

Study on Physical Construction Market Information System Based on B/S: A case study on the system of Harbin Construction Market Center

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Abstract

The physical construction market, which was exploited from practice of deepening the construction system reform and enhancing the construction market management, is an effective way to normalize the construction market activities. In order to realize the construction market competition of public, justice, fair and prevent corruption, it is necessary to carry out a set of scientific management in the physical construction market. With the development of network technology, traditional MIS development method has been far away from the demand of the users in the network environment. It will be a new popular technique to develop MIS with Web skills. In this paper, the writers analyze the Client/Server pattern and introduce the latest MIS system structure and demand of the environment based on Browser/Server. At the same time, taking the system of Harbin Construction Market Management Center as an example, the writers describe the development and analysis of the system.

Keywords

Physical Construction Market, MIS, Browser/Server, Client/Server

1. Introduction

Physical Construction Market plays a main role in standardizing market corpus behavior, maintaining to construction market order, and enhancing to construction market and contracting/distributing trade management, and establishing public, fair market competition environment, suppressing the unhealthy tendency in construction realm. Now the government of China pays more and more attention to physical construction market that has been established in China (Luo Changming,2001). After establishing the bargain center in every city, and becoming self-driving and circulative system, the main work and key step in Physical construction market information system and information net construction are how to further develop the function to physical construction market, and promote the formation of unifying to open the market; how to adapt to the change of managing style, from expanding style to intensive style, from mobile to standing, from spreading to unified, in construction market and project construction management; how to improve the physical construction market working efficiency and provide the related sections of government and market corpus with accurate information service.

2. The evolution of physical construction market information system structure

Software and hardware technique of computer, especially the development of Internet technique, leads

to an important revolution to information technique. Along with these advanced technique used, the applied structure of physical construction market information system also experienced three stages.

2.1 Concentrate or terminal structure

This kind of way is to be adopted in former mainframe era. While the software designer designs program in mainframe, customers search, index and precede information on Client/Server.

2.2 Client/Server structure

Clients/Server structure is an intercourse between a Client and an applied Server. Now, this kind of structure is still main technique for software programming and development. Client/Server does the work such as completing the different application, providing the different functions by using one kind of software which includes Client and Server to carry. The development personnel need to develop the terminal software, and still develop the software of the server at the same time, but at another server of interview need software, and this is a couple, right point to point and frame construction mode.

2.3 Browser/Server structure

It is the same applied ways to develop software with the Client/Server technique. This mode removes some localization of Client/Servers, for example the client of Client/Server includes many platforms, but the Browser/Server synthesized the browser, information service technique, Web technique and other technique. Through a browser user can visit many applied server, form one point to many points, much order the dotty construction mode. Connecting one browser with a host or system, user does not need to replace the software, or starts another procedure again. Browser/Server application software structure of one point towards many points, many points to many points make software designer scarcely need to do much work, but consider to how to reasonably buildup information structure on server and how to provide the information service to browser efficiently.

Just to say, with computer application structure developing, especially introducing of Internet Web technique user will make physical construction market information system's applied structure, development environment and applying environment change a lot.

3. Structural characteristics of Browser/Server

Browser/Server expands the method of Client/Server, is a kind of distribute Client/Server. Customer can send out the claim to many servers on the network by a browser. Browser/Server structure simplified the management work of Client/Server, client computer only need to install a little software, and the server will support more work. Interviewing database and operating application system will be completed on the server. The main advantages are following (Chen Feng and Liu Chunyuan, 1997):

- Browser/Server technique standard is liberal, not proprietary.
- The lower cost of application developing and management: The application of the Client/Server, whether install, raises or promotes to higher grade need carry out in all customers' servers, but the Browser/Server technique, many works are carried in the server, in the customer workless, so this style can lower the development and management cost.
- Free interview towards information and using system: Nowadays, many computer customers have already established the network, because the information and application system can be interviewed through the Web browser, almost all customers can interview the information and system unrestrainedly and actively.
- The information system of the active service: Each customer of the information system can

interview the information and system unrestrainedly and actively according to different request.

- The operation method is clear and simple: As long as the customers learn the browser's using method, they learn the method of the every kind of information resources in the practical system.

4. Working principle of the mode of Browser/Server

The structure of Browser/Server in fact has three layers: Browser—Web Server—Database Server, see figure 1.

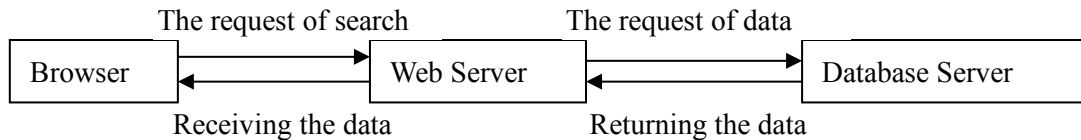


Figure 1: Working principle of the modules of Browser/Server

5 The physical construction market information system based on Browser/Server

5.1 The description of the main technique related to the Browser/Server

Nowadays techniques related to the Browser/Server primarily include the development technique of Internet/Intranet such as HTML, CGI, JAVA, ASP, etc.

5.1.1 HTML (HyperText Markup Language)

It is a language of WWW to establish the file of hypermedia. It describes a passage of text through the mark and property. In addition, it also provides the hypertext link from one file to another file or between the internal different parts of one file.

5.1.2 CGI (the Common Gateway Interface)

It is a connecting standard between the exterior application and WWW server. It rules out a group of standard environmental variable and parameter format. Receiving the environmental variable handed over by customer, a CGI program outputs the information according to the request of customer dynamically, provides service using the information in the server of database as data source, combines the WWW service and the database service.

5.1.3 Java

It is a latest language of network program, and have the characteristics as simplicity, oriented-object, independence from the machine structure, can be transplant, multi-threads, and suited for the network calculation.

5.1.4 ASP

The ASP provides a script development environment of the server and can make use of it to establish and circulate the dynamic, alternant, and efficient application of the network server.

ASP interviews the database using the ADO (ActiveX Data Object), the browser of the customer delivers HTTP claim to the Web server, and the Web server responds to the HTTP claim, connecting the database through the ODBC, completes the operation by the database module ADO and delivers the results to the browser in the form of HTML code. See figure 2.

5.2 The case of the physical construction market information system based on Browser/Server

According to the real condition of the Harbin Construction Market Management Center, we adopt the technique such as HTML and ASP, etc, and establish an information system of construction market.

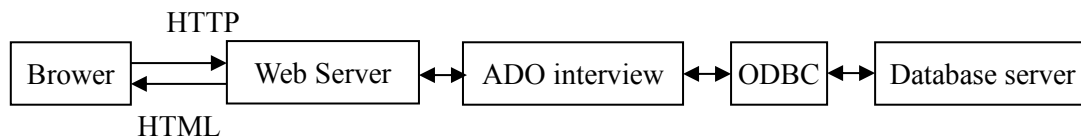


Fig.2 The working principle of the ASP interviewing the database

5.2.1 The background of the system development

The physical construction market information system of Harbin Construction Market Management Center is not just a set of software. It blended the management ideology of the municipal construction committee, the business experience of each section, and the appropriate application of the computer technique. An excellent information system certainly includes the deep cognition and is understudied to the business of management section, but this kind of the cognition is deepened at the long-term development, especially in the application continuously. General information system of the development management section is a mature system of development management section, which stem from reality, consider "Based on application".

The management center of Harbin Construction Market totally contain ten working departments in proper order, they are project quoting, supervision investigation, tender and tendering, investigation design, contract investigation, civilization construction, labor insurance plan as a whole, and so on. The work characteristic of the physical construction market is connection closely, obligation distinct. All projects enter the market from the project quoting, and handle the related procedure according to the workflow, and finally receive the construction license, and exit. See figure 3.

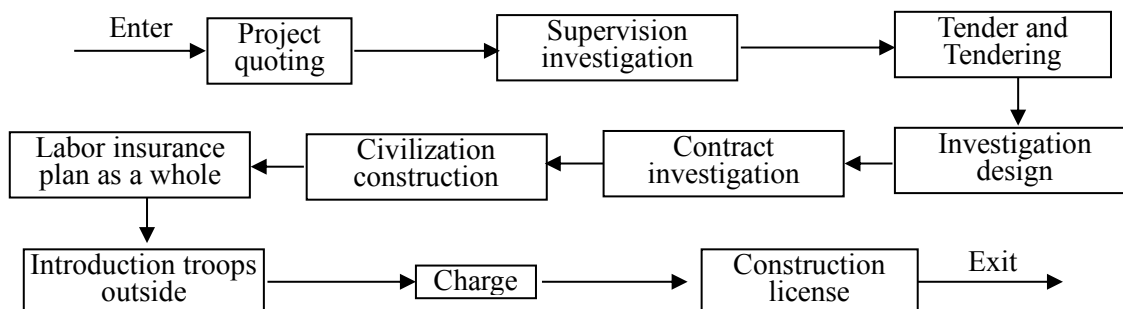


Fig.3 The workflow of the physical construction market

5.2.2 The construction of system

This system primarily includes two modules, which are the examination and approval of the construction project and the daily office automation of government. See figure 4.

- Office Automation module: The usual business management primarily handles the mansion inner office synthetic businesses, such as the document sign jointly, sign the report, meeting management, distributing text notice of the business section, office notice, personal management, data search and report of asking for instructions etc. This item aims to the process of the developments engineering examination and approval to develop the system of the developments engineering examination and approval, and realize the timely management of the whole process of examination and approval. The storehouse of information primarily manage the integrate information that inside the building, (such as telephone directory, service information etc), administration and management information, personnel information, national policy and laws etc.
- The module of examine and approve for construction project: According to the construction department, the construction project should adopt the method of construction permit; this module is developed under the precondition of constructing the visible market for Harbin. The module is developed on the bases of tightly around the united examination and approval procedure of construction project, because of this module, decreasing the labor amount of missionary, quicken the time of examine and approve for construction project, increasing the worker transacting.

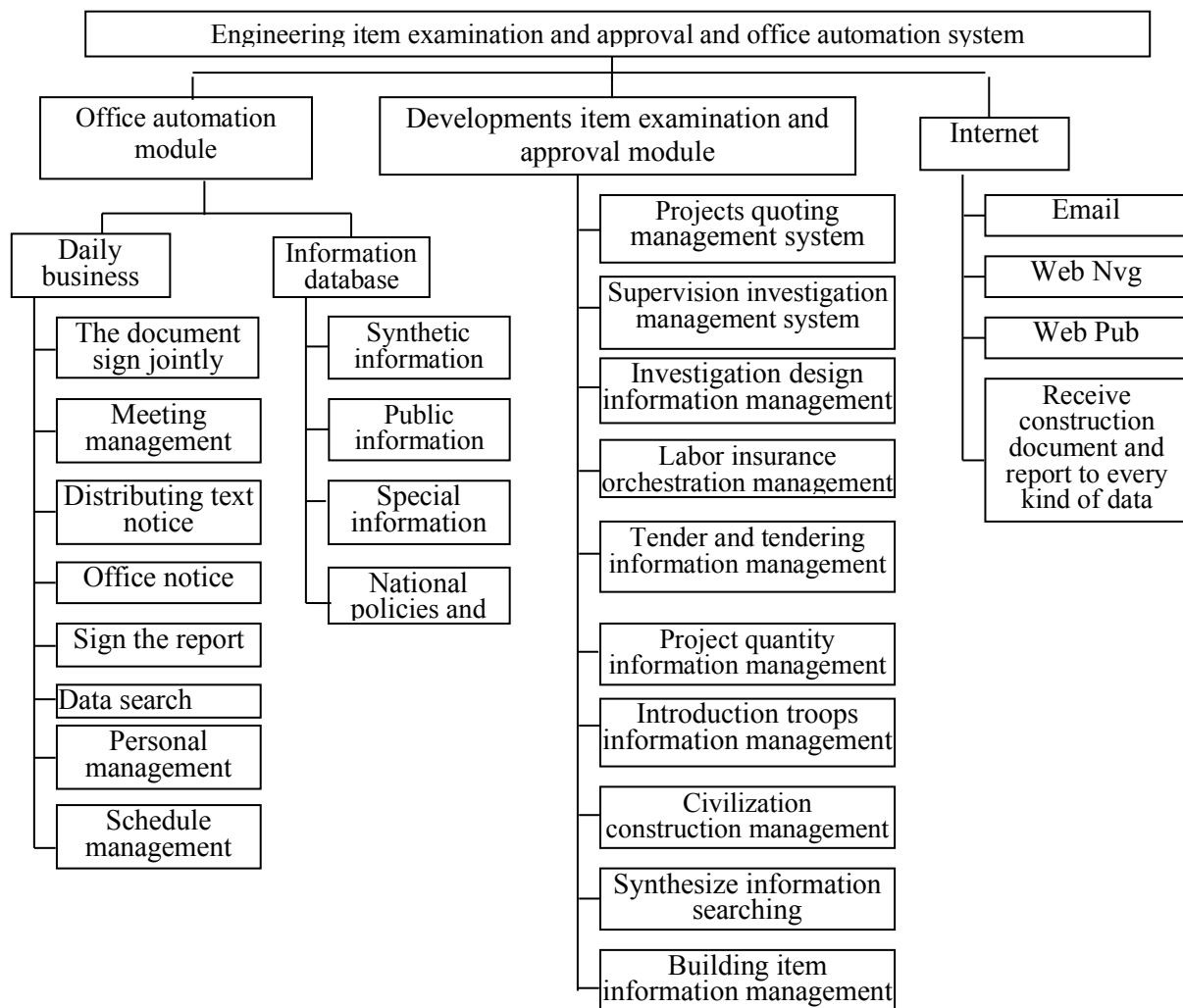


Figure 4: Dividing the functions of the system

- The module of Internet: The module is obligated for matching the digital project of construction department and construction committee of province and the native government for the sake of association with Internet. Make use of the E-mail function, any kinds of information (such as the text, binary system, diagram resemble, speech, etc.) could be translated between the management departments and departments of building, the employees and employees, the inside and outside of the building expediently, user can encrypt the mail. At the same time, this system of mail is the key part of realizing the cooperated works and disposal works in the usual management works. All computers of the building could be connected into the Internet and any kinds of resources on Internet could be used through the server. The safety of information in the computer system of building could be guaranteed through the establish the fire wall, and it also spreads any kinds of statistic and report forms and accepts the files of construction department and government in time, by establishing the website on the Internet, the government department could receive intendance of public opinion and enable the data resources of government to be shared farthest, and exerting its social benefits and economic benefits, and driving the development of economy. It could ground the bases for working on Internet.

6. Conclusion

This paper combines the latest technique of computer and network, discussed a new developing method of information system of physical construction market based on Browser/Server technique. Combine with the example of the information system that circulated by the management center of Harbin Construction Market, it discusses the apply method of this technique for system developing.

The information system of physical construction market that is constructed by the Browser/Server method, it in favor of lower the cost of development and maintenance, this system has the feature of being used and maintained easily, and it has certain referenced meaning for the development of related system.

7. References

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