

Our home page design strives to be concise and clear, so that users can quickly find the information they

need. Two main modules, "I want to Encourage" and "I want to complain", have been set up to meet the needs of users in expressing appreciation and complaints, so that users can directly feedback their experiences and suggestions to us.

The built-in "Please select feed type" module option in the WeChat mini program reflects the importance our team attaches to users, and we welcome and accept users' suggestions and opinions. By listening to criticism and affirmation, we continue to improve and improve the mini program, in order to develop a mini program that is truly applicable to the township level and convenient for the broad masses of the grassroots. At the same time, we are striving to improve the work efficiency of grassroots cadres and enhance the well-being of grassroots people.

During the winter and summer holidays, we participate in social practices and homecoming activities, traveling to grassroots communities across the country. Through practical activities, we assist grassroots cadres in social governance work, and use our self-developed grassroots governance platform to achieve rural informatization and grid management. We are committed to promoting rural construction into the digital age and contributing to rural revitalization.

The team independently developed and promoted the "Affairs Flash" WeChat mini program, which was tested in Quyang County, Nanpi County, Hebei Province, Faku County, Liaoning Province, Nanfeng County, Jiangxi Province, Kangping County, Liaoning Province and Handan Yuansheng Trading Co., LTD., from December 2022 to March 2023, to assist village cadres to serve grassroots people. The "Transaction Flash" WeChat mini program has a simple interface, easy to understand operation, high efficiency, and strong practicability. During the one-month trial period, the average monthly handling of neighborhood conflicts, item loss, security hazards and other 78 villager affairs has been increased to 208 monthly handling. The trial of the "transaction flash" mini program has received good feedback, not only for the affirmation of the team and the mini program, but also for the affirmation of the route of enabling the grassroots of science and technology and creating the "number intelligence" grassroots.

From 2023 to 2025, the team plans to enter at least 100 grassroots units, conduct social practice activities, complete local social research reports, and deeply understand the different needs of local grassroots. Through classification and summary, the local grassroots are classified according to the needs, and the grassroots social governance platform is "tailored".

From 2026 to 2028, efforts will be made to put corresponding mini programs into trial use in 50 grassroots townships. In the trial process of the mini program, the whole process of opening the "I have something to say about the mini program" channel, accepting the suggestions of the majority of grassroots people and grassroots cadres, constantly polishing the mini program, making the mini program iterative update, and gradually becoming an indispensable part of grassroots social governance.

2029-2030, the team plans to improve the quality and expand the scope, further enrich the connotation of beautiful rural construction, promote it nationwide, implement the policy of small procedures into the home, everything has an answer, and run through all aspects of new rural construction and residents, and use technology and other means to improve and replace small procedures, explore new governance models, so that small procedures such as into thousands of households.

4. Summary and outlook

The biggest advantage of the transaction Flash mini program platform is that it does not require excessive

initial capital investment such as store rent, and lets villagers have no worries when attracting their participation. But even so, it is also necessary to train villagers on the application of information office technology such as computers and mobile phones. But not too hard. However, in the actual development and testing process, there are still some shortcomings: In order to ensure the security and sustainable management of mini program data [3], how to deal with various challenges in practical applications of WeChat mini program, combined with mature scientific and technological means, such as cloud computing and mobile phone network technology, provides a new way to deal with these challenges. With the development of these new technologies, such as big data, artificial intelligence, blockchain, this new community model is expected to be further developed, and can bring huge social benefits. At the same time, this paper can use modern management methods to form a special and efficient team to implement these measures, so as to achieve efficient control of the community.



Figure 3 Large screen of visual chart

Through the accumulated knowledge and the guidance of "grassroots + direct access", the data on grassroots development and grassroots people's life are collected and visually displayed, and the development status of villages and towns and people's living conditions are displayed more intuitively, which can provide data support for local governments and grassroots cadres to make development decisions,

provide efficient assistance for rural development, and promote the revitalization of rural agriculture.

At the same time, we take advantage of the direct response of the grass-roots government to the people, and build a people's solution platform within the interface. Users can propose solutions by themselves, and the government provides corresponding measures to improve the interaction between the people and the

government, so that the grass-roots people can participate in the grass-roots governance, improve the grass-roots social affairs governance level, and improve the service quality of grass-roots cadres. Improve the quality of life of grassroots people, help the majority of grassroots society in the country to manage affairs, and help realize rural revitalization.

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