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Abstract: Rural and agricultural information service is the fundamental condition for agricultural information development. Moreover, it is a effective way to narrow the effectiveness of the "digital divide" and integrate the urban and rural development. In this study, taking Shandong Province as an example, the service platform, service tools, service support and service teams etc are described. And, the rural agricultural information service model based on "Service platform as the core, service means as basic, service carrier as link, service team as support and public and market integration" is put forward in this study. This rural agricultural information service model is benefit for the agricultural information; accelerate the pace of rural agricultural information construction.

Keywords: Rural and agricultural; Information service; Research and explore

1 Introduction

With the accelerating rural agricultural informationization development, rural and agricultural information has led to support the direction of the transformation and upgrading of China's modern agriculture, and finally for the purpose of the application of information and services, and continuous ly infiltration. Rural agriculture information service is knowledge-intensive services of the integration of knowledge, intelligence, technology, information and funds in the foundation of the abundant information resources, convenient information network and modern information technology, which has the characteristics of wide demand, fast growth, high efficiency, energy saving, pollution-free, etc. Only by constantly sum up experience, explore new problems , new trends, new modes and new mechanisms of providing information services for rural and agricultural under the new situation, only continuous innovation, and to achieve better Agricultural information.

As a big agriculture province, Shandong province highly pay attention to the rural agricultural informatization work, and has been developing rapidly in the aspect of infrastructure, information resources, demonstration, application and service system construction etc. In 2010, Shandong province , in 2010，Shandong province positively research and explore rural agricultural information service, solve the problem of the last kilometer of information service，effectively narrow the gap between urban and rural informatization development, thus was approved as the first batch rural agricultural informatization demonstration province pilot provinces jointly by national ministry of science and technology, the Organization Department of the Central Committee of the CPC, ministry of industry and information. Take Shandong province as an example to explore. After many years of the development in the leading mode of the government, rural agricultural information service gradually move towards to the parallel of public service and market service, rounded by different types user's needs, thus produced a large number of different forms and contents of information service organization, rural agricultural information service industry has been established. Which is mainly includes the service platform, service means, service carrier, service team, etc.

2 Rural and agricultural information service platform

2.1 Construction ideas

To build a platform with Shandong features, industrial service focus on "the integration of resources" and "efficient service" "mechanism to explore" and other key nodes to break through and innovation. Accordance with the "platform shift" principle, all kinds of information resources integration and development of agriculture in rural areas are carried out, meanwhile, effective cohesion with advantage industry professional information service system and basic information service station is stressed. So that, the "low cost, convenient" service information villages and households are speeded up, personalized information needs of farmers are satisfied, and new rural construction and development of modern agriculture is serviced.

2.2 Platform overview

Service platform relies on provincial party distance education network, and the development focus on ten content area and top ten industrial information service system. Scientific classification of column plate design is based on information services on websites. The columns and thematic of platform includes agricultural production, competitive industries, wisdom agriculture, commerce, village area, primary site, distance education, typical applications, convenience services. The platform named Qilu agricultural science and technology network（www.qlsn.cn）

has been initially built and run, , which provides service interfaces for various application systems taking advantages of real time and large capacity of the Internet. This platform becomes mainly rural agricultural information service window of Shandong Province.

3 Rural and agricultural information service means

3.1 Hotline service

12396，which is jointly promoted by the Ministry of science and technology, industry and information technology, is the unified agricultural science and technology information service number. Shandong Province in December 2008 opened "12396" service hotline。 Fixed and mobile telephone farmers live in any areas of Shandong could consult to the experts by calling 12396, and only need to pay the ordinary telephone costs. It's effective to solve the problem that farmers have difficulty to use agriculture technology for a long time.

However, with the development of science and technology, the traditional hotline service has been far from meeting the needs of farmers for information. We have merged the hotline and radio broadcast through coupler used multimedia speech fusion technology by making full use of 12396 hotline at the beginning of 2013. We are jointly with the Shandong radio and television broadcast channels to create the 12396 green voice in the inter broadcast. Farmers can participate in modern country live program by dialing 12396 after dialing 9. We have changed the traditional pattern one to one into one to N by strengthening the interaction between the host and the experts and the audience, and disseminated the knowledge of agriculture and technology to millions of households directly. At the same time, variety kinds of ways, such as microchannel, microblog, QQ group, were set to connect farmers and experts, to connect farmers and markets, to connect farmers and government.

3.2 Computer remote video service

Video conference system, which was consider as the important application of interactive audio and video communication, is becoming more and more widely used with the development of computer communication network and audio and video coding and decoding technology. Combined efficient H.264/AVC video encoding algorithm and high level meeting of GIPS voice engine, the remote video conferencing system has many advantages, such as excellent video quality, high level of automatic echo suppression, automatic gain control, Mike volume automatic adjustment, noise suppression and so on. The B/S structure, advanced video encoding and transmission were adopted in this system. The remote video services with a low bandwidth clear and smooth image was achieved through the Internet. The farmer could land the system and connect the video anywhere after get the ID.

The software of system server-side is installed on the specialized video server of Service Platform which accessing to internet through 100M fiber, installation and distribution process of the software is simple, and it is easy to use. It can achieve instant communications, people meeting, conference recording, file sharing and other functions after installation and it provide services through many ways, like experts agents, booking agents, emergency relief, teleconferencing, training, etc.

3.3 TV set-top box service

Customers use IPTV and remote control to synchronize browsing Qilu Agriculture network information, demand agricultural science and technology video, implement web surfing by "TV + set-top box" approach. Currently, IPTV provides expert auditorium, live television, information services, agricultural science and technology, industries, commerce, web surfing and other columns.

3.4 Cellphone service

Mobile Client Service provide more timely targeted services, like policies and regulations, entrepreneurial wealth, rural alerts, agricultural science and technology, market, encyclopedias and other information services. Currently, Qilu rural integrated information services client, agricultural facilities things monitoring application client (Shed commander, pigs commander, chickens commander), Shandong Leisure Agricultural Services client, Prices for Agricultural courier client, mobile video client. Not only the farmers can directly scan two-dimensional code to download the client by log Qilu three rural network client download interface, but they can also directly download the client from the Android, Apple Store client.

Mobile Video Services, the customer can get online video support via phone video by download client. The famer can achieve two-way communication using mobile phone through the video system. Farmers can consult various types of agriculture-related information, ask experts for a prescription for the pest, keep abreast of the latest agricultural information and solve problems which they encounter in agricultural production faster, and all above this greatly improve the efficiency and quality of the solving of various types agriculture problem.

4 Rural and agricultural information service carrier

Basic information service station is an important carrier of rural and agricultural information service, and meanwhile, it is a window to understand the platform information and accept the information service for grassroots organization, agricultural enterprises and farmers. The basic information service stations achieve flat information service with a direct connection with the serviceplatform to and the effective docking with the majority of farmers.

4.1 Construction standards

Basic information service station constructions need to meet the following requirements and standards, namely: a fixed place, a set of information equipment, an information technology correspondent, a set of training system, a set of management system and a long-term mechanism, mainly divide into two major categories of professional information service stations and integrated information service stations.

As the important link of service platform and farmers, professional information service stations mainly relying on the existing levels of agricultural science and Technology Park, agricultural leading enterprises, professional cooperative organizations, professional associations, large breeding, agricultural capital construction management entity, are a necessary part of the whole rural agricultural information service chain. The integrated information service stations are the effective measures to promote the information to villages and households. Furthermore, it is an important part of rural and agricultural informatization construction. On the existing party members and cadres of modern distance education based on the grassroots service station, to select the service station with better hardware condition, staff members and facilities.To encourage the combination of public service and paid services in basic information service station, and the integrated services of technology, material and information, exploring a long-term mechanism to combine the public welfare and market.

4.2 Site administration

According to the actual needs of the grassroots information service station, the service platform is designed to set up the "grassroots" structure and the contents of the plate, including member account management, site registration information, site information management and other functional modules. Through the member account management module, the system administrator can view and review the member's personal information. In the site registration information module, the system administrator can query, preview, approval of the site registration information submitted by the member, in the "information management" module, the system administrator can query, review the information submitted by the members of the site, the audit, withdrawal and other operations.

4.3 Service models

According to local characteristics, the main models of information service stations was explored, such as agricultural technology station for technical guidance, agricultural materials sales department of information and material combination, the leading enterprises for leading-led, demonstration park for radiated and proceed, farmers' cooperatives organization for the market growth. In the promotion process, gradually formed a "integrated" service mode, and insisted on multi-pronged, multi-

policy, so that the information spreaded to village and farmer to increase information efficiency.

5 Rural and agricultural information service team

The construction of rural agricultural information service team mainly includes operation team construction, promotion team construction and specialist team construction. Operation team construction mainly rely on the scientific research institutions, public welfare operation team construction consisted by government departments and marketization operation team consisted by professional company. Promotion team construction includes basic science and technology information officer, distance education information officer and primary agricultural technology personnel and strengthens the technical training and support for the messenger of information service station. Specialist team construction consists of not only the authoritative experts come from the institutions of higher learning and scientific research institutes, but also the technology experts who have practice experiences and can solve practical problems. These experts who are responsible for technical guidance covers the fields of planting, breeding technology, storage processing, pest control, construction of modern agriculture and so on.

6 the effect on rural and agricultural information service

As the foothold of agricultural informatization, the rural and agricultural information service to grow out of nothing, by weakly to the process which is strong, is experiencing a long development period. At present, the rural and agricultural information service is accelerating the coverage of penetration, the changes from heavy construction to heavy service, from single service to integrated services, from passive service to interactive services are happening. Through continuous exploration and summary, the rural agricultural information service is more mature following the thinking "giving priority to public welfare, the market as supplement, and The market in turn auxiliary public welfare".
Fully integrated and use the existing information resources, and taking the service platform as the core, the service carrier as a link and service team as the support, on the basis of service means, improving the level and ability of public service, at the same time, actively exploring the market service mechanism, accelerates the low cost and high efficiency dissemination of information in vast rural areas, and to realize the zero connection between farmers and information.

Acknowledgment

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