

Research Article

Design and Research of a Government Affairs Office Platform

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Recent advancements in Digital Communication Systems and Web Technology tendered information systems cheaper and allow people to move into the electronic Government (eGov) platforms. eGov is the use of information and communication technologies (ICTs), whereas good governance refers to how well public authorities manage public and social resources. eGov supports excellent governance practices, yet it also has certain limitations. In this article, we enhance the study of Jiyuan City's Internet-based e-government system based on an analysis of theoretical knowledge and application state. First, we gathered all government affairs platform websites; then, we built the supervision system function code in accordance with the supervision system activity diagram. Finally, the office platform's system deployment was completed, and the government office platform's analysis environment was provided, and it was validated via experiments. The experimental results show that when there are 300 government affairs tasks to be handled, the data recall rate of the design platform's government affairs website is 95%, and the design platform's government affairs processing time is 15 minutes. The proposed government affairs platform has a high processing efficiency and data-carrying capacity.

1. Introduction

New waves of digitization are being unleashed due to fast advancements in Internet technology. E-government has emerged as the primary method and means of government digitization from 1995 to 1997 when the world's major economic powers put forward the development strategy of building an information society country, which primarily drives the digitization development of other aspects of society through government informatization. From the English word electronic government, we get e-government, which is short for electronic government. As a result of optimizing and restructuring the government's organizational structure and workflow, the term "e-government" is used to describe a new type of government administration. We call it e-government in China because the Chinese definition of government encompasses a wide range of institutions and cannot exist independently. Therefore, it is more accurate to call it e-government in China because "government" should be understood as public affairs activities with the help of modern information technology [1].

Since entering the 21st century, with the rapid popularization and development of the Internet, people have seen the great potential of the Internet and its irreplaceable advantages in helping the government realize the interaction with enterprises and residents. Therefore, foreign developed countries have built e-government based on the Internet [2]. With the rapid development of Internet users in China, the use of the Internet to build e-government has been gradually valued. At present, a pilot has been implemented in Jiyuan and Yulin, and good results have been achieved, and this model is being vigorously promoted in other provinces and cities in China [3]. In this great development environment, this study analyzed the Internet-based e-government system in Jiyuan City. As an important infrastructure of informatization, the Internet is more and more closely related to the development of e-government with its strong technical advantages and global influence. Internet-based e-government has made significant progress and improvement in infrastructure, management system, laws and regulations, human resources, capital investment, and e-government public services. Internet-based e-government has become

the development trend of e-government in the world [4]. Many industrialized countries, such as the United States, Canada, Singapore, and many more, are now working to build e-government based on the Internet. "People-oriented" service concepts are progressively strengthened, government portal websites are constructed, and more online services are made available, all of which are strongly linked to government reform and address the issue of the "digital divide" [5]. In terms of enhancing public services and broadening the breadth of services, their Internet-based e-government development has had impressive achievements.

In 2005, the United Nations Economic and Social Council put forward the "e-government readiness index" to measure the development level of a country's e-government from the three aspects, such as "current situation of government website construction," "information infrastructure construction," and "human resource quality," so as to comprehensively evaluate the preparation and public participation of each country's e-government. According to the published global e-government Readiness Report in 2005, it can be seen that at present, developed countries, such as the United States, Denmark, Sweden, Singapore, and Canada still lead the development of world e-government, and the e-government construction of countries such as South Korea in Asia has also ranked among the top in the world [7].

After examining E-development governments in many nations, it is clear that even though it is progressed fast and produced significant successes, the construction level and implementation results are still far behind. In this study, the government office platform is designed using Internet technology, and its application performance is examined. Examination results reveal that the government's internal reform lags significantly behind the widespread use of information technology. In addition, countries must work hard to build an e-government system based on the Internet.

The remainder of this article is structured as follows. Section 2 provides background of methodology. Section 3 presents in details the system design of the proposed model. Section 4 discusses experimental results and performance evaluation. Finally, Section 5 provides concluding remarks and further research.

2. Methodology

2.1. System Site Collection Planning. A site collection is a collection of hierarchical sites that may be handled as a group. Sites in a site collection share functions such as sharing rights, template libraries, content kinds, and web components, and they typically use the same navigation. The site collection's sites are all kept in the same SQL database [8]. Portal sites are often constructed as site collections, with the root site serving as the portal's main page. The internal office platform manages the day-to-day operations of the staff of a county's party and government organs, such as official permission, notice and announcement, internal training, internal meetings, and so on. It creates a system for each department's office. It also provides subordinate departments with a department office space, and the

department office platform may be controlled and developed by subordinate department managers [9]. We designed two website collections in the system based on user demands, as indicated in Table 1. After share point is installed, a personal website collection will be established by default to provide each user with a personal website collection. According to the current needs of Anxian County, the self-built personal website function is turned off in the project implementation.

2.2. Website Collection. Figure 1 depicts the hierarchical planning of the government's official website. The figure shows that the collection of government official websites is planned in a three-tier structure, with the first tier being the government office root website, the second layer being the common function website, and the third level being the first mock exam for each project (meeting). The project and conference workspaces will be established using a uniform template, and the application will be given separate rights [10].

Figure 2 depicts the department office website collection. The website of the department office is separated into two levels. The first-level department office root website is mostly used for navigation; the working spaces of each department on the second floor are designed in the unique department website. The government office and the department office are intended to be two separate website collections hosted on the same server farm. Users will see no difference between the two site collections because they utilize the same login mechanism. Deployment provides greater flexibility to the two site collections for developers [11].

For instance, be maintained independently, alternative solutions can be installed separately, different administrators can be given to the two site collections, and the database can be backed up more easily. Figure 3 depicts its logical structure.

2.3. Office Portal Planning. The government office system is the main application platform for the party and government office in Anxian County. This root website needs to carry the main business display of the office system and the application configuration and functions of some website collections [12]. The notification announcement is implemented by a notification list. Notice and announcement fields is shown in Table 2 These features include the following:

- (1) Notification and announcement function
- (2) Key business collection and display function, such as, my to-do list, meetings I need to attend, and my training
- (3) Common link navigation function
- (4) Storage of global configuration files

The notification and announcement authority is read only for all authenticated users. The designated person can add, approve, and publish after approval. Common link provides users with a navigation link of common web

TABLE 1: System website collection content.

Site collection	An county government office website	Departmental office website
Use	Internal office use	Subordinate departments
Application scenarios	County-level applications such as county notice, county-level document receiving and dispatching, training at the county level	Departmental applications such as departmental notices, department document, sharing department task, department of post
Visitor	All agency personnel	Members of each department can only access the website of their own department
File and record sharing scope	The general situation is shared throughout the county. It can be set by the administrator according to special requirements	Department of shared
Main website	The root website. Official document approval website, conference management website, project management website, knowledge management website, online training website, discuss the website, survey website	Root website sub website of each department
Site-level depth	3 layers. The root website. Functional website. Project specific websites (e.g., specific meetings)	Layer 2. The root website. Department website
The website sets the portal main column	Notice announcement. To do list. County news	Department website navigation. Most users can only see the navigation of their department’s website
Rights management	All authenticated users are read only. According to management requirements for specific functions. Set read and write permissions	Portal read only. Department personnel can only access their own department website. Department administrators can manage their own department websites
Authentication	Domain user authentication	Domain user authentication
Special consideration	The project management website needs to provide anonymous project evaluation function. Only enable anonymous access to this website	Nothing

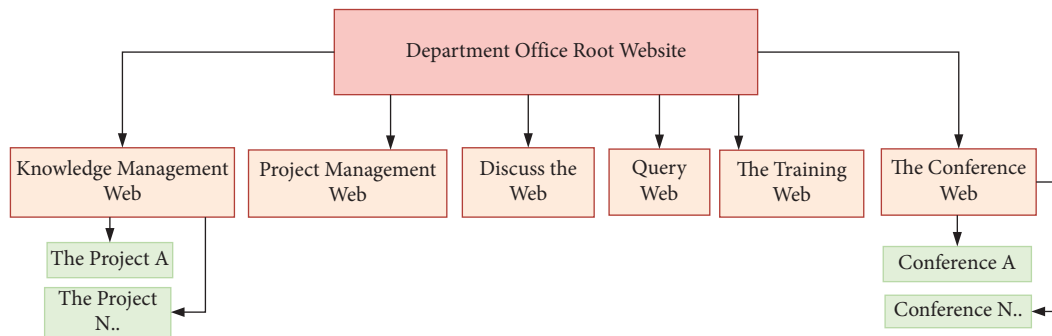


FIGURE 1: Hierarchical planning of government office website.

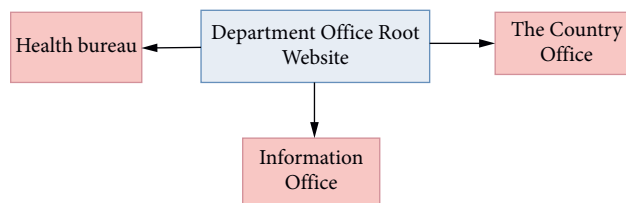


FIGURE 2: Planning structure of department office website collection.

address. The following views are set for notification announcements:

- (1) Effective notice and announcement
- (2) Notification notice I created
- (3) Notice and announcement of pending review
- (4) Overdue notice and announcement

- (5) All notices and announcements

All authorized users have read-only access to common link permissions, which administrators may add, delete, and edit. Only all project views are configured using common connections. User-defined configuration information is stored in the relevant location of the partition [13]. It primarily saves critical development configuration information, and the system

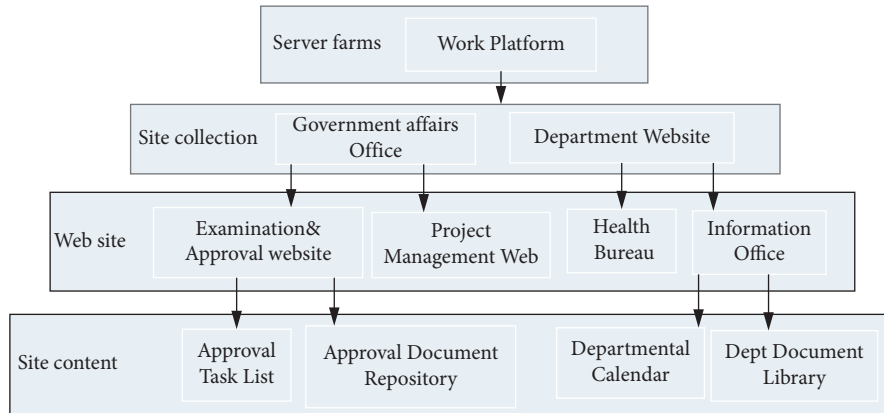


FIGURE 3: Deployment structure of office platform.

TABLE 2: Notice and announcement fields.

Field	Type	Instructions
Headline	Single-line text	Title of notice
Instructions	Rich text	Specific contents of the notice
Maturity date	Date	It will not be displayed after the expiration date

may be employed based on development requirements. Table 3 shows the configuration file storage list.

The configuration information list does not immediately offer the ability to add, remove, or edit the interface. The list is set to invisible and cannot be changed by anybody, not even the system administrator. It can only be viewed through the application's special access page.

3. System Design

3.1. Activity Diagram of Supervision System. The government has established supervisory regulations to institutionalize and standardize the monitoring of the implementation of major local government decisions and leadership instructions, as well as to enhance work efficiency and quality [14]. The important decisions here include the important meeting decisions and important documents of the municipal government, and the important meeting decisions and important documents required by the State Council and the provincial government. Important meeting decision making refers to the major issues decided by the municipal government through the citywide and comprehensive important meeting and the important work of the Ministry, including the work tasks and policies and measures determined in the government work report approved by the Municipal People's Congress, the work tasks and policies and measures determined by the plenary meeting of the municipal government, and the regular meeting of the municipal government and the meeting of county, city, and district heads. The tasks, measures, and requirements put forward by several important comprehensive meetings. Important documents refer to the documents and telegrams issued in the name of the municipal party committee and the municipal government, involving the reform and release of individual cities, economic development, and social stability, which have a great impact on the overall situation, and the municipal government and the

office spirit and art leader receive the assignment. All kinds of instructions from leaders that need to be undertaken by relevant units also need to be carried out by the inspection department. The inspection method is the same as that of the vertical decision-making pole. The search system is a part of the office system, and the activity diagram is shown in Figure 4 [15].

The system include daily inspection, query and statistics, undertaking inspection items, special report of inspection situation, registration, inspection, management of inspection category and authority, mayor's access to document catalogue, zisongtuo personal management of inspection room, and so on. The specific functional requirements are analyzed as follows:

- (1) The report feedback period of the supervision feedback report is generally once a quarter, and special urgent documents need special treatment.
- (2) The production of supervision notice and supervision reminder shall be formal.
- (3) The executive meeting of the government must supervise and inspect.
- (4) The documents (including official documents) sent to the mayor for approval need to be read by the supervision section.
- (5) Obtain the source of supervision decision. Participate in meetings related to supervision matters or read relevant documents, clarify supervision tasks, and accurately grasp supervision tasks and leadership requirements.
- (6) Receive the official documents required by the secretary section for supervision, send them to the leaders for instructions, and conduct supervision and project establishment according to the instructions of the leaders.

TABLE 3: Storage list of Configuration files.

List	Use
Organizational structure list	According to the hierarchical structure stored in an county party and government institutions
Configuration list of event-triggered SHORT messages	Stores SMS and desktop message event triggering configuration information
Time-triggered SMS configuration list	Stores SMS and desktop message time triggering configuration information



FIGURE 4: Activity diagram of supervision system.

3.2. *Testing Environment.* The development of this system needs to configure the corresponding software environment, including the development of computer, server software, and database management system. The operating system used in this system development is Windows 7. The java development environment is MyEclipse, and the system web server adopts Tomcat and Apache. At the same time, in order to centrally manage the data in the system, Oracle with better management ability is used. In order to achieve good software development and testing results, the system builds the server environment at the beginning of development, so that the overall evaluation and analysis of the operation of the system can be carried out, so as to make configuration adjustment according to the nonfunctional needs of users. The hardware configuration of the server is related to the operation effect of the system. Therefore, through preliminary investigation and analysis, it is determined that the hardware configuration environment of the system is the server side adopts cpu3.0 GHz CPU processor, the memory space is 16 g, and the disk storage adopts 1T × 4 layout; the number of servers is 2 application servers, 1 database server, and 1 remote backup database server established at the same time.

In the configuration management of the system server, it is also necessary to manage the client running software, including operating system, database management system, and various software required for server operation. In order to achieve better system use effect, the network configuration and management are carried out on the server side. The total bandwidth of the system adopts the 100 m exclusive strategy. At the same time, two-wire access to the computer room is carried out. In this way, users can achieve better access effect and apply for a public IP address of the operator. It also configures various system environments on which the development program depends, including the environment variable configuration of Java operation, the operation and startup of database management system, and the configuration and management of various network security software, to ensure that the system is developed and operated in a safe and reliable environment.

3.3. *System Function Code Implementation.* Although some information in the system is disclosed to the public, most of the business is processed internally. For information security, the system divides each type of user into roles and flexibly controls the operation permissions of each type of role according to business needs. After logging into the system, external users can only view the relevant publicly disclosed information. Other business functions can only be operated after users enter the system through identity authentication. The system user shall be authenticated through the user name and password. When entering the user name and password to submit for login, the system first verifies the nonemptiness of the user name and password. If it is empty, the user will be prompted to improve the information. If both are not empty, the accuracy of the specific user name and password will be further verified, only when the user name and password are accurate, one can successfully enter the system. When designing the layout of the operation interface of the system, we should not only consider the beauty and convenient operation but also improve the access efficiency of the web page as much as possible. These can be realized through script.

4. Experimental Results

4.1. *Experimental Setup.* To ensure the efficiency and security of the program, we utilize two servers to establish a network, with the operating system Windows Server 2008 R2 or higher preinstalled on the server. Figure 5 depicts the network structure diagram and configuration diagram.

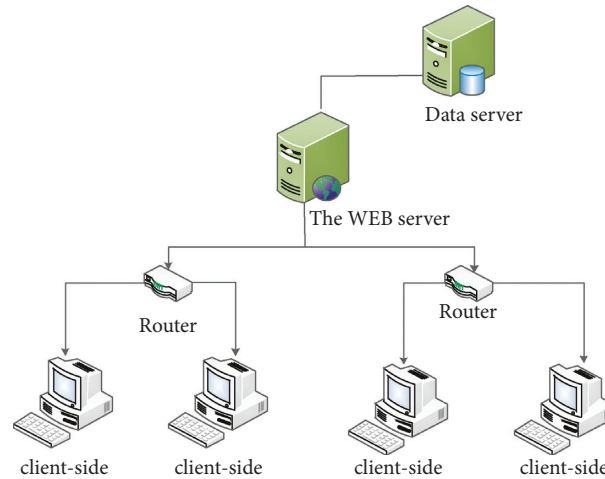


FIGURE 5: System network topology.

TABLE 4: Configuration detail of experimental setup.

Single node specification	CPU Processor Hard disk Connectivity Memory	Intel Core Tm Intel Xeon 5600 series 120 GB 100 Mbps Ethernet LAN 8 GB
Software	Operating system Database JDK Supporting software OS type	Microsoft windows server Microsoft SQL server 2005 SP3 1.8 above IE7.0 2008 R2

Install share point 2010 and ad on one server, and install the database on another server. The server must be connected. Client: the system has no restrictions on the hardware used by the user's client. It is mainly required to use the windows operating system (XP, win7, vista, 2003, 2008) and correctly access the service website through IE browser 7.0 and above. Table 4 shows the detail configuration detail of the experimental setup.

4.2. Government Office Processing Platform Government Office Website Data Recall Rate. In order to verify the literature [3, 4] platform and the government official website, data recall rate of the developed platform is utilized to validate the government office processing performance of the proposed government office platform. Table 5 shows the outcomes.

We can observe from Table 5 that the data recall rate of government office websites varies depending on the platform. For example, when the number of government tasks to be processed is 100, the data recall rate of the government official website on the document [3] platform is 45%, the data recall rate on the document [4] platform is 58%, and the data recall rate of the government official website on the design platform is 89%. Similarly, when 300 government tasks are to be processed, the data recall rate of the government official website on the document [3] platform is 54% and government official website on the document [4] platform is 63%, whereas our proposed approach for the data recall rate of the government official

website is 95%. According to the aforementioned results, the government office processing platform created in this article has a large data-carrying capacity and strong platform performance. Figure 6 shows the overall performance comparison with the proposed design.

4.3. Government Office Processing Time. In order to verify the government office processing efficiency of the designed government office platform, the document [3] platform, document [4] platform, and the government office processing time of the designed platform are adopted, and the results are shown in Table 6.

By analyzing Table 6, it can be observed that there are differences in the processing time of government affairs under different platforms. For example, when the number of government tasks to be processed is 50, the government office processing time of document [3] platform is 87 min, and for document [4] platform, it is 76 min, whereas for the proposed design platform, it is 3 min. Similarly, A government office's processing time for document [3] is 398 minutes, document [4] is 336 minutes, and the proposed design platform is 15 minutes when there are 300 government tasks to be handled. That platform's processing time is much shorter than other platforms, which indicates that the developed platform's processing efficiency is greatly enhanced. Figure 7 shows the comprehensive performance evaluation with the proposed design.

TABLE 5: Data recall rate of government office website.

Number of tasks (piece)	Data recall rate of government office website (%)		
	Literature [3] platform	Literature [4] platform	Design platform
50	43	52	86
100	45	58	89
150	54	63	93
200	43	57	96
250	63	53	98
300	54	63	95

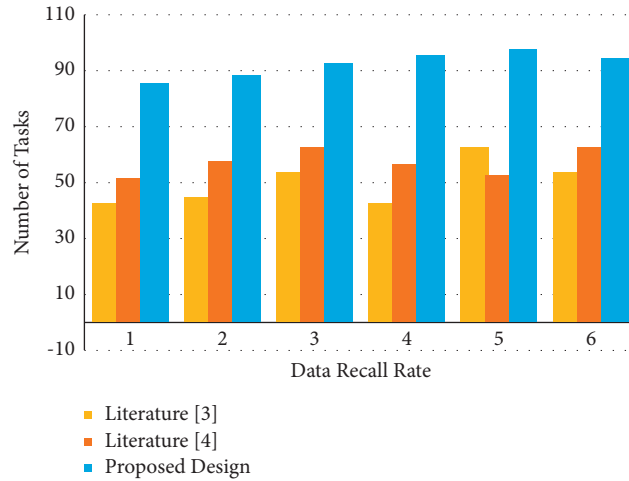


FIGURE 6: The overall performance comparison with the proposed design.

TABLE 6: Processing time of government affairs.

Number of tasks (piece)	Government office processing time (min)		
	Literature [3] platform	Literature [4] platform	Design platform
50	87	76	3
100	164	143	5
150	197	187	7
200	264	232	9
250	295	276	12
300	398	336	15

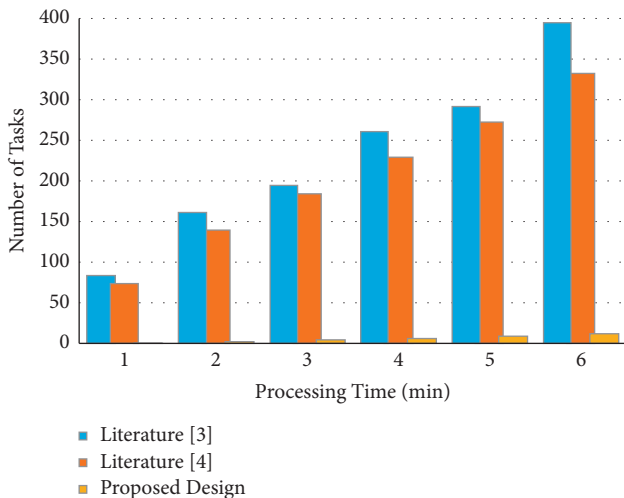


FIGURE 7: The comprehensive performance evaluation with the proposed design.

5. Conclusion

This article examines government relations from a theoretical perspective. The proposed approach allows authorities to develop and manage their platforms as advocates of digital commons and citizen coproduction. We assemble the government office platform’s website collection, create an activity diagram for the government office’s supervision system, and then create a function code based on that design. Office platform system deployment and test environment verification experiments are conducted to test and verify the government office platform’s test environment. Moreover, there is also a 95% data recall rate on the design platforms official website when there are 300 government jobs to be handled. It demonstrates that the government office processing platform proposed in this article has a large data-carrying capacity and a decent performance level. Finally, it takes 15 minutes to handle 300 government affairs tasks at a

government affairs office. This demonstrates that the Government Affairs Office of the proposed platform's processing efficiency has been considerably enhanced as a result of the new design. In the future, a new level of maturity will be added, as well as a link between eGov platform maturity and smart city requirements such as smart governance.

Data Availability

The data used to support the findings of this study are available from the corresponding author upon request.

Conflicts of Interest

The authors declare that they have no known conflicts of interest or personal relationships that could have appeared to influence the work reported in this paper.

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