



# Develop the International Trade Business Information Management System Based on Computer Technology

Wei Du(✉)

Nanchang Institute of Technology, Jiangxi 330044, China  
2425096836@qq.com

**Abstract.** This paper uses B/S mode to build an international trade business information system. International trade enterprises will generate a lot of data and information in the process of conducting transactions. In order to smooth the transaction process and ensure that there are no errors in the transaction, the use of computer technology can greatly improve the accuracy and efficiency of business operations and sales. This paper expounds the B/S mode of computer system in detail, and uses the B/S mode to build an international trade business information system based on the needs of international trade enterprises. This system can transmit data across regions and platforms, realize real-time interaction of internal information of international trade enterprises, and improve the information transmission efficiency of international trade enterprises.

**Keywords:** Computer Technology · International Trade Enterprises · Business Information Management · System Development

## 1 Introduction

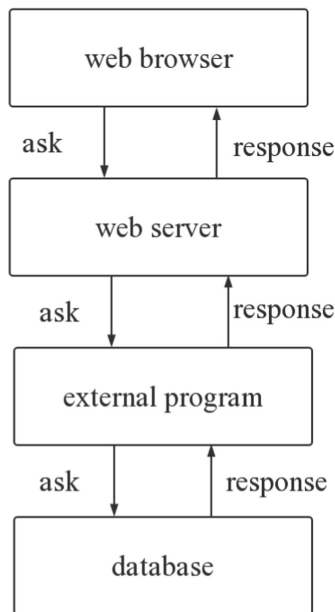
Since the 1990s, computer technology and communication technology have been greatly developed, and the change of information technology has made computer technology increasingly common in people's work and life. The enterprise management method that applies computer technology to enterprise management and operation has been developed for more than 30 years. Today, even the traditional production enterprises are also using computer technology to improve the efficiency of enterprises. With the development of information technology in recent years, the enterprise management system should also develop along with it. Most of the traditional business information management systems use the C/S mode. The development work of this mode is cumbersome, the development cycle is long, and there is a lack of open standards, which does not allow cross-platform operation, so the C/S mode has been gradually replaced. Today the web is used by more and more systems. The rich information resources and convenient browsing methods in WWW make many people turn the information system to the cross-platform information query and management mode. At present, the B/S system is more convenient and fast, and meets the needs of information sharing within the enterprise.

## 2 B/S Mode

In the traditional two-tier C/S mode business information management system, the client is directly connected to the database server, and the client is responsible for interactive behavior and collection of information. But with the popularization of computer technology, the amount of data on the computer is getting bigger and bigger, and the database system is also getting bigger and bigger, the traditional C/S mode seems to be a bit backward. The system constructed by the C/S model is a closed single-item single system, which makes it difficult to communicate directly between different systems. It is also a very big disadvantage that the update and upgrade of the C/S mode are difficult and the maintenance is difficult [7].

Compared with the C/S mode, the B/S mode is much more flexible. The B/S model is developed based on the C/S model, and is a new network information management system platform model based on Web technology [9] (Fig. 1).

When the user needs the service of the server and gets an HTML page, the system will take the browser as the seven point, and send the request through a form or other means. The web server parses the form after receiving the request [5]. If it is a general URL request, it will be processed directly by the Web server and sent to the service. If there are specific requirements, or you need to access and query the content of the back-end database, use the relevant handler for connection processing. After the database processes the requirements, it returns the results to the web server, the web server interacts with the user, and the browser displays the results to the user [4].



**Fig. 1.** B/S Architecture Diagram

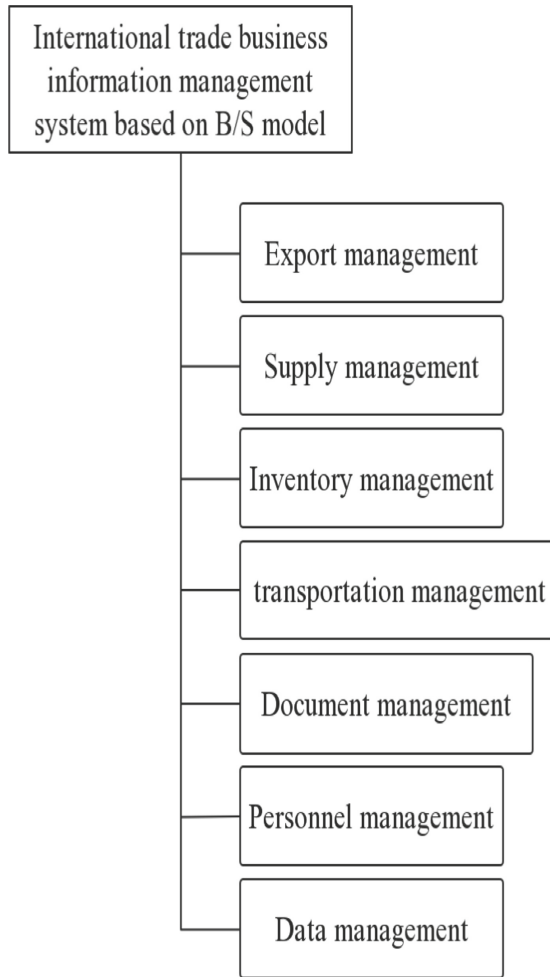
The biggest difference between B/S and C/S is that a middle-tier server is added in the middle of the B/S structure, that is, a Web server. Such adjustment can greatly reduce the pressure on the client and distribute the load to the Web server in a balanced manner. It is precisely because of this advantage that today's systems can provide users with more diverse services [6]. B/S has many advantages, such as convenient software maintenance and upgrade, open standards, flexible system, low client load, and good security. In the system using the B/S structure, the client only needs to have a browser, no other software needs to be installed, and the zero configuration of the client is realized [10]. When the system needs to be upgraded or maintained, the easy-to-split system structure can more quickly find and replace the program that needs to be updated. The standards adopted by the B/S structure are open and non-specialized, and are determined by the standardization organization, which ensures the universality and cross-platform of the system. In the system using B/S structure, the client and the database server are not directly connected, which can effectively prevent the illegal intrusion of users [3]. The B/S structure is very useful for the current data-rich Internet and is an important direction for the next system development. Using this structure in international trade enterprises can effectively improve the security and efficiency of the system [12].

### **3 The Structure of the International Trade Information Management System**

The international trade business information management system constructed in this paper is mainly responsible for completing all the processes of international trade business and saving the data. Based on the requirements of international trade enterprises for the system, the system mainly has seven functional modules, namely export management module, supply management module, inventory management module, transportation management module, document management module, data management module and employee management module [1] (Fig. 2).

The export management module includes four sub-modules: export contract, sales process, foreign exchange receipt registration, and export audit. The main function of this function module is to grade the external contract, track the user's letter of credit and related documents, and monitor the key links in the contract performance process [14]. In order to facilitate the performance of the contract, most of today's international trading companies will issue a detailed list of goods according to the letter of credit or the contract, and will use the detailed list as the basis for making relevant documents later. This module can track the performance of contracts, confirm the opening and transmission of documents, and remind staff at each link [13].

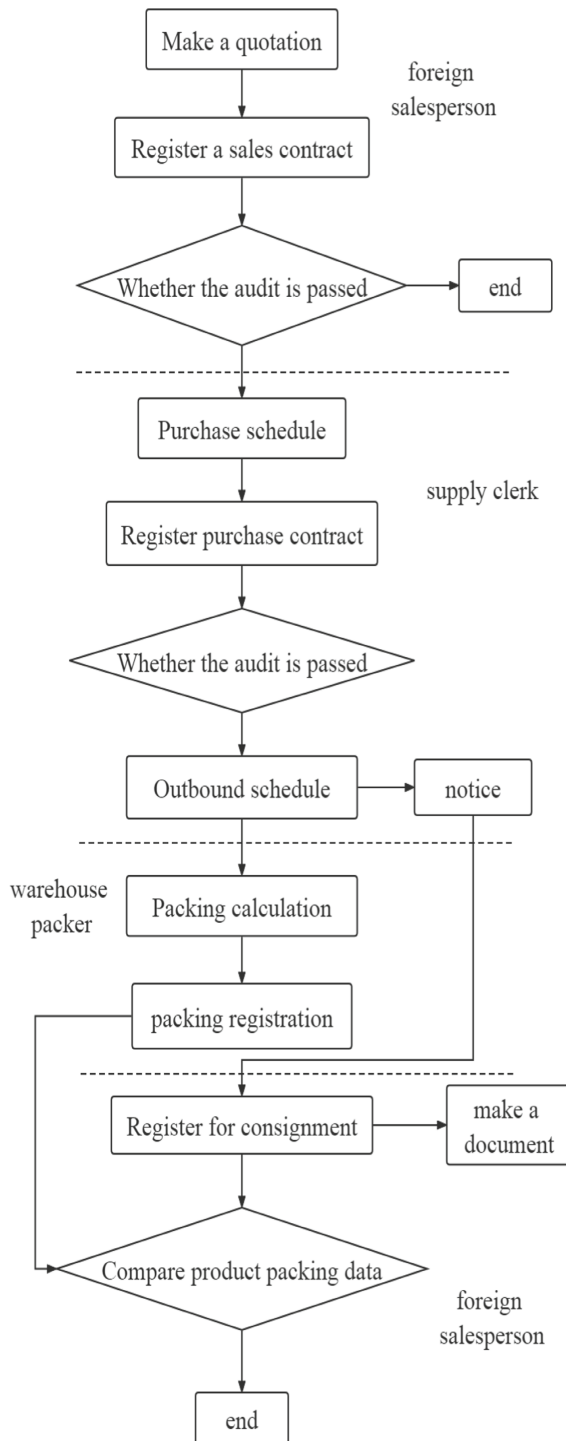
The supply management module includes five sub-modules: purchasing contract, purchasing plan, purchasing payment, expediting plan and purchasing process. The main function of this function module is to monitor the execution of the procurement process to ensure that the quantity, price and time of the procurement are accurate. The system can also record changes in procurement costs, providing a historical reference for enterprises.



**Fig. 2.** System function module structure

In the inventory management module, there are two sub-modules, the inbound order and the inbound plan list. The main function of this function module is to help warehouse managers to put in and out of stock items, to ensure the correct quantity of goods in the warehouse, and to prevent errors in the transaction process. Under the traditional enterprise management method, the warehouse of the enterprise is prone to overstock, capital occupation, and inventory shortage. Using this system to record and master all aspects of inventory can ensure the smooth progress of enterprise business [15].

The transportation management module includes four sub-modules: shipment level, transportation plan, packing registration, and packing measurement. The main function is to provide bill registration, packing registration, storage and transportation registration. In this module, users can query according to the type of goods, time, and company.

**Fig. 3.** System work flow chart

The main function of the document management module is to make, modify, query, print and send the documents and vouchers in the transaction process. In this module, all the documents are stored. The basic information and public data of each transaction of the enterprise are saved. This module automatically generates the complete set of documents required by the operator.

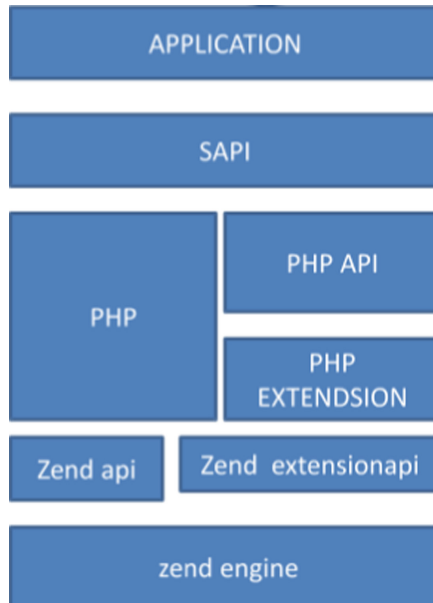
The main function of the data management module is to maintain and manage various data information in enterprise management, including commodity information, supplier information, customer information and so on (Fig. 3).

## 4 System Function Realization

### 4.1 System Operation

The system uses JavaScript to provide interactive capabilities and enhance client-side functionality. JavaScript is very powerful and relatively simple. The JavaScript application can verify the validity of various forms entered by the user before the client sends the information data to the Web browser, which improves the efficiency of the system and saves Web server resources and network bandwidth.

PHP technology is selected in the system. PHP technology is a scripting language that runs on the server side. Regardless of whether the client's browser knows the scripting



**Fig. 4.** PHP four-layer structure

language embedded in the HTML page, the use of PHP technology can generate dynamic, interactive, high-performance Web service applications, making the system adaptable to various browsers. The system uses the PHP scripting language to establish a way of connection and communication between the Web server and the Web browser. The PHP scripting language runs between the web browser and the web server. When the web browser sends information to the web server, the PHP scripting language processes the information, and then sends the processed information to the web server. The database of this system is developed based on PHP technology. The system will provide users with a unified browser interface on the client side, and users can easily master the use of the system. User programs are unified and centralized on the WWW server, and developers and system maintainers can easily update and maintain the system. PHP technology can greatly reduce software development and maintenance costs (Fig. 4).

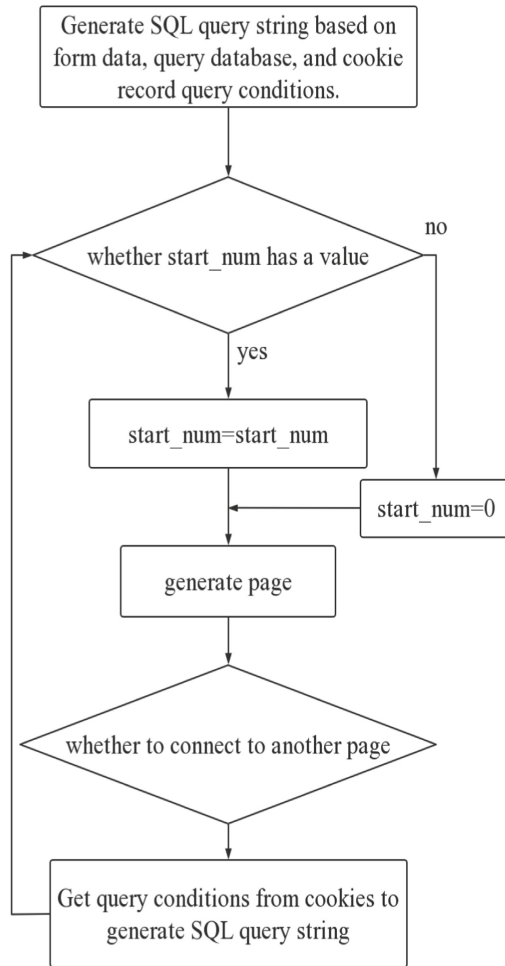
## 4.2 Database Design

In the database design, the system uses the design of independent access rights, and assigns independent database access accounts to users of each department in the system to ensure the security of key data and information of the enterprise.

## 4.3 Search Function Settings

The system provides users with a search function, and users can search the information data in the database according to keywords [16]. In the process of designing the search function, attention should be paid to the display of query results. If the system sends the query result to the client at one time, the network line will be congested and the system will run slowly. In order to solve this problem, the system uses paging technology. Paging technology is to send query results to users in batches. After the user enters the query conditions in the query system, the database will obtain all the information data that meet the conditions, and output the query results in batches. Paging technology can greatly reduce the operating pressure of the server and client, and improve the user experience [2].

In this system, the dynamic paging method of multi-page transfer is used to realize the paging technology. The system uses cookies to save form data. After the number of records displayed on each page is fixed, the offset of records between pages can be determined. The system only needs to determine the relative relationship of all displayed page numbers or pages to obtain corresponding query results [8] (Fig. 5).



**Fig. 5.** Paging technology implementation process

## 5 Conclusions

The international trade business information management system constructed in this paper adopts the current mature mainstream Internet technology. The B/S framework can make the system development and maintenance cost low, the interface is friendly and unified, and it has high practicability for international trade enterprises.

## References

1. Bai Y (2019) Research on the interaction between China's knowledge-based service trade and goods trade. Zhejiang University. <https://doi.org/10.27461/d.cnki.gzjdx.2019.000475>
2. Chen G (2021) Analysis on optimization of MongoDB database paging technology. Commun Inf Technol 04:53–54



3. Deng Q (2022) Research on the risk prevention and control measures of foreign exchange financing of Chinese banks in international trade. *China Collective Econ* 02:82–83
4. Li H (2018) Analysis of the impact of Internet e-commerce on traditional international trade and countermeasures. *China's Strateg Emerg Ind* 12:54–55. <https://doi.org/10.19474/j.cnki.10-1156/f.003431>
5. Liu Y (2021) Research on the prevention and control of financial risks in international trade. *Finance Econ* 35:85–86. <https://doi.org/10.19887/j.cnki.cn11-4098/f.2021.35.042>
6. Lu D (2022) Research on cargo rights in international trade ocean logistics and transportation. *China Logist Purch* 03:62–63. <https://doi.org/10.16079/j.cnki.issn1671-6663.2022.03.035>
7. Ning X (2022) The impact of international logistics development on international trade and its response. *China Logist Purch* 02:120. <https://doi.org/10.16079/j.cnki.issn1671-6663.2022.02.060>
8. Pan G (2021) Discussion on data paging technology in JSP development environment. *Mod Inf Technol* 5(20):33–35. <https://doi.org/10.19850/j.cnki.2096-4706.2021.20.009>
9. Qu Y (2019) An analysis of my country's international trade competitiveness under the background of e-commerce. *China Civ Commer* 02:6
10. Shen Y, Chen L (2022) Research on the international trade form, regional coordinated development and institutional system integration of Hainan Free Trade Port. *Nanhai J* 8(01):20–32
11. Wang L (2019) Innovative research on international marketing strategies under the modern international trade environment. *Mod Mark (Late Issue)* 01:66
12. Wang Y (2018) The influence of the Internet on the international trade of small and medium-sized enterprises in my country and its countermeasures. *Mod Shopp Malls* 17:55–56. <https://doi.org/10.14013/j.cnki.scxdh.2018.17.029>
13. Zhai X (2019) Research on the role of information and communication technology (ICT) on trade in services. *Tianjin University of Finance and Economics*. <https://doi.org/10.27354/d.cnki.gtcjy.2019.000214>
14. Zhang W (2021) Research on the coordination effect of logistics and international trade development. *China Storage Transp* 12:155–156. <https://doi.org/10.16301/j.cnki.cn12-1204/f.2021.12.088>
15. Zhang W (2008) Research on the application effect of computer training system in international trade practice teaching. *Entrep World Bimonthly (Theor Ed)* 12:111–112
16. Zheng A, Zhuang Y, Nan L (2019) Optimization of control data paging technology based on ASP.NET. *J Chifeng Univ (Nat Sci Ed)* 35(05):33–35. <https://doi.org/10.13398/j.cnki.issn1673-260x.2019.05.011>

**Open Access** This chapter is licensed under the terms of the Creative Commons Attribution-NonCommercial 4.0 International License (<http://creativecommons.org/licenses/by-nc/4.0/>), which permits any noncommercial use, sharing, adaptation, distribution and reproduction in any medium or format, as long as you give appropriate credit to the original author(s) and the source, provide a link to the Creative Commons license and indicate if changes were made.

The images or other third party material in this chapter are included in the chapter's Creative Commons license, unless indicated otherwise in a credit line to the material. If material is not included in the chapter's Creative Commons license and your intended use is not permitted by statutory regulation or exceeds the permitted use, you will need to obtain permission directly from the copyright holder.

