



Construction of Rural Public Management and Social Service Platform Based on .NET Technology

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Abstract. With the development of China's rural economy, the needs of rural residents have become more complex. Nowadays, promoting the comprehensive information management of rural residents and building a service system has become the goal of developing rural information services. As the best means to improve work efficiency and productivity, information technology can also be applied in public management and services. Computer technology can help government departments to study new types of public management and build a scientific and rational decision-making procedure and mechanism for rural public utilities. The rural public management and service platform designed and developed in this paper based on .NET technology can improve the efficiency of rural public management and provide data and information support for government decision-making.

Keywords: Rural Areas · Public Administration · Platform · .NET Technology · Computer Technology

1 Introduction

It is China's development requirement to build a new countryside that develops with the times. Nowadays, the Internet is becoming more and more popular, and people's life and work are affected by the Internet. In order to keep up with the development of the times in rural areas, rural public management and services need to be upgraded using information technology. The countryside has always been the weak point of Chinese social development. Rural areas have a vast area and a small permanent population, so it is difficult to carry out public management and services. Under this premise, information technology is the best way to solve this problem. Information technology can help the government obtain information, provide rural residents with a channel for communication with the government, and allow rural residents to express their needs through the Internet, making the government's public management more simple and convenient. Rural public management and services need to provide rural residents with various information services such as agricultural technology, medical care, culture and education.

2 Net Technology

.NET is Microsoft's technology for implementing XML, Web services, SOA (service-oriented architecture) and agility .NET allows applications to communicate and share data over the Internet, regardless of the operating system, device, or programming language the application uses. .NET is standard, connected, adaptable, stable and high-performance. At the Build developer conference in 2014, Microsoft announced the open source of a number of .NET libraries and related technologies, and established the .NET Foundation. The .NET Foundation manages and guides the development of open source components. In November 2014, in order to further expand the cloud computing market, Microsoft no longer limited key software technologies such as .NET and Visual Studio to the Windows platform. Microsoft announced that .NET will also be compatible with Linux, Mac OS X, IOS, and Android in the future. In addition, Microsoft also announced that it will open the source code of the .NET Core server runtime environment and framework, so that external developers can also contribute to the software development platform. Once again, developers can use the .NET runtime environment and framework to develop server and cloud-based applications for Linux and Mac using .NET (Fig. 1).

The .NET framework has two main components, the common language runtime library and the .NET framework class library. The Common Language Runtime is the foundation of the .NET Framework. The common language runtime library provides core services such as memory management, thread management, and remoting [6]. The common language runtime enforces strict type safety and other forms of code accuracy that ensure safety and reliability. The concept of code management is the basic principle of the runtime library. In .NET, code that targets the runtime is called managed code, and code that does not target the runtime is called unmanaged code [2]. The .NET Framework Type Library is a comprehensive object-oriented collection of reusable types [7]. Developers can use the .NET Framework type library to develop traditional command-line or graphical user interface applications, or use the .NET Framework type library to develop state-of-the-art applications. In general, .NET is characterized by strong applicability, powerful performance, and it is easy to create new customized services. It is very suitable for rural public management and services.

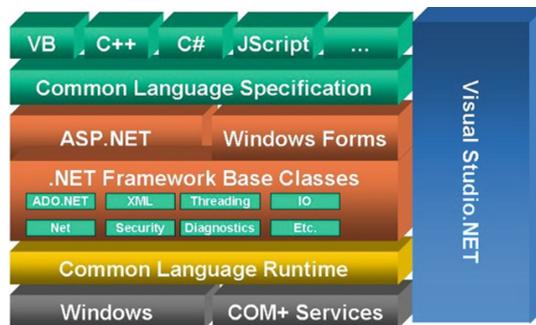


Fig. 1. NET technical structure

3 Demands for the Construction of Rural Public Management Platforms

In order to build a public management and service platform that conforms to the living habits of rural residents and government work procedures, before building the platform, it is necessary to conduct sufficient research to understand the needs of rural residents and users of government management.

3.1 The Needs of Farmers for Public Management Service Platforms

Most of the rural residents are farmers, and their main job is planting and breeding, so they need to keep abreast of various policies related to agriculture and farmers. In the rural public management service platform, it is necessary to update all kinds of farmers-friendly policies, subsidy policies and market information released by the state in a timely manner, so that farmers can grasp this information in a timely manner [8]. With this information, farmers can adjust their production priorities and strategies according to changing market supply and demand. Policy information and market changes are the keys for farmers to obtain economic benefits [1].

Farmers in rural my country mainly rely on the natural environment for planting and breeding, and rural production labor has been in traditional and low-level conditions for a long time. Many farmers do not understand the new planting and breeding technology, which also leads to slow production efficiency and low output of farmers. If China wants to improve agricultural output and quality, it must let farmers learn new production techniques. The public management service platform should promote the scientific and technological knowledge related to agriculture and animal husbandry to farmers in a timely manner, such as information on agricultural products, the use of new agricultural technologies, methods of pest control and so on [3].

In order to encourage the diversified development of residents in rural areas, the public management service platform needs to provide rural residents with a variety of training channels. There are many surplus laborers in rural areas with no income security and low educational level. In this context, the government should strengthen vocational and technical training for rural labor force. Diversified rural technical training can help rural surplus laborers learn vocational knowledge, use vocational knowledge to increase income, and further improve the rural living and working system [9]. The public management service platform can provide users with a variety of online vocational training, such as special family farming, small family processing and manufacturing, family handicrafts, family flower planting, repair and so on.

3.2 Demands of Government Management Users for Rural Public Management Service Platforms

Government management users need to push and release information on production technologies, policies that benefit farmers, market information, training and employment, and social security to rural residents in a timely manner [4].

It is difficult to collect information and data in rural areas. In the process of public management, government managers need to quickly sort out and summarize the situation

information between each village [10]. Collecting and sorting such information through the Internet can improve the efficiency of existing public management work, promote the process of rural democratic management, establish a scientific and reasonable public management procedure and mechanism, and provide the level of government public management and services [12].

The public management service platform also needs to be responsible for the communication and communication within the government. Most of the current information dissemination is carried out through the Internet, which can reduce the waste of paper and reduce environmental pollution. The efficiency of transferring files on the network is faster, and the archive query is more convenient. The public management service platform needs a resource sharing platform for government managers, so that users can conduct internal learning and training.

4 Framework Design of Rural Public Management Service Platform

The platform uses a three-tier B/S model. The platform architecture is based on the .NET Framework, the Windows operating system is used, and IIS is the Web application server. The platform is divided into database layer, Web application layer and Web presentation layer (Fig. 2).

The foundation of the whole public management service platform is the network environment, network transmission concord server and so on [13]. The application layer is the application support and development platform, the core of the application system, and the public facility for the exchange of various digital information resources and application integration. The presentation layer is the entrance of the end user and the key to the entire application system. The design of the presentation layer determines the user experience. (Fig. 3)

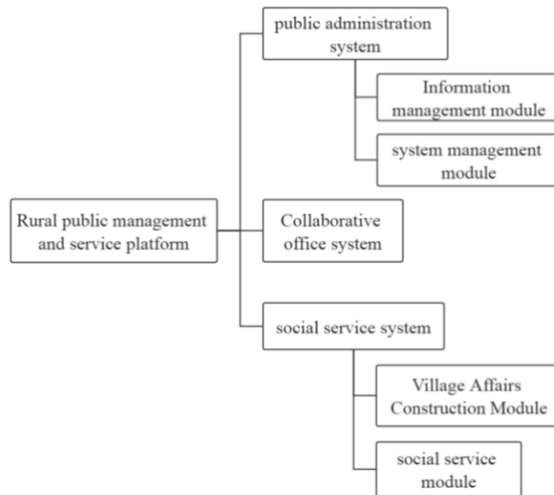


Fig. 2. The overall architecture of the platform

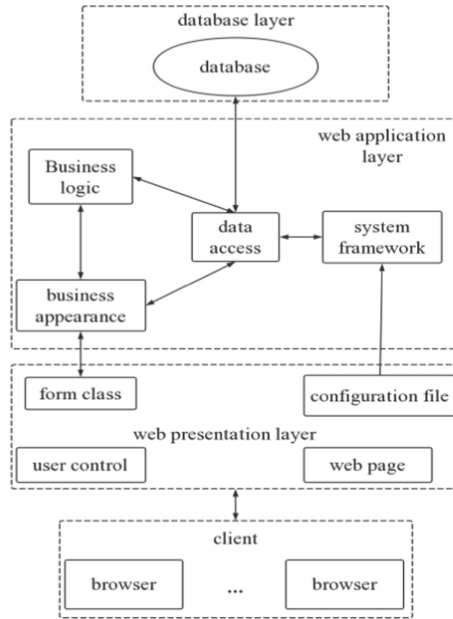


Fig. 3. Platform Functional Architecture

The rural public management service platform is designed and developed according to the needs of residents in rural areas and the functions of government work. The platform fully integrates the rural and peasant resources of relevant departments, and provides relevant services to rural residents. The platform is mainly divided into three functional modules, namely public management system, collaborative office system and social service system [14]. Among the platform function systems, the public management system and the collaborative office system are oriented to government managers, while the social service system is oriented to rural residents [5].

In the public management system, information and data such as labor resources, social security, financial management, land resources, and project decision-making in rural areas are recorded, so that the government can inquire about relevant information when making public decisions. The system management module of the platform is also managed in the public management system. Users need to modify user information and permissions in the system management module of the public management system.

In the collaborative office system, management users can publish notices and announcements, and publish public information internally or to all users. The collaborative office system can also work online and transfer files [11].

The social service system provides a channel for rural residents to obtain information and provide policy feedback. Users can put forward their own ideas for managing rural affairs in the rural affairs construction module of this system, and point out the policy obstacles encountered in the process of policy implementation. The social service module of the social service system can provide rural residents with information on policies that benefit farmers, labor training, market information, and social security information.

5 Conclusion

The rural public management and service platform constructed in this paper provides feasible scientific and reasonable technical solutions for various public management and public service work in rural areas. The platform utilizes.NET technology to enable communication between applications on the Internet using Web services. The platform construction needs to be further improved. By continuously adding functions, improving the design of the Web presentation layer and enhancing the user experience.

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